

UNITED STATES GOVERNMENT
MEMORANDUM

June 29, 2020

To: Public Information (MS 5030)
From: Plan Coordinator, FO, Plans Section (MS
5231)

Subject: Public Information copy of plan
Control # - S-08004
Type - Supplemental Development Operations Coordinations Document
Lease(s) - OCS-G03331 Block - 251 Eugene Island Area
OCS-G36209 Block - 262 Eugene Island Area
Operator - Arena Offshore, LP
Description - Platform A (Complex ID# 22164) and Well A016
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
FIXED/A		2003 FSL, 1034 FEL	G03331/EI/251
WELL/A016	G36209/EI/262	2039 FSL, 1010 FEL	G03331/EI/251



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**Joint Supplemental Development Operations
Coordination Document**

Eugene Island Blocks 251/261/262
Leases OCS-G 03331/36208/36209

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March 2020

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Amendments

Dated	Section	Comments	Amended Pages
6/16/2020	Title Page	Change of Address	1
	Section 1	Included well/AQR information from previous approved plans; added NMFS 2020 BiOp information	8, 9
	Section 1-C	Safety & Pollution – Added NMFS 2020 BiOp information	9, 10
	Section 2-E	New or Unusual Technology - Added NMFS 2020 BiOp information	12
	Section 5	Updated Mineral Resource Conservation	20
	Section 6-G	Added NMFS 2020 BiOp information	23
	Section 10-B	Added NMFS 2020 BiOp information	30
	Section 11	Added NMFS 2020 BiOp information	31, 32
	Section 12-B	Added NMFS 2020 BiOp information	33
	Section 15	Vessels and Vicinity Map -Added NMFS 2020 BiOp information	36
	Section 19	Fisheries – Added NMFS 2020 BiOp information	46
	Section 19	Marine Mammals – Added NMFS 2020 BiOp information	47
	Section 19	Sea Turtles – Added NMFS 2020 BiOp information	48, 49
	Section 19-I	Added NMFS 2020 BiOp information	55
	Attachment A	Approved well locations from previous DOCD plans	NA
	Attachment B	Location plats from previous DOCD plans	NA
	Attachment K	Updated AQR	NA

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Section 1 - Plan Contents (30 CFR Part 550.241)

Effective December 2, 2012, Arena Offshore, LP (Arena) was designated operator of Lease OCS-G 03331, Eugene Island Block 251; with Record Title Interest held by both Arena Energy, LP and Arena Offshore, LP effective March 1, 2014.

In the Central Gulf of Mexico Lease Sale No. 250 on March 21, 2018, Arena Energy, LP acquired Leases OCS-G 36208/36209, Eugene Island Blocks 261/262. Effective, July 1, 2018, Arena Energy, LP designated Arena as operator of both blocks.

Arena Offshore, LP is currently operator of Eugene Island Blocks 251/261/262, Leases OCS-G 03331/36208/36209; with Record Title Interest held by Arena Energy, LP at 98.0% and Arena Offshore, LP at 02.0%.

The surface location Lease OCS-G 03331, Eugene Island Block 251 has been developed under numerous Development Operations Coordination Documents (DOCD) prepared by the previous operator of records, Exxon Mobile Corporation and Newfield Exploration Company. The following recent DOCDs to date are:

- Revised DOCD (Control No. R-6628) covering the proposed sidetrack drilling, completion, and production of Lease OCS-G 03331, Well No. A012 (ST01BP00), and revised air emissions for Platform A
- Supplemental DOCD (Control No. S-7873) covering the proposed drilling, completion, and production of Lease OCS-G 03331, Well No. A014 (ST00BP00), the installation of two (2) lease term pipelines, and revised air emissions for Platform A
- Revised DOCD (Control No. R-6252 & R-6568) covering the proposed sidetrack drilling, completion, and production of Lease OCS-G 03331, Wells C002 and C003 and revised air emissions for Platform C
- Initial SDOCD (Control No. N-10025) revising activity schedule for Wells A012 and A014; sidetrack drill, complete and produce Wells A001, A003, A010 and A013; drill, complete and produce Well A015; install one lease term pipeline from EI 251A to EI 252I; update AQR for surface location Eugene Island Block 251

Arena submits this Supplemental Development Operations Coordination Document (Plan) to add well A016 for proposed operations to drill, complete and produce from an existing slot located at surface location in Lease OCS-G 03331, Eugene Island Block 251, Platform A (Complex ID No. 22164-1) to a bottom hole location in Lease OCS-G 36209.

Additionally, under this Plan Arena is updating the activity schedule from previously approved Plans N-10025, S-7873, and R-6628 for proposed drilling, completion and production of wells, and total air emissions for Eugene Island 251 Platform A inclusive of all previously approved plans.

Arena is not proposing any new pipelines expected to make landfall.

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Proposed operations will be conducted with a typical jack-up rig (WFD 250, 300, or 350) equipped with surface blowout preventers. WFD rigs do not utilize equipment (e.g. moon pool, flexible lines/ropes) with a potential for entanglement or entrapment of sea turtles or other marine life.

New drill activities under this Plan will include pile-driving 24-48” drive pipe utilizing a hydraulic hammer to a depth of approximately 200-530 feet with an estimated 200-300 feet of penetration below mudline and a total of ±6 hours of hammer run time. Arena does not anticipate the incidental taking of any species as a result of pile driving activities and will conduct operations in accordance with the National Marine Fisheries Service Biological Opinion issued on March 13, 2020. Mitigation measures for sea turtles will be in place with dedicated personnel continuously monitoring a visual radius around the rig during pile driving operations.

Arena expects to commence operations under this Plan in 2021.

A. Plan Information Form

Included as **Attachment A** is Form BOEM 137 “OCS Plan Information Form” which provides information concerning the activities proposed under this Plan.

B. Location

Included as **Attachment B** is a location plat detailing the existing surface and proposed bottom hole locations as required by NTL 2008-G04.

A bathymetry map detailing Eugene Island Blocks 251/ 262 was previously provided in approved Plan Control No. S-3125 and is included as **Attachment C**.

C. Safety and Pollution Prevention Features

Safety of personnel and protection of the environment during the proposed operations is of primary concern with Arena, and mandates regulatory compliance with the contractors and vendors associated with the proposed operations as follows:

The offices of the Bureau of Ocean Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE) mandate the operations in this Plan comply with well control, pollution prevention, construction, welding procedures, safety and environmental related issue, et al; as described in various Subparts of Titles 30 CFR Parts 250 and 550; and as further clarified by applicable Notices to Lessees (NTL’s). BSEE conducts periodic announced and unannounced 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 (PINIC) List serves as the baseline for these inspections.

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U. S. Coast Guard regulations contained in Title 33 CFR mandate the appropriate life rafts, life jackets, ring buoys, etc., be maintained on the facility at all times.

U. S. Environmental Protection Agency regulations contained in the NPDES General General Permit GMG290000 mandate that supervisory and certain designated personnel on-board the facility be familiar with the effluent limitations and guidelines for overboard discharges into the receiving waters.

Arena's activities in this Plan will comply with the existing BOEM/BSEE regulations and NTL's implemented by the above listed agencies and Arena will adhere to the requirements set forth in the following document, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations proposed in this Plan:

- Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program, Appendix A.

D. Storage Tanks and Production Vessels

The following table details the storage tanks and/or production vessels that will store oil (capacity greater than 25 bbls. or more) and be used to support the proposed activities (MODU, barges, platform, etc.).

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
Fuel Oil	MODU	500	4	2800	No. 2 Diesel
Production	PF A	NA	NA	NA	NA

E. Pollution Prevention Measures

Additional measures initiated by Arena beyond those measures required by Title 30 CFR Part 250 may include any and/or all of the following:

- A preliminary facility inspection by a contractor to ensure facility meets current regulatory requirements prior to commencement of operations
- Obtain historical performance history of the drill rig and/or production facility (if applicable).

F. Additional Measures

- Obtain historical performance history of the drilling and/or production contractor (if applicable).
- Safety and Environmental Briefings with offshore employee and contractor personnel to facility orientation and briefings on current operations.

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- Review of Oil Spill Response Plan to ensure personnel are aware of the initial notifications and reporting requirements.
- Review of EPA NPDES General Permit with applicable personnel to ensure awareness of permit effluent limitations and reporting requirements.
- Pre-Spud and/or Pre-Production Start-Up Meetings with field personnel and contractors to discuss regulatory, environmental issues.
- SEMS Contractor Evaluations
- Safety Orientation Meetings
- Job Safety Analyses
- Management of Change Process

A. Application and Permits

The following Federal/State applications will be submitted for the activities provided for in this Plan exclusive of EPA and COE general permits.

<i>Application/Permit</i>	<i>Issuing Agency</i>	<i>Status</i>
Application for Permit to Drill	BSEE-District	Pending
Rig Move Reports	BSEE, USCG and NGA	Pending
Surface Commingling Modification	BSEE - Regional	Pending
Surface Safety System Modification	BSEE - Regional	Pending

B. Drilling Fluids

Arena plans to use the following drilling fluids for the operations proposed under this Plan:

<i>Drilling Fluid Type</i>	<i>Estimated Volume of Drilling Fluid to be used Per Well</i>
Water-based (seawater, freshwater, barite)	6,046 bbls
Synthetic-based (internal, olefin, ester)	1,710 bbls

C. Production

Arena estimates the combined life of reserves for the proposed development activity to as follows:

<i>Hydrocarbon Type</i>	<i>Average Production Rate</i>	<i>Peak Production Rate</i>	<i>Life of Reservoir</i>

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D. Oils Characteristics

According to NTL 2008-G04, oil characteristics information is not required for the proposed activities addressed in this Plan.

E. New or Unusual Technology

Arena does not plan or anticipate using any new or unusual technology as defined in Title 30 CFR 250.200 during the proposed activities addressed in this Plan. However, the best available and safest technologies (BAST), as currently referenced in Title 30 CFR Part 250 will be incorporated as a standard operational procedure and Arena will adhere to the requirements set forth in the following document, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations proposed in this Plan:

- Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program, Appendix A.

F. Bonding Statement

The general bond requirements for the activities and facilities proposed in this Plan are satisfied by an Areawide Development Bond, furnished and maintained according to Title 30 CFR Part 556, Subpart I; NTL No. 2015-N04, "General Financial Assurance". Additional decommissioning liability assessments are currently under review per the recently issued NTL 2016-N01 "Requiring Additional Security". Arena is currently in the process of reviewing all leases, right of use and easements, and right-of-way pipelines for any associated disputes on ownership issues associated with BOEM's data; as well as decommissioning liability assessments by BSEE. Arena will continue to coordinate and respond to remaining deadlines detailed in this same NTL. Additionally, BOEM has recently changed an internal policy and will no longer require additional security prior to the approval of Exploration and Development Plans; and will assess same at the actual well permitting phase.

G. Oil Spill Financial Responsibility (OSFR)

According to Title 30 CFR Part 553, and NTL 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities", Arena Offshore, LP (Company No. 02628) will ensure demonstration of oil spill financial responsibility for the operations proposed in this Plan prior to commencing operations.

H. Deepwater Well Control Statement

According to NTL 2008-G04, a deepwater well control statement is not required for the activities proposed in this Plan.

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I. Suspensions of Production

A Suspension of Production will not be required as Lease OCS-G 03331 is currently held by production and Leases OCS-G 36208/36209 are primary term leases that will not expire until June 30, 2023.

J. Blowout Scenario

Arena will drill or sidetrack eight (8) wells, including the recently added EI 262 A-16 prospect, from the surface location in Lease OCS-G 03331, Eugene Island Block 251. Upon examining all future drill bottomhole locations in Leases OCS-G 03331, OCS-G 36208, and OCS-G 36209; Arena has determined that Lease OCS-G 03331 with a Worst-Case Discharge of 25,812 BOPD will remain our Worst-Case Discharge while conducting these operations.

Therefore, Arena has determined that Well Location C002 (Plan Control No. R-6252) submitted by Arena Offshore will continue to be the potential worse case discharge associated with Leases OCS-G 03331/36208/36209; which is 25,812 BOPD, with an anticipated gravity of 34°.

Arena will drill to the objective sands outlined in the geological narrative included in this Plan utilizing a typical structural, conductor, surface and production casing program. If mandated by wellbore conditions, an intermediate casing string will be set prior to drilling through the objective sand. In the event of a blowout during the course of drilling open hole in the objective sands, the wellbore would most likely bridge over in approximately 2 days. Arena would immediately activate its Regional Oil Spill Response Plan and Spill Management Team to initiate potential recovery of liquid hydrocarbons on the receiving water and review potential well intervention options. Dependent upon the interval the well was drilled to, and potential interval for bridging over and surface intervention; if required, it could take at least 14-66 days to mobilize equipment and/or a rig to the field and perform a surface intervention or drill the relief well.

Based on well intervention outlined in the potential worse-case discharge scenarios, the potential for drilling a relief well and a rig not being immediately available would be a total of 66 days and a potential total of 1,703,592 barrels during that time span.

Case I. **Well Bridging Over** – This field was developed with completions in several of the shallower respective horizons that Arena anticipates on encountering in the proposed sidetrack drilling operations associated with the proposed wells. The previously drilled wells in this field are gravel packed due to the unconsolidated nature of these producing intervals. It is anticipated that a loss of well control from the surface will result in the well bridging over in less than 48 hours as supported by the BOEM database where 49% of all blowout events during the period from 1992 through 2006 stopped flowing in less than 24 hrs. The drawdown at the

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sand face that would be experienced during a loss of well control event in this shallow, unconsolidated formation will result in the wellbore collapsing across multiple sand/shale interfaces. (Approximately 2 days)

Case II. **Conventional Surface Intervention** – It is assumed that a loss of well control from the surface will result in mobilizing 3rd party well control equipment to the rig. It is assumed that the BOP's are compromised, that the rig has not caught fire and is capable of supporting well control efforts with the assistance of a support vessel. As an example, the intervention would consist of top killing the well with kill weight mud or possibly replacing BOP's with another set to contain flow from the breached equipment. (Approximately 14 days)

Case III. **Relief Well Intervention** – It is assumed that a jack-up rig is immediately available to mobilize to location to commence drilling a relief well. The mobilization and estimated time to drill the relief well is based on offset drilling performance. (Approximately 56 days)

Case IV. **Relief Well Intervention** – It is assumed that a jack-up rig is not immediately available to mobilize to location to commence drilling a relief well. The estimated mobilization time of a rig to location incorporates the suspension of activities by an Operator before the rig can be released for relief well operations. The time to drill the relief well is based upon the offset drilling performance curves.

Assess well condition:	2 days
Suspend current operations:	10 days
Mobilize Rig:	3 days
Drill relief well:	<u>51 days</u>
Total:	66 days

Relief Rig Availability:

The proposed wells will be sidetrack drilled and completed from the existing Eugene Island Block 251 A Platform in 156' of water utilizing the typical jack-up rig. There are currently 7 independent leg jack up rigs marketed in the GOM that are capable of drilling a relief well in this water depth.

There are no offset platforms in the immediate area that would be capable of utilizing a platform rig to reach the bottom hole location of the proposed well locations.

Blowout Prevention Measures

The purpose of this document is to describe measures that Arena will take, above and beyond what is detailed in BSEE Title 30 CFR Part 250, to enhance its ability to prevent

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a blowout, to reduce the likelihood of a blowout, and conduct effective and early intervention in the event of a blowout on the proposed well locations.

The following measures will be taken in attempt to ensure the proposed well locations are kept under control at all times:

- An Arena onsite representative will witness and review all BOP tests, casing tests and formation integrity tests.
- An Arena Superintendent in the office will review all FIT tests prior to moving forward with drilling operations
- Prior to commencing cementing operations on any casing string, a minimum of 1½ bottoms up will be circulated with drilling mud, so long as full returns are maintained, in order enhance the ability of achieving a successful cement job.
- A liner top packer, in addition to cement, will be utilized in order to ensure the pressure integrity of the liner lap of any liner run in the well.
- All production casing strings will be centralized across hydrocarbon bearing zones in order to ensure the proper isolation of individual pay sands by cementation and to prevent the transmission of hydrocarbons up the annulus behind the production casing.
- The proposed well will be drilled on a mud weight schedule utilizing offset data from the original exploratory well drilled. Proposed drilling mud weights will allow for at a minimum, the known hydrostatic pressures required to drill the known hydrocarbon zones encountered in the original development of the field.
- Lost circulation material in the form of properly distributed particle sized mud additives (PSDs) will be added to the mud system in the form of sweeps while drilling both the intermediate and production hole sections. PSD additives will be utilized to prevent uncontrolled mud losses in the case that lower than anticipated pore pressures or fracture gradients are encountered.
- Wiper trips will be performed as hole conditions dictate in order to quantify the stability of the wellbore and determine if sufficient mud weights are being utilized to prevent influx of formation fluids, prevent swabbing of wellbore fluids while pulling pipe and prevent losses of wellbore fluids to the formation.
- Connections will be simulated while drilling into pressure transition areas in order to properly assess the current wellbore conditions.
- Mud loggers will be utilized during the drilling of the well in order to specifically evaluate wellbore conditions including, but not limited to weights of returning drilling fluids as compared to that of the fluid entering the hole, gas content of mud returns, formation characteristics and abnormalities of cuttings and estimated paleo aging of cuttings.
- Logging while drilling tools (LWD) will be utilized to evaluate and estimate lithology, formation pressures and fluid content from surface casing point to wellbore total depth. This will enable the real time identification of any changes in anticipated formation pressures and assist in the picking of intermediate casing points and wellbore total depth, potentially eliminating the possibility of drilling into unexpected formations that could cause dangerous well control situations. Log data will be regularly provided to the office for evaluation.

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- Pressure While Drilling (PWD) data will be utilized to ensure the stability of, and to maintain constant monitoring of hydrostatic pressures applied to, the wellbore.

Blowout Intervention

In the event of an uncontrolled flow of hydrocarbons from the proposed wellbore(s), the Oil Spill Response Plan (OSRP) as described in the Plan will be activated. In addition to the activation of this Plan, two scenarios of well intervention have been described in the attached documentation and current availability of equipment to enact both well intervention scenarios identified:

- Assuming in an uncontrolled flow situation, the rig is intact and not sufficiently damaged, along with the wellbore and surface equipment, wellbore intervention would be performed from the rig itself. Master Service Agreements (MSAs) have been established with Cudd Pressure Control and Wild Well Control in order to expedite response in the case of an uncontrolled flow situation.
- As an example, flow could be controlled from either a “top kill” method or from the removal of the surface BOP stack and subsequent replacement of the stack and the wellbore shut in.
- In the event that the platform rig and/or the wellbore is irreparably damaged during a blowout scenario, wellbore intervention would be performed by contracting a MODU, mobilizing it to location and the subsequent spudding and drilling of a relief well.
- Arena currently has in place established contracts with all contractors that operate jack-up rigs in the Gulf of Mexico. Such contracts would be utilized to expedite the contracting of a rig in order to drill a relief well.

In the case of an uncontrolled flow of hydrocarbons, Arena would simultaneously pursue multiple wellbore intervention methods in an attempt to mitigate and terminate the spill, until the wellbore is brought under control.

K. Chemical Products

According to NTL 2008-G04 information regarding products is not required to accompany EP’s and DOCD’s in the Gulf of Mexico.

Section 3 - Geological & Geophysical Information (30 CFR Part 550.244)

A. Geological Description

Included as **Attachment D** are the details of the geological targets and associated trapping features for the proposed well location.

B. Structure Contour Maps

Included as **Attachment E** are current structure maps depicting the proposed bottom hole location and applicable geological cross sections for the proposed well location.

C. Interpreted 2-D and/or Seismic Lines

Included as **Attachment F** are deep seismic lines depicting the proposed well location.

D. Geological Structure Cross-Sections

Interpreted geological cross sections are included as **Attachment G** depicting the proposed well location.

E. Shallow Hazards Report

The activities proposed in this Plan will be conducted from the existing Eugene Island Block 251 "A" Platform (Plan Control No. Unknown), and therefore does not require an additional shallow hazards survey and report.

F. Shallow Hazards Assessment

The activities proposed in this Plan will be conducted from the existing Eugene Island Blocks 251 "A" Platform (Plan Control No. Unknown), and therefore does not require an additional shallow hazards assessment.

G. High Resolution Seismic Lines

The activities proposed in this Plan will be conducted from the existing Eugene Island Block 251 "A" Platform (Plan Control No. Unknown), and therefore does not require additional high resolution seismic lines.

H. Stratigraphic Column

Included as **Attachment H** are generalized biostratigraphic/lithostratigraphic column depicting the proposed well location.

Section 3 - Geological & Geophysical Information (30 CFR Part 550.244)

I. Time vs. Depth Tables

Arena feels there is sufficient well control data for the target sand objective provided for in this Plan; as such seismic time vs. depth tables are not required.

J. Geochemical Information

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

K. Future G&G Activities

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

Section 4 - Hydrogen Sulfide Information (30 CFR Part 550.245)

A. Concentration

Arena does not anticipate encountering H₂S above the 20 ppm atmospheric level while conducting the proposed development operations provided under this Plan.

B. Classification

In accordance with Title 30 CFR 250.490(c), Arena requests the proposed activities addressed in this Plan be classified as an area where the absence of hydrogen sulfide has been confirmed based on information in ***Attachment D***.

C. H₂S Contingency Plan

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

D. Modeling Report

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

Section 5 - Mineral Resource Conservation Information (30 CFR Part 550.246)

A. Technology and Reservoir Engineering Practices and Procedures

Proprietary Information

B. Technology and Recovery Practices and Procedures

Proprietary Information

C. Reservoir Development

Proprietary Information

Section 6 - Biological, Physical & Socioeconomic Information (30 CFR Part 550.247)

A. High Density Deepwater Benthic Communities Information

NTL 2009-G40 broadened the scope of a chemosynthetic communities report to cover all high density deepwater benthic communities, changed the definition of deepwater from 400 meters (1312 feet) to 300 meters (984 feet), increased the separation distance from muds and cuttings discharge locations from 1500 feet to 200 feet, and provided for an additional 1000 feet buffer area beyond the maximum anchor areas.

The activities proposed in this Plan do not disturb seafloor areas in water depths greater than 300 meters (984 feet); therefore, chemosynthetic information is not required.

B. Topographic Features Map

BOEM and the National Marine Fisheries Service (NMFS) have entered into a programmatic consultation agreement for Essential Fish Habitat that requires that no bottom disturbing activities (including rig placement, and rig or construction base use of anchors, chains, cables, and wire ropes) within 305 meters (1000 feet) of a “No-Activity Zone” of a topographic feature.

If such proposed bottom disturbing activities are within 1000 feet of a no activity zone, the BOEM is required to consult with the NMFS.

The activities proposed in this Plan are not affected by a topographic feature.

C. Topographic Features Statement (Shunting)

The activities proposed in this Plan are not affected by a topographic feature; therefore, Arena is not required to shunt drill cuttings and drill fluids.

D. Live Bottoms (Pinnacle Trend) Map

Certain leases are located in areas characterized by the existence of live bottoms. Live bottom (Pinnacle trend features) are small, isolated, low to moderate relief carbonate reef features or outcrops of unknown origin or hard substrates exposed by erosion that provide surface area for the growth of sessile invertebrates and attract large number of fish. Known features occur in an area of topographic relief in the northeastern portion of the western Gulf of Mexico.

Section 6 - Biological, Physical & Socioeconomic Information (30 CFR Part 550.247)

These leases contain a Live Bottom Stipulation to ensure that impacts from nearby oil and gas activities on these live bottom areas are mitigated to the greatest extent possible.

For each affected lease, the Live Bottom Stipulation requires that you prepare a live bottom survey report containing a bathymetry map prepared by using remote sensing techniques. This report must be submitted to the BOEM Gulf of Mexico OCS Region (GOMR) before you may conduct any drilling activities or install any structure, including lease term pipelines in accordance with NTL 2009-G39.

The existing surface location in Eugene Island Block 251 is not located within 200 feet of any pinnacle trend feature with vertical relief equal to or greater than 8 feet; as such live bottom information is not required.

E. Live Bottoms (Low Relief) Map

Certain leases are located in areas characterized by the existence of live bottoms. Live bottom (Low relief features) are sea grass communities; those areas that contain biological assemblages consisting of sessile invertebrates living upon and attached to naturally occurring hard or rocky formations with rough, broken, or smooth topography; and areas where a hard substrate and vertical relief may favor the accumulation of turtles, fishes or other fauna. These features occur in the Eastern Planning Area of the Gulf of Mexico.

The existing surface location in Eugene Island Block 251 is not located within 200 feet of any pinnacle trend feature with vertical relief equal to or greater than 8 feet; as such live bottom (low relief) maps are not required.

F. Potentially Sensitive Biological Features Map

Oil and gas operations and transportation activities in the vicinity of potentially sensitive biological features may cause deleterious impacts to the sessile and pelagic communities associated with those habitats. Adverse impacts to the communities could be caused by mechanical damage from drilling rigs, platforms, pipelines and anchor employment.

The existing surface location in Eugene Island Block 251 is not located within 61 meters (200 feet) of potentially sensitive biological features; as such the biologically sensitive maps are not required.

Section 6 - Biological, Physical & Socioeconomic Information (30 CFR Part 550.247)

G. Threatened or Endangered Species, Critical Habitat, and Marine Mammal Information

The BOEM revised Title 30 CFR Part 550, Subpart B to require lessees/operators to address the federally listed species with designated critical habitat as well as marine mammals which may be impacted by the proposed activities addressed under this Plan.

In accordance with Section 7 of the Endangered Species Act (ESA) and the Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program”, Appendices A, B, C and J, all federal agencies must ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species, or destroy or adversely modify its designated critical habitat.

Included as **Attachment I** is a listing of the species under the jurisdiction of NOAA fisheries that are known to occur in the Gulf of Mexico that may be affected by the proposed action.

Arena does not anticipate that the proposed activities will occur in the presence of federally listed threatened or endangered species and critical habitat designated under the Endangered Species Act (ESA) and marine mammals protected under the Marine Mammal Protection Act (MMPA). However, Arena will adhere to the requirements set forth in the following document, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations proposed in this Plan:

- Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program, Appendix A.
- During pile driving activities mitigation measures for sea turtles will be in place with dedicated personnel continuously monitoring a visual radius around the rig.

H. Archaeological Report

In accordance with NTL’s 2011-JOINT-G01 and 2005-G07, Eugene Island Block 251 is located within an area requiring a 300-meter spacing survey.

Section 6 - Biological, Physical & Socioeconomic Information (30 CFR Part 550.247)

This requirement provides protection of prehistoric and historic archaeological resources by requiring remote sensing surveys in areas designated to have a high probability for archaeological resources.

Copies of these reports have been previously submitted to the BOEM under separate cover for Plan Control No. Unknown before Eugene Island Block 251, Platform A was installed in January 1978.

I. Air and Water Quality Information

According to NTL 2008-G04, air and water quality information is not required as the proposed activities provided for in this Plan do not impact the State of Florida.

J. Socioeconomic Information

According to NTL 2008-G04, socioeconomic information is not required as the proposed activities provided for in this Plan do not impact the State of Florida.

Section 7 - Wastes and Discharges Information (30 CFR Part 550.248)

A. Projected Generated Wastes

All projected solid and liquid wastes likely to be generated by our proposed activities are included in **Attachment J**. This attachment includes both operational wastes permitted by the appropriate NPDES General Permit GMG290269 and any other identified wastes.

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

B. Projected Ocean Discharges

All projected solid and liquid wastes likely to be generated by our proposed activities are included in **Attachment J**. This attachment includes both operational wastes permitted by the appropriate NPDES General Permit GMG290269 and any other identified wastes.

C. Modeling Report

According to NTL 2008-G04, a modeling report is not required for the operations proposed in this Plan.

D. NPDES Permits

According to NTL 2008-G04 information regarding NPDES permits is not required to accompany EP's or DOCD's in the Gulf of Mexico.

E. Cooling Water Intakes

According to NTL 2008-G04 information regarding cooling water intakes is not required to accompany EP's or DOCD's in the Gulf of Mexico.

Section 8 - Air Emissions Information (30 CFR Parts 550.249)

A. Emissions Worksheets and Screening Questions

The Projected Air Quality Emissions Report (Form BOEM-139) addresses the proposed drilling, construction and production operations proposed in this Plan.

As evidenced by **Attachment K**, the worksheets were completed based on the proposed activities being located greater than 25 miles from shore and greater than 200 kilometers of the Breton Wilderness Area.

B. Emissions Reduction Measures

The projected air emissions are within the exemption level; therefore, no emission reduction measures are being proposed.

C. Verification of Non-default Emission Factors

Arena has elected to use the default emission factors as provided in **Attachment K**.

D. Non-Exempt Activities

The proposed activities are within the exemption amount as provided in **Attachment K**.

E. Modeling Report

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

Section 9 - Oil Spills Information (30 CFR Part 550.250)

A. Oil Spill Response Planning

All the proposed activities and facilities in this Plan will be covered by the Regional Oil Spill Response Plan filed by Arena Offshore, LP (BOEM Company No. 02628) in accordance with Title 30 CFR Part 254 approved on February 2, 2018. A nonsignificant revision to the production scenario was confirmed on October 02, 2019.

The following locations will be used in the event and oil spill occurs as a result of the proposed activities.

Primary Response Equipment Location	Pre-Planned Staging Location(s)
Leeville, LA; Harvey, LA; Houma, LA	Abbeville, LA

Arena utilizes Clean Gulf Associates (CGA) as its primary provider for equipment, which is an industry cooperative owning an inventory of oil spill clean-up equipment. CGA is supported by the Marine Spill Response Corporation's (MSRC), which is responsible for storing, inspecting, maintaining and dispatching CGA's equipment. The MSRC STARS network provides for the closest available personnel, as well as an MSRC supervisor to operate the equipment.

Category	Regional OSRP WCD	DOCD WCD	Regional OSRP WCD	DOCD WCD
Type of Activity	Drilling > 10 miles Seaward of Coastline	Drilling >10 miles Seaward of Coastline	Production >10 miles Seaward of Coastline	Production >10 miles Seaward of Coastline
Lease Number	OCS 00463	OCS-G 03331	OCS-G 02118	OCS-G 03331
Facility Location	South Timbalier 151	Eugene Island 251	Eugene Island 338	Eugene Island 251
Facility Designation	Well Location B	MODU/ R-6252 Well No. C002	Platform K	Platform A
Distance to Nearest Shoreline (miles)	30	53.5	75	53.5
Storage Tanks (total)	0	0	3000	37
Lease Pipelines	NA	NA	24	116
Uncontrolled Blowout (bbls)	26,156	25,812	7060	NA
Total Volume (bbls)	26,156	25,812	10,084	153
Type of Oil (crude, condensate, diesel)	Crude	Condensate	Crude	NA
API Gravity	27.5° F	39° F	29° F	NA

Section 9 - Oil Spills Information (30 CFR Part 550.250)

Since Arena has the capability to respond to the appropriate worst-case spill scenario included in its Regional OSRP, most recently approved biennial update approved April 11, 2019, the worst-case scenarios determined for this Plan does not replace the worst-case scenarios in our Regional OSRP, I hereby certify that Arena has the capability to respond, to the maximum extent practicable, to a worst-case discharge, or a substantial threat of such a discharge, resulting from the activities proposed in our DOCD.

B. Oil Spill Response Discussion

In the event of an uncontrolled spill release resulting from the activities proposed in this Plan, Arena's Person-In-Charge on the platform/rig or the Shorebase Dispatcher would most likely be the initial individuals to contact the Qualified Individual (QI) or our Spill Management Team (SMT) detailed in the Regional OSRP. The QI would immediately activate the SMT to ascertain the severity of the spill incident. Arena's SMT Incident Command Center is located at O'Brien's Response Management, Inc.'s office in Houston, Texas.

Dependent upon the severity of the spill incident, a trajectory analysis would be conducted utilizing the BOEM Oil Spill Risk Analysis Model (OSRAM) as referenced in our approved Regional OSRP. This trajectory would provide the required information on percentage and timing of potential impact to the shoreline impact areas. The SMT would then identify the areas of sensitivities at potential landfall segment(s), so additional planning may be conducted for shoreline protection strategies. If surveillance indicates a potential threat to shoreline; the appropriate equipment and personnel would be deployed, as outlined in our Regional OSRP.

An overflight may be conducted to determine the extent and dissipation rate of the spill, with potential sampling of the spill release. Mechanical recovery equipment may also be dispatched to the leading edge of the spill, as outlined in our Regional OSRP. If additional offshore response is required, the SMT would initiate the Dispersant Use Plan of the Regional OSRP and utilize the services of Airborne Support Inc.'s aircraft and personnel.

Arena does not propose or anticipate New or Unusual Technology for oil spill detection, control or clean-up for operations proposed in this Plan.

Arena provided an oil spill response discussion, equipment deployment, and containment for the Worst-Case Discharge in Plan Control No. R-6252, **Attachment L**. The activities proposed in this Plan do not supersede the Worst-Case Discharge previously provided.

Section 9 - Oil Spills Information (30 CFR Part 550.250)

C. Modeling Report

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

D. NTL 2015-N01 Worst Case Discharge Data

The required data in NTL 2015-N01 was previously submitted under Plan Control No. R-6252 for Lease OCS-G 03331, Eugene Island Block 251. Arena has determined the Worst-Case Discharge Volume submitted in Plan R-6252 for 25,812 bbls, and accepted by BOEM for Eugene Island Block 251, is still valid and will continue to be the Worst-Case Discharge for the proposed activities in this Plan.

Section 10 - Environmental Monitoring Information (30 CFR Part 550.252)

A. Monitoring Systems

Arena subscribes to StormGeo Inc. Weather Service which provides access to real-time weather conditions and provides periodic updates on impending inclement weather conditions such as tropical depressions, storms and/or hurricanes entering the Gulf of Mexico.

Arena also relies on the National Weather Service to support the aforementioned subscribed service. During impending inclement weather conditions, Arena closely coordinates the activity with our contractors and field personnel to ensure the safety of people for evacuation; measures to prepare the facility for evacuation to ensure protection of the environment and the facility/equipment.

B. Incidental Takes

The BOEM revised regulations in Title 30 CFR Part 550, Subpart B and the Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program”, Appendices A, B, C and J, require lessees/operators to provide for monitoring systems if the activities provided for in this Plan have the potential to result in an incidental take of any federally listed species and/or marine mammals.

Arena does not anticipate the incidental taking of any species as a result of the proposed activities. However, Arena will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations proposed in this Plan:

- Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program, Appendix A
- BSEE’s Notice to Lessees NTL 2015-G03 “Marine Trash and Debris Awareness and Elimination”, and the recent National Marine Fisheries Service Biological Opinion issued on March 13, 2020
- BOEM Notice to Lessees NTL 2016-G01 “Vessel Strike Avoidance and Injured/Dead Protected Species Reporting”
- BOEM Notice to Lessees NTL 2016-G02 “Implementation of Seismic Mitigation Measures and Protected Species Observer Program”

Section 11 - Lease Stipulations/Special Conditions Information (30 CFR Part 550.253)

Under the Outer Continental Shelf Lands Act, both BOEM and BSEE are charged with the responsibility of managing and regulating the exploration and development on the OCS.

As part of the regulatory process, an Environmental Impact Statement (EIS) is prepared for each lease sale, at which time mitigation measures are addressed in the form of lease stipulations, which then become part of the oil and gas lease terms and are therefore enforceable as part of that lease.

As part of this process, the designated operator proposing to conduct related exploratory and development activities, must review the applicable lease stipulations, as well as other special conditions, which may be imposed by the BOEM, other governing agencies, and the Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program”, Appendices A, B, C and J.

Eugene Island Blocks 251/261/262 (Leases OCS-G 03331/36208/36209) are subject to the following lease stipulations and special conditions:

- **Marine Protected Species**

The BOEM regulations in Title 30 CFR Part 550, Subpart B and the Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program”, Appendices A, B, C and J, require lessees/operators to provide for monitoring systems if the activities provided for in this Plan have the potential to result in an incidental take of any federally listed species and/or marine mammals.

Arena does not anticipate the incidental taking of any species as a result of the proposed activities. However, Arena will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations proposed in this Plan:

- Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program, Appendix A
- BSEE’s Notice to Lessees NTL 2015-G03 “Marine Trash and Debris Awareness and Elimination”, and the recent National Marine Fisheries Service Biological Opinion issued on March 13, 2020
- BOEM Notice to Lessees NTL 2016-G01 “Vessel Strike Avoidance and Injured/Dead Protected Species Reporting”

Section 11 - Lease Stipulations/Special Conditions Information (30 CFR Part 550.253)

- BOEM Notice to Lessees NTL 2016-G02 “Implementation of Seismic Mitigation Measures and Protected Species Observer Program”

- **Military Warning Area**

The Military Areas Stipulation reduces potential impacts, particularly in regard to safety, but does not reduce or eliminate the actual physical presence of oil and gas operations in areas where military operations are conducted. As detailed in NTL 2014-G04, Eugene Island Blocks 251/261/262 are located within Military Warning Area W-59A. Therefore, in accordance with the requirements of the referenced stipulations, Arena will contact the Naval Air Station in order to coordinate and control the electromagnetic emissions during the proposed operations.

- **Archeological Resources**

In accordance with NTL’s 2011-JOINT-G01 and 2005-G07, Eugene Island Block 251 is located within an area requiring a 300-meter spacing survey.

This requirement provides protection of prehistoric and historic archaeological resources by requiring remote sensing surveys in areas designated to have a high probability for archaeological resources.

Copies of these reports have been previously submitted to the BOEM under separate cover for Plan Control No. Unknown before Eugene Island Block 251, Platform A was installed in January 1978.

B. Special Conditions

The proposed surface disturbance activity in Eugene Island Block 251 will not be affected by any special conditions and/or multiple uses, such as designated shipping/anchorage areas, lightering zones, rigs to reef zone, and ordinance disposal zones.

Section 12 - Environmental Mitigation Measures Information (30 CFR Part 550.254)

A. Measures Taken to Avoid, Minimize, and Mitigate Impacts

The activities proposed in this Plan do not have an impact on the State of Florida; as such this section is not applicable.

B. Incidental Takes

BOEM revised regulations in Title 30 CFR Part 550, Subpart B and the Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program”, Appendices A, B, C and J, require lessees/operators to provide for monitoring systems if the activities provided for in this Plan have the potential to result in an incidental take of any federally listed species and/or marine mammals.

Arena does not anticipate the incidental taking of any species as a result of the proposed activities. However, Arena will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations proposed in this Plan:

- Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program, Appendix A
- BSEE’s Notice to Lessees NTL 2015-G03 “Marine Trash and Debris Awareness and Elimination”, and the recent National Marine Fisheries Service Biological Opinion issued on March 13, 2020
- BOEM Notice to Lessees NTL 2016-G01 “Vessel Strike Avoidance and Injured/Dead Protected Species Reporting”
- BOEM Notice to Lessees NTL 2016-G02 “Implementation of Seismic Mitigation Measures and Protected Species Observer Program”

Section 13 - Decommissioning Information (30 CFR Part 550.255)

The information at Title 30 CFR Part 250.255 regarding decommissioning is not required to accompany EP's and DOCD's submitted for the Gulf of Mexico.

Section 14 - Related Facilities & Operation Information (30 CFR Part 550.256)

A. Related OCS Facilities and Operations

The existing Eugene Island Block 251 “A” Platform is classified as a manned structure and was installed in January 1978 in a water depth of 160 feet. The existing 8-pile/18-slot structure has test/processing equipment consisting of multiple production/test separators, fuel gas skid, water skimmer, and vent scrubber.

Following separation and measurement, the gas/liquid hydrocarbons from the respective wells will be able to depart from Platform A via:

- 10 Inch Gas/Condensate Right-of-Way PSN 10405 to a SSTI with Sea Robin’s 24” PSN 3330 in Eugene Island Block 262.
- 6 Inch bi-directional oil/condensate PSN 19862 through 8 Inch PSN 19901 to a SSTI with Arena’s 14 Inch PSN 19785 in Eugene Island Block 253.
- 8 Inch bi-directional gas PSN 19863 through a 6-Inch bi-directional PSN 17104 to a 6 Inch bi-directional PSN 19085 to 6 Inch PSN 15619 to a SSTI with TC Offshore’s 12 Inch PSN 2301 in Eugene Island Block 259.
- Or the proposed 8 Inch oil pipeline PSN pending through 8 Inch PSN 19901 to a SSTI with Arena’s 14 Inch PSN 19785 in Eugene Island Block 253.

Produced hydrocarbons on the Eugene Island Blocks 251/261/262 are separated, and measured for sales and royalty purposes, with ultimate flow routing through Operations System No. 20.0/BBO, Operations System No. 26.0 or Operations System No. 24.0/XW.0

B. Transportation System

Arena does not anticipate installation of any new and/or modified onshore facilities to accommodate the additional production from the Eugene Island Blocks 251/261/262 leases.

C. Produced Liquid Hydrocarbon Transportation Vessels

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

Section 15 - Support Vessels and Aircraft Information (30 CFR Part 550.257)

The rigs, vessels, and supply boats utilized for proposed activities under this Plan will not transit the Bryde's whale moratoria area as noted within the National Marine Fisheries Service Biological Opinion issued March 13, 2020.

A. General

Personnel involved in the proposed operations will typically use their own vehicles as transportation to and from the selected onshore base; whereas the selected vendors will transport the equipment by a combination of trucks, boats and/or helicopters to the onshore base. The personnel and equipment will then be transported to the platform/rig taking the most direct route feasible as mandated by weather and traffic conditions. The table below provides for the maximum capacities, numbers and trip frequency used during the construction, drilling and production phases:

Type	Maximum Fuel Tank Storage Capacity	Maximum No. in Area at Any Time	Trip Frequency or Duration
Tug Boats	3,000 bbls	2	Mobilization on/off for drilling rig
Supply Boats	500 bbls	1	Two trips per week
Crew Boat	500 bbls	1	Three trips per week
Aircraft	330 gals.	1	As needed

B. Diesel Oil Supply Vessels

Size of Fuel Supply Vessel	Capacity of Fuel Supply Vessel	Frequency of Fuel Transfers	Route Fuel Supply Vessel Will Take
180' feet	1,500 bbls	Weekly	From the shorebase in Port Fourchon, LA to EI 251

C. Drilling Fluids Transportation

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

D. Solid and Liquid Wastes Transportation

Included as **Attachment J** is a listing of the solid and liquid wastes associated with the proposed activities in this Plan, detailing the types of waste and approximate composition, total amount, name and location, rate and transport method.

Section 15 - Support Vessels and Aircraft Information (30 CFR Part 550.257)

E. Vicinity Map

A Vicinity Plat detailing the surface location in Eugene Island Block 251 relative to the shoreline and onshore base is included as ***Attachment M***.

Section 16 - Onshore Support Facilities Information (30 CFR Part 550.258)

A. General

The existing surface disturbance in Eugene Island Block 251 is located approximately 53.5 miles from the nearest Louisiana shoreline and 180 miles to the Grand Isle Shipyard (GIS) support base located in Port Fourchon, LA. Arena will utilize existing Bristow Heliport located in New Iberia, Louisiana (approximately 104 miles) as needed.

Arena will utilize the existing GIS Dock located in Port Fourchon, LA to accomplish the following routine operations:

- Loading/Offloading point for equipment supporting the offshore operations,
- Dispatching personnel and equipment, and does not anticipate the need for any expansion of the selected facilities as a result of the activities proposed in this Plan,
- Temporary storage for materials and equipment
- 24-Hour Dispatcher

B. Support Base Construction or Expansion

The proposed operations do not require any immediate action to acquire additional land or to expand existing base facilities.

C. Support Base Construction or Expansion Timetable

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

D. Waste Disposal

Included as **Attachment J** is a listing of waste disposal facilities to be utilized as part of the associated activities in this Plan; detailing the types of waste, amount, rate and disposal method to be sent to shore.

E. Air Emissions

According to NTL 2008-G04 information regarding air emissions generated by onshore support facilities is not required to accompany EP's and DOCD's for the Gulf of Mexico.

Section 16 - Onshore Support Facilities Information (30 CFR Part 550.258)

F. Unusual Solid and Liquid Wastes

According to NTL 2008-G04 information regarding unusual solid and liquid wastes generated by onshore support facilities is not required to accompany EP's and DOCD's for the Gulf of Mexico.

Section 17 - Sulphur Operations Information (30 CFR Part 550.259)

A. Bleedwater

Arena does not propose any Sulphur related operations during the activities proposed in this Plan.

B. Subsidence

Arena does not propose any Sulphur related operations during the activities proposed in this Plan.

Section 18 - Coastal Zone Management Information (30 CFR Part 550.260)

Under direction of the Coastal Zone Management Act (CZMA), the States of Alabama, Florida, Louisiana, Mississippi and Texas developed Coastal Zone Management Programs (CZMP) to allow for the supervision of significant land and water use activities that take place within or that could significantly impact their respective coastal zones.

A. Consistency Certification

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

B. Other Information

According to NTL 2008-G04, this Section of the Plan is not applicable to the proposed operations.

Section 19 – Environmental Impact Analysis (30 CFR Part 550.261)

A. Impact Producing Factors (IPF's) From Proposed Activities

The following matrix is utilized to identify the affected environments that could be impacted by these IPF's. An "x" has been marked for each IPF category that Arena has determined may impact a particular environment as a result of the proposed activities. For those cells which are footnoted, a statement is provided as to the applicability of the proposed activities, and where there may be an effect, an analysis of the effect is provided.

Environmental Resources	Impact Producing Factors (IPFs)					
	Emissions (air, noise, light, etc.)	Effluents (muds, cuttings, other discharges to the water column or seafloor)	Physical disturbances to the seafloor (rig or anchor emplacement, etc.)	Wastes sent to shore for treatment or disposal	Accidents (e.g. oil spills, chemical spills, H ₂ S releases)	Other IPFs you identify
<u>Site Specific at Offshore Location</u>						
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						
Fisheries						
Marine mammals	(8)				(8)	
Sea turtles	(8)				(8)	
Air quality	(9)					
Shipwreck sites (known or potential)			(7)			
Prehistoric archaeological sites			(7)			
<u>Vicinity of Offshore Location</u>						
Essential fish habitat					(6)	
Marine and pelagic birds						
Public health and safety					(5)	
<u>Coastal & Onshore</u>						
Beaches					(6)	
Wetlands					(6)	
Shorebirds and coastal nesting birds					(6)	
Coastal wildlife refuges						
Wilderness areas						

Section 19 – Environmental Impact Analysis (30 CFR Part 550.261)

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 Gardens 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 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 300 meters or greater.
5. Exploration or production activities where H₂S 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 determine 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.

Section 19 – Environmental Impact Analysis (30 CFR Part 550.261)

B. Impact Analysis

Site Specific at Offshore Location

- **Designation Topographic Features**

There are no anticipated emissions, effluents, physical disturbances to the seafloor, wastes transported to shore, and/or accidents from the proposed activities that could cause impacts to topographic features. The surface disturbance within Eugene Island Block 251 is located approximately 27 miles away from the Fishnet Bank. The crests of designated topographic features in the northern Gulf are found below 10 m. In the event of an accidental oil spill from the proposed activities, the gravity of such oil (high gravity condensate and/or diesel fuel) would rise to the surface, quickly dissipate, and/or be swept clear by the currents moving around the bank; thereby avoiding the sessile biota.

- **Pinnacle Trend Area Live Bottoms**

There are no anticipated emissions, effluents, physical disturbances to the seafloor, wastes sent to shore, and/or accidents from the proposed activities that could cause impacts to a pinnacle trend area. The proposed surface disturbance within Eugene Island Block 251 is located a significant distance (> 100 miles) from the closest pinnacle trend live bottom stipulated block. The crests of the pinnacle trend area are much deeper than 20 m. In the event of an accidental oil spill from the proposed activities, the gravity of such oil (high gravity condensate and/or diesel fuel) would rise to the surface, quickly dissipate, and/or be swept clear by currents moving around the bank; and thus, not impacting the pinnacles.

- **Eastern Gulf Live Bottoms**

There are no anticipated emissions, effluents, emissions physical disturbances to the seafloor, wastes sent to shore, and/or accidents from the proposed activities that could cause impacts to Eastern Gulf live bottoms. The proposed surface disturbance within Eugene Island Block 251 is located a significant distance (>100 miles) from the closest pinnacle Eastern Gulf live bottom stipulated block.

Section 19 – Environmental Impact Analysis (30 CFR Part 550.261)

In the event of an accidental oil spill from the proposed activities, the gravity of such oil (high gravity condensate and/or diesel fuel) would rise to the surface, quickly dissipate, and/or be swept clear by currents moving around the bank; and would not be expected to cause adverse impacts to Eastern Gulf live bottoms because of the depth of the features and dilutions of spills.

- **Chemosynthetic Communities**

Water depths at the surface location in Eugene Island Block 251 is approximately 160 feet. Therefore, the proposed activities are not located within the vicinity of any known chemosynthetic communities, which typically occur in water depths greater than 300 meters. Based on the water depth, there are no anticipated emissions, effluents, emissions physical disturbances to seafloor, wastes sent to shore, and/or accidents from the proposed activities that could impact these types of communities.

- **Water Quality**

Routine operational discharges authorized by EPA's Region VI NPDES General Permit GMG290000 are regulated based on volume discharge rate limitations, and certain testing requirements for oil and grease and toxicity limitations. As such, it is not anticipated these discharges will cause significant adverse impacts to water quality.

Accidental oil spill releases from the proposed activities, and cumulative similar discharge activity within the vicinity could potentially cause impacts to water quality. It is unlikely that an accidental oil spill release would occur from the proposed activities. In the event of such a release, the water quality would be temporarily affected by the dissolved components and small droplets. Currents and microbial degradation would remove the oil from the water column or dilute the constituents to background levels.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

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- **Fisheries**

Accidental oil spill releases from the proposed activities, and cumulative similar discharge activity within the vicinity may potentially cause some detrimental effects on fisheries. It is unlikely a spill would occur; however, such a release in open waters closed to mobile adult finfish or shellfish would likely be sub-lethal 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.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

Arena will conduct the proposed activities under EPA's Region VI NPDES General Permit GMG290000 which authorizes the discharge of certain effluents, subject to certain limitations, prohibitions and recordkeeping requirements, and Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program", Appendices A, B, C and J. As such, it is not anticipated these discharges will cause significant adverse impacts to water quality.

- **Marine Mammals**

As a result of the proposed activities, marine mammals may be adversely impacted by emissions, effluents, waste sent to shore, and/or accidents.

Chronic and sporadic sub-lethal 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 accidental oil spill, chance collisions with service vessels and ingestion of plastic material.

The net results 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 ship could cause serious injury or death (Laist et al., 2001).

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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.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

Arena will conduct the proposed activities under EPA's Region VI NPDES General Permit GMG290000 which authorizes the discharge of certain effluents, subject to certain limitations, prohibitions and recordkeeping requirements, and Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program", Appendices A, B, C and J. As such, it is not anticipated these discharges will cause significant adverse impacts to water quality.

Additionally, Arena does not anticipate the incidental taking of any marine mammals as the result of the proposed activities. The proposed activities will be conducted by our company and its contractors and will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations proposed in this Plan:

- Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program, Appendix A
 - BSEE's Notice to Lessees NTL 2015-G03 "Marine Trash and Debris Awareness and Elimination", and the recent National Marine Fisheries Service Biological Opinion issued on March 13, 2020
 - BOEM Notice to Lessees NTL 2016-G01 "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting"
 - BOEM Notice to Lessees NTL 2016-G02 "Implementation of Seismic Mitigation Measures and Protected Species Observer Program"
- **Sea Turtles**

As a result of the proposed activities, sea turtles may be adversely impacted by emissions, effluents, waste sent to shore, and/or accidents.

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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 drilling rigs, production facilities and service vessels. Drilling rigs and project vessels (construction barges) produce noise that could disrupt normal behavior patterns and create some stress to sea turtles, making them more susceptible to disease. Accidental oil spill releases are potential threats which could have lethal effects on turtles. Contact and/or consumption of this released material could seriously affect individual sea turtles. Most OCS related impacts on sea turtles are expected to be sub-lethal. Chronic and/or avoidance of effected areas could cause declines in survival or productivity, resulting in gradual population declines.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

Arena will conduct the proposed activities under EPA's Region VI NPDES General Permit GMG290000 which authorizes the discharge of certain effluents, subject to certain limitations, prohibitions and recordkeeping requirements, and Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program", Appendices A, B, C and J. As such, it is not anticipated these discharges will cause significant adverse impacts to water quality.

Additionally, Arena does not anticipate the incidental taking of any sea turtles as the result of the proposed activities. The proposed activities will be conducted by our company and its contractors and will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations proposed in this Plan:

- Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program, Appendix A
- BSEE's Notice to Lessees NTL 2015-G03 "Marine Trash and Debris Awareness and Elimination", and the recent National Marine Fisheries Service Biological Opinion issued on March 13, 2020
- BOEM Notice to Lessees NTL 2016-G01 "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting"

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- BOEM Notice to Lessees NTL 2016-G02 “Implementation of Seismic Mitigation Measures and Protected Species Observer Program”
- During pile driving activities mitigation measures for sea turtles will be in place with dedicated personnel continuously monitoring a visual radius around the rig

- **Air Quality**

The proposed activities are located approximately 53.5 miles to the nearest Louisiana shoreline. There would be a limited degree of air quality degradation in the immediate vicinity of the proposed activities. Air quality analyses of the proposed activities are below the BOEM exemption level. As such, Arena does not anticipate any IPF’s as a result of the proposed activities.

- **Ship Wreck Sites (Known or Potential)**

There are no physical disturbances to the seafloor which could impact known or potential shipwreck sites, as the review of high-resolution shallow hazards data indicate there are no known or potential shipwreck sites located within the surveyed area. As such, Arena does not anticipate any IPF’s as a result of the proposed activities.

- **Prehistoric Archaeological Sites**

There are no physical disturbances to the seafloor which could cause impacts to prehistoric archaeological sites, as the review of high-resolution shallow hazards data and supporting studies did not reflect the occurrence of prehistoric archaeological sites. As such, Arena does not anticipate any IPF’s as a result of the proposed activities.

Vicinity of Offshore Location

- **Essential Fish Habitat**

As a result of the proposed activities, essential fish habitat may be adversely impacted by effluents and/or accidents.

An accidental oil spill that may occur as a result of the proposed activities has potential to cause some detrimental effects on essential fish habitat. It is unlikely that an accidental oil spill release would occur; however, if a spill were to occur in close proximity to finfish or shellfish, the effects would likely be sub-lethal and

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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.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

- **Marine and Pelagic Birds**

As a result of the proposed activities, marine and pelagic birds may be adversely impacted by an accidental oil spill, by the birds coming into contact with the released oil. It is unlikely that an accidental oil spill release would occur.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

- **Public Health and Safety**

There are no anticipated emissions, effluents, wastes sent to shore, and/or accidents from the proposed activities that could cause impacts to the public health and safety. Arena has requested BOEM approval to classify the proposed objective area as absent of hydrogen sulfide.

Coastal and Onshore

- **Beaches**

As a result of the proposed activities, beaches may be adversely impacted by an accidental oil spill. However, due to the distance from shore (approximately 53.5 miles to nearest Louisiana shoreline), and the response capabilities that would be implemented, no significant adverse impacts are expected. Both historical spill data and the combined trajectory/risk calculations referenced in the publication of OCS EIA /EA BOEM 2002-052 indicate there is little risk of contact or impact to the coastline and associated environmental resources.

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In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

- **Wetlands**

As a result of the proposed activities, wetlands may be adversely impacted by an accidental oil spill. However, due to the distance from shore (approximately 53.5 miles to the nearest Louisiana shoreline) and the response capabilities that would be implemented, no significant adverse impacts are expected. Both historical spill data and the combined trajectory/risk calculations referenced in the publication of OCS EIA /EA BOEM 2002-052 indicate there is little risk of contact or impact to the coastline and associated environmental resources.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

- **Shore Birds and Coastal Nesting Birds**

As a result of the proposed activities, shore birds and coastal nesting birds may be adversely impacted by an accidental oil spill. However, due to the distance from shore (approximately 53.5 miles to the nearest Louisiana shoreline) and the response capabilities that would be implemented, no significant adverse impacts are expected. Both historical spill data and the combined trajectory/risk calculations referenced in the publication of OCS EIA /EA BOEM 2002-052 indicate there is little risk of contact or impact to the coastline and associated environmental resources.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

- **Coastal Wildlife Refuges**

As a result of the proposed activities, coastal wildlife refuges may be adversely impacted by an accidental oil spill. However, due to the distance from shore (approximately 53.5 miles to the nearest Louisiana shoreline) and the response

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capabilities that would be implemented, no significant adverse impacts are expected. Both historical spill data and the combined trajectory/risk calculations referenced in the publication of OCS EIA /EA BOEM 2002-052 indicate there is little risk of contact or impact to the coastline and associated environmental resources.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

- **Wilderness Areas**

As a result of the proposed activities, wilderness areas may be adversely impacted by an accidental oil spill. However, due to the distance to the nearest area (approximately 53.5 miles to the nearest Louisiana shoreline) and the response capabilities that would be implemented, no significant adverse impacts are expected. Both historical spill data and the combined trajectory/risk calculations referenced in the publication of OCS EIA /EA BOEM 2002-052 indicate there is little risk of contact or impact to the coastline and associated environmental resources.

In the event of an unanticipated blowout resulting in an oil spill, it is unlikely to have an impact based on the industry wide standards for using proven equipment and technology for such responses, implementation of Arena's Regional Oil Spill Response Plan which addresses available equipment and personnel, techniques for containment and recovery, and removal of the oil spill.

Other Resources Identified

Arena has not identified any other environmental resources other than those addressed above.

C. Impacts on Proposed Activities

Arena does not anticipate any impacts on the offshore site specific locations, offshore vicinity, and/or coastal and onshore environmental conditions.

D. Environmental Hazards

Eugene Island Block 251 is not located within a geographic area impacted by strong environmental phenomena, other than potential hurricanes in the Gulf of Mexico. The permanent structure has been designed to meet the current regulations and design

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criteria for these hurricane events. To mitigate potential impacts to the facility and/or wells during impending hurricanes, Arena will take precautionary measures to secure the facility, shutting in the wells and evacuating personnel for evacuation as further detailed in our U.S. Coast Guard Emergency Evacuation Plan.

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 regulations will be considered to avoid, lessen or eliminate potential impacts on environmental resources.

G. Consultation

Arena has not contacted any agencies or persons for consultation regarding potential impacts associated with the proposed activities. Therefore, a list of such entities is not being provided.

H. Preparer

Questions or requests for additional information should be made to Arena's authorized representative/preparer of this Plan:

Teri Halverson
Arena Offshore, LP
2103 Research Forest Drive, Suite 200
The Woodlands, Texas 77380
281-210-0354 (Phone)
thalverson@arenaoffshore.com

I. References

The following documents were utilized in preparing the Environmental Impact Assessment (though not necessarily cited in the document):

<i>Document</i>	<i>Author</i>	<i>Dated</i>
OCS EIA/EA BOEM 2002-052	Bureau of Ocean Energy Management	2002
NTL 2005-G07 "Archaeological Resource Surveys and Reports"	Bureau of Ocean Energy Management	2005

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<i>Document</i>	<i>Author</i>	<i>Dated</i>
Environmental Impact Statement Report No. 2007-003	Bureau of Ocean Energy Management	2007
NTL 2008-G05 "Shallow Hazards Program"	Bureau of Ocean Energy Management	2008
NTL 2008-N05 "Guidelines for Oil Spill Financial Responsibility (OSFR) for Covered Facilities"	Bureau of Ocean Energy Management	2008
NTL 2009-G04 "Significant OCS Sediment Resources in the Gulf of Mexico"	Bureau of Ocean Energy Management	2009
NTL 2009-N11 "Air Quality Jurisdiction on the OCS"	Bureau of Ocean Energy Management	2009
NTL 2009-G26 "U.S. Air Force Communication Towers"	Bureau of Ocean Energy Management	2009
NTL 2009-G27 "Submitting Exploration Plans and Development Operations Coordination Documents"	Bureau of Ocean Energy Management	2009
NTL 2009-G29 "Implementation Plan for Transition from North American Datum 27 to North American Datum 83"	Bureau of Ocean Energy Management	2009
NTL 2009-G31 "Hydrogen Sulfide"	Bureau of Safety and Environmental Enforcement	2009
NTL 2009-G34 "Ancillary Activities"	Bureau of Ocean Energy Management	2009
NTL 2009-G39 "Biologically-Sensitive Underwater Features and Areas"	Bureau of Ocean Energy Management	2010
NTL 2009-G40 "Deepwater Benthic Communities"	Bureau of Ocean Energy Management	2009
NTL 2011-G01-JOINT "Revision to the List of OCS Lease Blocks Requiring Archaeological Resource Surveys and Reports"	Bureau of Ocean Energy Management/Bureau of Safety and Environmental Enforcement	2011
NTL 2014-G04 "Military Warning and Water Test Areas"	Bureau of Ocean Energy Management	2014
BSEE NTL 2015-G03 "Marine Trash & Debris Awareness & Elimination"	Bureau of Safety and Environmental Enforcement	2012

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<i>Document</i>	<i>Author</i>	<i>Dated</i>
NTL 2015-N01 “Information Requirements for Exploration Plans, Development & Production Plans, and Development Operations Coordination Documents on the OCS for Worst Case Discharge and Blowout Scenarios”	Bureau of Ocean Energy Management	2015
NTL 2015-N04 “General Financial Assurance”	Bureau of Ocean Energy Management	2015
NTL 2015-N06 “Procedures and Requirements for Right-of-Use and Easement Requests for Platforms, Artificial Island, Installations and Other Devices Attached to the Seabed”	Bureau of Ocean Energy Management	2015
NTL 2016-N01 – Requiring Additional Security	Bureau of Ocean Energy Management	2016
NTL 2016-G01 – Vessel Strike Avoidance and Injured/Dead Protected Species Reporting	Bureau of Ocean Energy Management	2016
NTL 2016-G02 “Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program”	Bureau of Ocean Energy Management	2016
NPDES General Permit GMG290000	EPA – Region VI	2017
Title 30 CFR Part 550	Bureau of Ocean Energy Management	2019
Title 30 CFR Part 250	Bureau of Safety and Environmental Enforcement	2019
Regional Oil Spill Response Plan	J. Connor Consulting	2019
Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico (FPR-2017-9234)	Office of Protected Resources, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce	2020

Section 20 – Administrative Information (30 CFR Part 550.262)

A. Exempted Information Description (Public Information Copies Only)

Excluded from the Public Information copies are the following:

- a. Proposed bottomhole location information
- b. Proposed total well depths (measured and true vertical depth)
- c. Production Rates and Life of Reserves
- d. New and Unusual Technology
- e. Mineral Resource Conservation Information
- f. Geological and Geophysical Attachments
- g. Correlative well information used to justify H2S classification request

B. Bibliography

The following documents were utilized in preparing the Plan:

<i>Document</i>	<i>Author</i>	<i>Dated</i>
BOEM Environmental Impact Statement Report No. 2007-003	BOEM	2007
Revised Development Operations Coordination Document-Platform “C” (R-6252 & R-6568)	Arena Offshore, LP	2014/2017
Supplemental Development Operations Coordination Document (S-3125)	Newfield Exploration Company	2017
Arena’s Regional Oil Spill Response Plan	J. Connor Consulting	2019

OCS Plan Information Form

**Attachment A
(Public Information)**

OCS PLAN INFORMATION FORM

General Information				
Type of OCS Plan:	Exploration Plan (EP)	Development Operations Coordination Document (DOCD)	X	
Company Name: Arena Offshore, LP		BOEM Operator Number: 02628		
Address:		Contact Person: Teri Halverson		
4200 Research Forest Drive, Suite 230		Phone Number: 281-210-0354		
The Woodlands, Texas 77381		E-Mail Address: thalverson@arenaoffshore.com		
If a service fee is required under 30 CFR 550.125(a), provide the	Amount paid	\$4,238.00	Receipt No.	2600V91Q

Project and Worst Case Discharge (WCD) Information				
Lease(s): OCS-G 03331/36209	Area: EI	Block(s): 252	Project Name (If Applicable):	
Objective(s)	<input checked="" type="checkbox"/> Oil	<input checked="" type="checkbox"/> Gas	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Salt
Onshore Support Base(s): Fourchon, Louisiana				
Platform/Well Name: Platform A/A016	Total Volume of WCD: 25,812 bbls		API Gravity: 39°	
Distance to Closest Land (Miles): 53.5 miles	Volume from uncontrolled blowout: 25,812 bbls			
Have you previously provided information to verify the calculations and assumptions for your WCD?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
If so, provide the Control Number of the EP or DOCD with which this information was provided	R-6252			
Do you propose to use new or unusual technology to conduct your activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Do you propose to use a vessel with anchors to install or modify a structure?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Do you propose any facility that will serve as a host facility for deepwater subsea development?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

Description of Proposed Activities and Tentative Schedule (Mark all that apply)			
Proposed Activity	Start Date	End Date	No. of Days
Exploration drilling			
Development drilling	6/25/2021	12/31/2023	585 total drill days
Well completion	included in above	included in above	
Well test flaring (for more than 48 hours)			
Installation or modification of structure			
Installation of production facilities			
Installation of subsea wellheads and/or manifolds			
Installation of lease term pipelines	2021 or 2022	2021 or 2022	14 days total in either year; not both
Commence production	9/25/2021	12/31/2030	10 years
Other (Specify and attach description)			

Description of Drilling Rig		Description of Structure	
<input checked="" type="checkbox"/> Jackup		<input type="checkbox"/> Caisson	<input type="checkbox"/> Tension leg platform
<input type="checkbox"/> Gorilla Jackup	<input type="checkbox"/> Platform rig	<input checked="" type="checkbox"/> Fixed platform	<input type="checkbox"/> Compliant tower
<input type="checkbox"/> Semisubmersible	<input type="checkbox"/> Submersible	<input type="checkbox"/> Spar	<input type="checkbox"/> Guyed tower
<input type="checkbox"/> DP Semisubmersible	<input type="checkbox"/> Other (Attach Description)	<input type="checkbox"/> Floating production system	<input type="checkbox"/> Other (Attach Description)
Drilling Rig Name (If Known):			

Description of Lease Term Pipelines			
From (Facility/Area/Block)	To (Facility/Area/Block)	Diameter (Inches)	Length (Feet)
EI 251, A	EI 252, I	8"	8000'

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): Platform A				Previously reviewed under an approved EP or DOCD?		<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Is this an existing well or structure?		<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	If this is an existing well or structure, list the Complex ID or API No.		22164-1	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 0			For structures, volume of all storage and pipelines (Bbls): 153 bbls			API Gravity of fluid		39°
Surface Location				Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS OCS-G 03331			OCS			OCS OCS		
Area Name	Eugene Island								
Block No.	251								
Blockline Departures (in feet)	N/S Departure: F__ L			N/S Departure: F__ L			N/S Departure: F__ L		
	2003.93'								
	E/W Departure: F__ L			E/W Departure: F__ L			E/W Departure: F__ L		
	1034.85'								
Lambert X-Y coordinates	X:			X:			X:		
	1,923,854.35'								
	Y:			Y:			Y:		
	-61,570.83'								
Latitude/ Longitude	Latitude			Latitude			Latitude		
	28° 29' 49.7437" N						Latitude		
	Longitude			Longitude			Longitude		
	91° 34' 13.1530" W						Longitude		
Water Depth (Feet): 160'				MD (Feet):		TVD (Feet):		MD (Feet): TVD (Feet):	
Anchor Radius (if applicable) in feet:								MD (Feet): TVD (Feet):	
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): A001 (ST00BP01)				Previously reviewed under an approved EP or DOCD?		<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No				
Is this an existing well or structure?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If this is an existing well or structure, list the Complex ID or API No.			17-709-40360-00					
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No				
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 25,812 bbls (R-6252)			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid 39°					
Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)						
Lease No.	OCS OCS-G 03331			OCS			OCS OCS					
Area Name	Eugene Island											
Block No.	251											
Blockline Departures (in feet)	N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L					
	2050.28'						N/S Departure: F <u> </u> L					
	E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L					
	1015.55'						E/W Departure: F <u> </u> L					
Lambert X-Y coordinates	X: 1,923,873.65			X:			X:					
	Y: -61,524.48			Y:			Y:					
Latitude/ Longitude	Latitude 28° 29' 50.2029" N			Latitude			Latitude Latitude Latitude					
	Longitude 91° 34' 12.9378" W			Longitude			Longitude Longitude Longitude					
Water Depth (Feet): 160'				MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):		
Anchor Radius (if applicable) in feet:				NA						MD (Feet):		TVD (Feet):
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): A003 (ST00BP01)				Previously reviewed under an approved EP or DOCD?		<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No			
Is this an existing well or structure?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If this is an existing well or structure, list the Complex ID or API No.			17-709-40372-00				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No			
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 25,812 bbls (R-6252)			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid 39°				
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)				
Lease No.	OCS OCS-G 03331			OCS			OCS OCS				
Area Name	Eugene Island										
Block No.	251										
Blockline Departures (in feet)	N/S Departure: F__ L			N/S Departure: F__ L			N/S Departure: F__ L		F__ L		
	2060.10'						N/S Departure: F__ L		F__ L		
	E/W Departure: F__ L			E/W Departure: F__ L			E/W Departure: F__ L		F__ L		
	1013.67'						E/W Departure: F__ L		F__ L		
Lambert X-Y coordinates	X: 1,923,875.53			X:			X:				
	Y: -61,514.66			Y:			Y: Y:				
Latitude/ Longitude	Latitude 28° 29' 50.3002" N			Latitude			Latitude Latitude Latitude				
	Longitude 91° 34' 12.9170" W			Longitude			Longitude Longitude Longitude				
Water Depth (Feet): 160'				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet):		TVD (Feet): TVD (Feet):	
Anchor Radius (if applicable) in feet:				NA						MD (Feet): TVD (Feet):	
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): A010 (ST01BP00)				Previously reviewed under an approved EP or DOCD?		<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Is this an existing well or structure?		<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	If this is an existing well or structure, list the Complex ID or API No.		17-709-40406-01	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 25,812 bbls (R-6252)			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid 39°		
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS OCS-G 03331			OCS			OCS OCS		
Area Name	Eugene Island								
Block No.	251								
Blockline Departures (in feet)	N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L		F <u> </u> L
	2040.46'						N/S Departure: F <u> </u> L		F <u> </u> L
	E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L		F <u> </u> L
	1017.43'						E/W Departure: F <u> </u> L		F <u> </u> L
Lambert X-Y coordinates	X: 1,923,871.77			X:			X:		
	Y: -61,534.30			Y:			Y:		
Latitude/ Longitude	Latitude 28° 29' 50.1057" N			Latitude			Latitude Latitude Latitude		
	Longitude 91° 34' 12.9587" W			Longitude			Longitude Longitude Longitude		
Water Depth (Feet): 160'				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):	
Anchor Radius (if applicable) in feet:				NA		TVD (Feet): TVD (Feet): TVD (Feet):			
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): A012 (ST00BP00)				Previously reviewed under an approved EP or DOCD?		<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	
Is this an existing well or structure?		<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	If this is an existing well or structure, list the Complex ID or API No.		17-709-40848-00		
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 25,812 bbls (R-6252)			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid 39°			
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS OCS-G 03331			OCS			OCS OCS			
Area Name	Eugene Island									
Block No.	251									
Blockline Departures (in feet)	N/S Departure: F__ L		2048.96'		N/S Departure: F__ L		N/S Departure: F__ L		F__ L	
	E/W Departure: F__ L		1008.68'		E/W Departure: F__ L		E/W Departure: F__ L		F__ L	
Lambert X-Y coordinates	X:		1,923,880.52'		X:		X:		X:	
	Y:		-61,525.80'		Y:		Y:		Y:	
Latitude/ Longitude	Latitude		28° 29' 50.1900" N		Latitude		Latitude		Latitude	
	Longitude		91° 34' 12.8608" W		Longitude		Longitude		Longitude	
Water Depth (Feet): 156'			MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):	
Anchor Radius (if applicable) in feet:					NA			MD (Feet):		TVD (Feet):
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): A013 (ST00BP00)				Previously reviewed under an approved EP or DOCD?		<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No	
Is this an existing well or structure?		<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	If this is an existing well or structure, list the Complex ID or API No.		17-709-40873-00		
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 25,812 bbls (R-6252)			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid 39°			
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS OCS-G 03331			OCS			OCS OCS			
Area Name	Eugene Island									
Block No.	251									
Blockline Departures (in feet)	N/S Departure: F <u> </u> L		2058.78'		N/S Departure: F <u> </u> L		N/S Departure: F <u> </u> L		N/S Departure: F <u> </u> L	
	E/W Departure: F <u> </u> L		1006.79'		E/W Departure: F <u> </u> L		E/W Departure: F <u> </u> L		E/W Departure: F <u> </u> L	
Lambert X-Y coordinates	X:		1,923,882.41		X:		X:		X:	
	Y:		-61,515.98		Y:		Y:		Y:	
Latitude/ Longitude	Latitude		28° 29' 50.2873" N		Latitude		Latitude		Latitude	
	Longitude		91° 34' 12.8399" W		Longitude		Longitude		Longitude	
Water Depth (Feet): 160'			MD (Feet):		TVD (Feet):		MD (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): A014 (ST00BP00)				Previously reviewed under an approved EP or DOCD?			Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	No	
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 25,812 bbls (R-6252)			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid 39°			
Surface Location				Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS OCS-G 03331			OCS			OCS OCS			
Area Name	Eugene Island									
Block No.	251									
Blockline Departures (in feet)	N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L		F <u> </u> L	
	2041.78'						N/S Departure: F <u> </u> L		F <u> </u> L	
	E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L		F <u> </u> L	
	1024.31'						E/W Departure: F <u> </u> L		F <u> </u> L	
Lambert X-Y coordinates	X: 1,923,864.89'			X:			X:			
	Y: -61,532.98'			Y:			Y:			
Latitude/Longitude	Latitude 28° 29' 50.1186" N			Latitude			Latitude Latitude Latitude			
	Longitude 91° 34' 13.0358" W			Longitude			Longitude Longitude Longitude			
Water Depth (Feet): 156'				MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):
Anchor Radius (if applicable) in feet:				NA				MD (Feet):		TVD (Feet):
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): A015 (ST00BP00)				Previously reviewed under an approved EP or DOCD?			Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	No		
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 25,812 bbls (R-6252)			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid 39°			
Surface Location				Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS OCS-G 03331			OCS			OCS OCS			
Area Name	Eugene Island									
Block No.	251									
Blockline Departures (in feet)	N/S Departure: F <u>s</u> L		2039.14'		N/S Departure: F <u> </u> L		N/S Departure: F <u> </u> L		F <u> </u> L	
	E/W Departure: F <u>E</u> L		1010.56'		E/W Departure: F <u> </u> L		E/W Departure: F <u> </u> L		F <u> </u> L	
Lambert X-Y coordinates	X: 1,923,878.64			X:			X: X: X:			
	Y: -61,535.62			Y:			Y: Y: Y:			
Latitude/ Longitude	Latitude 28° 29' 50.0928" N			Latitude			Latitude Latitude Latitude			
	Longitude 91° 34' 12.8817" W			Longitude			Longitude Longitude Longitude			
Water Depth (Feet): 160'				MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):
Anchor Radius (if applicable) in feet:				NA				MD (Feet):		TVD (Feet):
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): A016 (ST00BP00)				Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No. NA			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						Yes	<input checked="" type="checkbox"/>	No	
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 25,812 bbls (R-6252)			For structures, volume of all storage and pipelines (Bbls): NA			API Gravity of fluid		39°
Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS OCS-G 03331			OCS			OCS OCS		
Area Name	Eugene Island								
Block No.	251								
Blockline Departures (in feet)	N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L		
	2039.14'						N/S Departure: F <u> </u> L		
	E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L		
	1010.56'						E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 1,923,878.64			X:			X:		
	Y: -61,535.62			Y:			Y:		
Latitude/ Longitude	Latitude 28° 29' 50.0928" N			Latitude			Latitude		
	Longitude 91° 34' 12.8817" W			Longitude			Longitude		
Water Depth (Feet): 160'				MD (Feet):		TVD (Feet):		MD (Feet):	
Anchor Radius (if applicable) in feet:								TVD (Feet):	
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 =					

Well Location Plat

**Attachment B
(Public Information)**

EI251
OCS-G-03331
Arena

EI252
OCS-G-00983
Arena



A1 A3
A10 A15
A

EI262
OCS-G-36209
Arena

EI261
OCS-G-36208
Arena

PROPOSED LOCATIONS NAD27 LOUISIANA SOUTH							
LOCATION	CALLNS	CALLEW	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE	WD
Structure "A"	2003.93' FSL	1034.85' FEL	1,923,854.35	-61,570.83	28°29'49.7437"N	91°34'13.1530"W	160'
A001 Surf.	2050.28' FSL	1015.55' FEL	1,923,873.65	-61,524.48	28°29'50.2029"N	91°34'12.9378"W	160'
A003 Surf.	2060.10' FSL	1013.67' FEL	1,923,875.53	-61,514.66	28°29'50.3002"N	91°34'12.9170"W	160'
A010 Surf.	2040.46' FSL	1017.43' FEL	1,923,871.77	-61,534.30	28°29'50.1057"N	91°34'12.9587"W	160'
A013 Surf.	2058.78' FSL	1006.79' FEL	1,923,882.41	-61,515.98	28°29'50.2873"N	91°34'12.8399"W	160'
A015 Surf.	2039.14' FSL	1010.56' FEL	1,923,878.64	-61,535.62	28°29'50.0928"N	91°34'12.8817"W	160'



ARENA
OFFSHORE

**DEVELOPMENT OPERATIONS
COORDINATION DOCUMENT**
OCS-G-36208 BLOCK 261 AND OCS-G-36209 BLOCK 262
EUGENE ISLAND AREA
GULF OF MEXICO

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

SCALE 0 2000
1:24000 FEET



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

Job No.: 18010750 Date: 7/23/2018 Drwn: MM Chart: 1 Of: 1
DWG File: EI251-261-262_A1ST1_A3ST1_A10ST2_A13ST1_A15_D0CD 7/23/2018

**PUBLIC
INFORMATION**

EI239

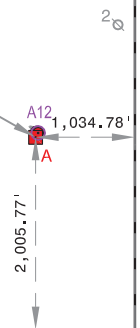


EI251
OCS-G-03331
Arena

WELL LOCATIONS NAD27 LOUISIANA SOUTH							
LOCATION	CallNS	CallEW	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE	WD
A12 Surf	2,048.96'	1,008.68'	1,923,880.52'	-61,525.80'	28°29'50.1900"N	91°34'12.8608"W	156'



Center of Structure "A"	
NAD27 Louisiana South Feet	
X :	1,923,854.42'
Y :	-61,568.99'
Lat :	28°29'49.7620"N
Lon :	91°34'13.1523"W
NAD83 Louisiana South Feet	
X :	3,204,654.78'
Y :	-867.84'
Lat :	28°29'50.6299"N
Lon :	91°34'13.5402"W



EI262



ARENA
OFFSHORE

**DEVELOPMENT OPERATIONS
COORDINATION DOCUMENT**

OCS-G-03331 BLOCK 251
EUGENE ISLAND AREA
GULF OF MEXICO

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

SCALE 0 2000
1:24000 FEET



FUGRO USA MARINE, INC.
6671 Southwest Freeway #700
Houston, Texas 77074
(713) 346-3700

**PUBLIC
INFORMATION**

Job No.: 17170503	Date: 9/4/2017	Drwn: MM	Chart: 1	Of: 1
DWG File: 1717050301_EI251-EI262_DOCD_A12_G03331			REV. 1	9/04/2017

EI239

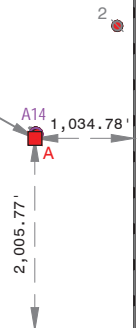


EI251
OCS-G-03331
Arena

Proposed Location NAD27 LOUISIANA SOUTH							
LOCATION	CallNS	CallEW	X COORDINATE	Y COORDINATE	LATITUDE	LONGITUDE	WD
A14 Surf	2,041.78'	1,024.31'	1,923,864.89'	-61,532.98'	28°29'50.1186"N	91°34'13.0358"W	156'

■ C

Center of Structure "A"	
NAD27 Louisiana South Feet	
X :	1,923,854.42'
Y :	-61,568.99'
Lat :	28°29'49.7620"N
Lon :	91°34'13.1523"W
NAD83 Louisiana South Feet	
X :	3,204,654.78'
Y :	-867.84'
Lat :	28°29'50.6299"N
Lon :	91°34'13.5402"W



■ B

EI262



**SUPPLEMENTAL DEVELOPMENT OPERATIONS
COORDINATION DOCUMENT**

OCS-G-03331 BLOCK 251
EUGENE ISLAND AREA
GULF OF MEXICO

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

SCALE 0 2000
1:24000 FEET



FUGRO USA MARINE, INC.
6671 Southwest Freeway #700
Houston, Texas 77074
(713) 346-3700

**PUBLIC
INFORMATION**

Job No.: 17170634 Date: 10/13/2017 Drwn: MM
DWG File: 1717063401_EI251_SD0CD_A14_G03331

Chart: Of: 1 1
10/13/2017

Bathymetry Map

**Attachment C
(Proprietary Information)**

Geological Description

**Attachment D
(Proprietary Information)**

Structure Maps

**Attachment E
(Proprietary Information)**

Deep Seismic Lines

**Attachment F
(Proprietary Information)**

Cross Section Maps

**Attachment G
(Proprietary Information)**

Stratigraphic Columns

**Attachment H
(Proprietary Information)**

NOAA Threatened/Endangered Species

**Attachment I
(Public Information)**



NOAA FISHERIES

Southeast Region Protected Resources Division

Gulf of Mexico's Threatened and Endangered Species

For more information on listed species please visit:
<http://www.nmfs.noaa.gov/pr/species/esa/listed.htm>
http://sero.nmfs.noaa.gov/protected_resources/index.html

Marine Mammal Species	Scientific Name	Status
fin whale	<i>Balaenoptera physalus</i>	Endangered
sei whale	<i>Balaenoptera borealis</i>	Endangered
sperm whale	<i>Physeter macrocephalus</i>	Endangered
Gulf of Mexico Bryde's whale	<i>Balaenoptera edeni - subspecies</i>	Proposed - Endangered
Sea Turtle Species		
green sea turtle	<i>Chelonia mydas</i>	Threatened ¹
hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered
leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered
loggerhead sea turtle	<i>Caretta caretta</i>	Threatened ²
Fish Species		
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	Threatened
Nassau grouper	<i>Epinephelus striatus</i>	Threatened
smalltooth sawfish	<i>Pristis pectinata</i>	Endangered ³
oceanic whitetip shark	<i>Carcharhinus longimanus</i>	Threatened
giant manta ray	<i>Manta birostris</i>	Threatened
Invertebrate Species		
rough cactus coral	<i>Mycetophyllia ferox</i>	Threatened ⁴
pillar coral	<i>Dendrogyra cylindrus</i>	Threatened ⁴
lobed star coral	<i>Orbicella annularis</i>	Threatened
mountainous star coral	<i>Orbicella faveolata</i>	Threatened
boulder star coral	<i>Orbicella franksi</i>	Threatened
staghorn coral	<i>Acropora cervicornis</i>	Threatened ⁴
elkhorn coral	<i>Acropora palmata</i>	Threatened ⁵

¹ North Atlantic and South Atlantic Distinct Population Segments.

² Northwest Atlantic Distinct Population Segment.

³ U.S. Distinct Population Segment

⁴ Colonies located at Dry Tortugas National Park.

⁵ Colonies located at Flower Garden Banks National Marine Sanctuary and Dry Tortugas National Park.



NOAA FISHERIES

Southeast Region

Protected Resources Division

Critical Habitat Designations

For final rules, maps, and GIS data please visit:

http://sero.nmfs.noaa.gov/maps_gis_data/protected_resources/critical_habitat/index.html

Loggerhead sea turtle: There are 38 designated marine areas that occur throughout the Southeast Region.

Gulf sturgeon: There are 14 marine and estuarine units located in Northwest Florida, Alabama, Mississippi, and eastern Louisiana.

Smalltooth sawfish: There are two habitat units located in Charlotte Harbor and in the Ten Thousand Islands/Everglades, Florida.

Species Proposed for Listing Under the Endangered Species Act

Federal action agencies are encouraged to include species proposed for listing under the Endangered Species Act (ESA) in their Section 7 consultation requests. Species that are proposed for listing are those which have been found to warrant federal protection under the ESA, but a final rule formally listing the species has not yet published. By including these species in your Section 7 consultation, reinitiating consultation after the ESA listing is finalized may not be necessary.

For more information on species proposed for listing under the ESA, please visit:

<http://www.nmfs.noaa.gov/pr/species/esa/candidate.htm#proposed>

Waste Tables

**Attachment J
(Public Information)**

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			Projected ocean discharges		Projected Downhole Disposal
Type of Waste and Composition	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	barite, additives	6000 bbls/well	1000 bbls/day/well	discharge overboard	No
Cuttings wetted with water-based fluid	water-based fluids	1500 bbls/well	200 bbls/day/well	discharge overboard	No
Cuttings wetted with synthetic-based fluid	Cuttings generated while using synthetic based drilling fluid.	1200 bbls/well	50 bbls/day/well	Shunt through downpipe	No
Brine	NA	10,000 bbls total	< 1000 bbl/hr	discharge overboard	
Will humans be there? If yes, expect conventional waste					
Domestic waste (kitchen water, shower water)	grey water	30 gal/person/day	NA	Remove floating solids and discharge	No
Sanitary waste (toilet water)	treated sanitary waste	20 gal/person/day	NA	Chlorinate and discharge	No
Is there a deck? If yes, there will be Deck Drainage					
Deck Drainage	wash water and rainwater	1000 bbl (dependent on rainfall)	15 bbl/hr	discharge overboard	No
Will you conduct well treatment, completion, or workover?					
well treatment fluids	NA	NA	NA	NA	NA
well completion fluids	Calcium Chloride	200 bbls/well	25 bbls/hr (1 day per well)	NA	NA
workover fluids	NA	NA	NA	NA	NA
Miscellaneous discharges. If yes, only fill in those associated with your activity.					
Desalination unit discharge	Seawater	NA	NA	NA	NA
Blowout prevent fluid	NA	NA	NA	NA	NA
Ballast water	NA	NA	NA	NA	NA
Bilge water	NA	NA	NA	NA	NA
Excess cement at seafloor	NA	NA	NA	NA	NA
Fire water	Seawater	NA	NA	NA	NA
Cooling water	Seawater	NA	NA	NA	NA
Will you produce hydrocarbons? if yes fill in for produced water.					
Produced water	formation water	30 bbls/day	<100 bbls/day	discharge overboard	NA
Will you be covered by an individual or general NPDES permit ?					
GENERAL PERMIT					G/MG290269

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		Composition	Solid and Liquid Wastes transportation		Waste Disposal	
Type of Waste	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	NA		NA	NA	NA	NA
Synthetic-based drilling fluid or mud	used SBF and additives		cutting boxes on supply boat	Newpark Environmental in Fourchon, LA	35 bbls/well	NA
Cuttings wetted with Water-based fluid	NA		NA	NA	NA	NA
Cuttings wetted with Synthetic-based fluid	NA		NA	NA	NA	NA
Cuttings wetted with oil-based fluids	NA		NA	NA	NA	NA
Will you produce hydrocarbons? If yes fill in for produced sand.						
Produced sand	NA		NA	NA	NA	NA
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.						
trash and debris	trash and debris		storage bins on supply boat	GIS Dock Port Fourchon, LA	500 cu ft total	landfill
used oil	NA		drums on supply boat	NA	NA	NA
wash water	NA		NA	NA	NA	NA
chemical product wastes	NA		NA	NA	NA	NA

Air Quality Emissions Report

**Attachment K
(Public Information)**

DOCD AIR QUALITY SCREENING CHECKLIST

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

COMPANY	Arena Offshore, LP
AREA	Eugene Island
BLOCK	251
LEASE	OCS-G 03331
PLATFORM	A
WELLS	A001, A003, A010, A012, A013, A014, A015, A016
COMPANY CONTACT	Teri Halverson
TELEPHONE NO.	281-210-0354
REMARKS	Add Well A016 to drill, complete and produce. This AQR is inclusive of all production from Platform A, therefore all development and production emissions (current and future) are reflected for Platform A in this AQR, inclusive of Plan Control Nos. R-6628, S-7873 and N-10025 (wells A001, A003, A010, A012, A013, A014, A015).

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		TOTAL NUMBER OF CONSTRUCTION DAYS
YEAR	NUMBER OF PIPELINES	
2021	1	14 days
2022	1	14 days
2023		
2024		
2025		
2026		
2027		
2028		
2029		
2030		

AIR EMISSIONS COMPUTATION 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		

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	AP42 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

Screening Questions for DOCD's

	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 the other air pollutants (where D = distance to shore in miles)?		X
Does your emission calculations include any emission reduction measures or modified emission factors?		X
Does or will the facility complex associated with your proposed development and production activities process production from eight or more wells?		X
Do you expect to encounter H ₂ S at concentrations greater than 20 parts per million (ppm)?		X
Do you propose to flare or vent natural gas in excess of the criteria set forth under 250.1105(a)(2) and (3)?		X
Do you propose to burn produced hydrocarbon liquids?		X
Are your proposed development and production activities located within 25 miles from shore?		X
Are your proposed development and production activities located within 200 kilometers of the Breton Wilderness Area?		X

Air Pollutant	Plan Emission Amounts ¹ (tons)	Calculated Exemption Amounts ² (tons)	Calculated Complex Total Emission Amounts ³ (tons)
Carbon monoxide (CO)	278.01	48274.17	278.01
Particulate matter (PM)	32.38	1781.55	32.38
Sulphur dioxide (SO ₂)	18.35	1781.55	18.35
Nitrogen oxides (NOx)	1339.98	1781.55	1339.98
Volatle organic compounds (VOC)	43.76	1781.55	43.76

¹ For activities proposed in your EP or DOCD, list the projected emissions calculated from the worksheets.

² List the exemption amounts in your proposed activities calculated using the formulas in 30 CFR 250.303(d).

³ List the complex total emissions associated with your proposed activities calculated from the worksheets.

AIR EMISSIONS CALCULATIONS - FIRST YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT	PHONE	REMARKS	ESTIMATED TONS									
									PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
OPERATIONS	Equipment	RATING	MAX. FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR												
	Diesel Engines	HP	GAL/HR	GAL/D														
	Nat. Gas Engines	HP	SCF/HR	SCF/D														
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	DIYR												
DRILLING	PRIME MOVER>600hp diesel	8800	425.04	10200.96	24	184	6.20	3.56	213.22	6.40	46.52	13.70	7.85	470.78	14.12	102.72		
	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	0.00	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	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)	2600	125.58	3013.92	8	78	1.83	1.05	63.00	1.89	13.74	0.57	0.33	19.65	0.59	4.29		
	VESSELS>600hp diesel(supply)	2600	125.58	3013.92	8	52	1.83	1.05	63.00	1.89	13.74	0.38	0.22	13.10	0.39	2.86		
	VESSELS>600hp diesel(tugs)	4600	222.18	5332.32	12	2	3.24	1.86	111.45	3.34	24.32	0.04	0.02	1.34	0.04	0.29		
PIPELINE	PIPELINE LAY BARGE diesel	3000	144.9	3477.60	24	14	2.11	1.21	72.69	2.18	15.86	0.36	0.20	12.21	0.37	2.66		
INSTALLATION	SUPPORT VESSEL diesel	2600	125.58	3013.92	24	14	1.83	1.05	63.00	1.89	13.74	0.31	0.18	10.58	0.32	2.31		
	PIPELINE BURY 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		
	SUPPORT VESSEL 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)	2600	125.58	3013.92	8	14	1.83	1.05	63.00	1.89	13.74	0.10	0.06	3.53	0.11	0.77		
	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		
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		
PRODUCTION	RECIP <600hp diesel - Crane	224	10.8192	259.66	8	47	0.49	0.09	6.91	0.55	1.49	0.09	0.02	1.30	0.10	0.28		
	RECIP >600hp diesel (BU Gen.)	330	15.939	382.54	24	47	0.23	0.13	8.00	0.24	1.74	0.13	0.08	4.51	0.14	0.98		
	SUPPORT VESSEL diesel	2600	125.58	3013.92	8	30	1.83	1.05	63.00	1.89	13.74	0.22	0.13	7.56	0.23	1.65		
	TURBINE nat gas (Gen)	818	7790.632	186975.17	24	47			2.34	0.02	1.50		0.00	0.01	0.34	0.84		
	RECIP 2 cycle lean nat gas (Comp	2200	15714.6	377150.40	24	47			52.82	2.08	7.27		0.01	29.79	1.18	4.10		
	RECIP 4 cycle lean nat gas	0	0	0.00	0	0			0.00	0.00	0.00		0.00	0.00	0.00	0.00		
	RECIP 4 cycle rich nat gas	0	0	0.00	0	0			0.00	0.00	0.00		0.00	0.00	0.00	0.00		
	BURNER nat gas	0	0.00	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.	TANK-	0	0	0.00	0	0			0.00	0.00	0.00		0.00	0.00	0.00	0.00		
	FLARE-	0	0	0.00	0	0			0.00	0.00	0.00		0.00	0.00	0.00	0.00		
	PROCESS VENT-	0	0	0.00	0	0			0.00	0.00	0.00		0.00	0.00	0.00	0.00		
	FUGITIVES-	0	0	500.0	0	47			0.25	0.00	0.00		0.00	0.14	0.00	0.00		
	GLYCOL STILL VENT-	0	0	0.00	0	0			0.00	0.00	0.00		0.00	0.00	0.00	0.00		
DRILLING	OIL BURN	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		
WELL TEST	GAS FLARE	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		
	2021 YEAR TOTAL						21.45	12.12	782.40	24.51	167.42	15.90	9.09	575.68	17.73	123.76		
EXEMPTION	DISTANCE FROM LAND IN																	
CALCULATION	MILES											1781.55	1781.55	1781.55	1781.55	48274.17		
	53.5																	

AIR EMISSIONS CALCULATIONS - SECOND YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT	PHONE	REMARKS	ESTIMATED TONS									
									PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	HR/D	DIYR	MAXIMUM POUNDS PER HOUR											
	Diesel Engines	HP	GAL/HR	GAL/D														
	Nat. Gas Engines	MMBTU/HR	SCF/HR	SCF/D														
DRILLING Jack-Up MODU WFD 250, 300, or 350	PRIME MOVER>600hp diesel	8800	425.04	10200.96	24	365	6.20	3.56	213.22	6.40	2.18	72.69	2.15	15.58	933.89	28.02	203.76	
	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	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	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	0.00	
	BURNER 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	0.00	
	AUXILIARY EQUIP<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	0.00	
	VESSELS>600hp diesel(crew)	2600	125.58	3013.92	8	156	1.83	1.05	63.00	1.89	1.89	13.74	13.74	0.66	39.31	1.18	8.58	
	VESSELS>600hp diesel(supply)	2600	125.58	3013.92	8	104	1.83	1.05	63.00	1.89	1.89	13.74	13.74	0.44	26.21	0.79	5.72	
	VESSELS>600hp diesel(tugs)	4600	222.18	5332.32	12	2	3.24	1.86	111.45	3.34	3.34	24.32	24.32	0.02	1.34	0.04	0.29	
	PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	3000	144.9	3477.60	24	14	2.11	1.21	72.69	2.18	2.18	15.86	15.86	0.36	12.21	0.37	2.66
	SUPPORT VESSEL diesel	2600	125.58	3013.92	24	14	1.83	1.05	63.00	1.89	1.89	13.74	13.74	0.31	10.58	0.32	2.31	
	PIPELINE BURY 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	0.00	
	SUPPORT VESSEL 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	0.00	
	VESSELS>600hp diesel(crew)	2600	125.58	3013.92	8	14	1.83	1.05	63.00	1.89	1.89	13.74	13.74	0.10	3.53	0.11	0.77	
	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	0.00	
FACILITY INSTALLATION	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	0.00	
	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	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	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	0.00	
PRODUCTION	RECIP <600hp diesel - Crane	224	10.8192	259.66	8	365	0.49	0.09	6.91	0.55	0.55	1.49	1.49	0.72	10.08	0.81	2.18	
	RECIP >600hp diesel (BIJ Gen.)	330	15.939	382.54	24	365	0.23	0.13	8.00	0.24	0.24	1.74	1.74	1.02	35.02	1.05	7.64	
	SUPPORT VESSEL diesel	2600	125.58	3013.92	8	104	1.83	1.05	63.00	1.89	1.89	13.74	13.74	0.76	26.21	0.79	5.72	
	TURBINE nat gas (Gen)	818	7790.632	186975.17	24	365	2.34	0.02	2.34	0.02	0.02	1.50	1.50	0.02	10.26	0.08	6.55	
	RECIP .2 cycle lean nat gas (Comp)	2200	15714.6	377150.40	24	365	0.01	0.01	52.82	2.08	2.08	7.27	7.27	0.04	231.35	9.13	31.84	
	RECIP 4 cycle lean nat gas	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	0.00	
	RECIP 4 cycle rich nat gas	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	0.00	
	BURNER nat gas	0	0.00	0.00	0	0	0.00	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- FLARE-	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PROCESS VENT-	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	FUGITIVES-	0	0	500.0	0	365	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	GLYCOL STILL VENT-	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	OIL BURN	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	GAS FLARE	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2022 YEAR TOTAL																		
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																	
		53.5																
			21.45	12.12	782.40	24.51	167.42	32.38	1781.55	1781.55	43.76	278.01	1781.55	1781.55	18.35	1339.98	43.76	278.01
			1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	1781.55	48274.17

AIR EMISSIONS CALCULATIONS - THIRD YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT	PHONE	REMARKS	ESTIMATED TONS											
									PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO		
Arena Offshore, LP	Eugene Island	251	OCS-G 03331	A	A001, A003, A010, A012, A013, A014, A015, A017	Ten Halverson	281-210-0354	#REF!												
	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO	
	Diesel Engines	HP	GAL/HR	GAL/D	D/YR															
	Nat. Gas Engines	HP	SCF/HR	SCF/D																
	Burners	MMBTU/HR	SCF/HR	SCF/D																
DRILLING	PRIME MOVER>600hp diesel	8800	425.04	10200.96	365	6.20	213.22	6.40	46.52	27.17	15.58	933.89	28.02	203.76	0.00	0.00	0.00	0.00	0.00	
	PRIME MOVER>600hp diesel	0	0	0.00	0	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	BURNER diesel	0	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	AUXILIARY EQUIP->600hp diesel	0	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(crew)	2600	125.58	3013.92	156	1.83	63.00	1.89	13.74	1.14	0.66	39.31	1.18	8.58	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(supply)	2600	125.58	3013.92	104	1.83	63.00	1.89	13.74	0.76	0.44	26.21	0.79	5.72	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel(tugs)	4600	222.18	5332.32	2	3.24	111.45	3.34	24.32	0.04	0.02	1.34	0.04	0.29	0.00	0.00	0.00	0.00	0.00	
PIPELINE	PIPELINE LAY BARGE diesel	0	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
INSTALLATION	SUPPORT VESSEL diesel	0	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PIPELINE BURY BARGE diesel	0	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0	0.00	0	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY	DERRICK BARGE diesel	0	0	0.00	0	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRODUCTION	RECIP <600hp diesel - Crane	224	10.8192	259.66	365	0.49	6.91	0.55	1.49	0.72	0.13	10.08	0.81	2.18	0.00	0.00	0.00	0.00	0.00	
	RECIP >600hp diesel (BUJ Gen.)	330	15.939	382.54	365	0.23	8.00	0.24	1.74	1.02	0.58	35.02	1.05	7.64	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	2600	125.58	3013.92	104	1.83	63.00	1.89	13.74	0.76	0.44	26.21	0.79	5.72	0.00	0.00	0.00	0.00	0.00	
	TURBINE nat gas (Gen)	818	7790.632	186975.17	365	2.34	2.34	0.02	1.50	0.00	0.04	10.26	0.08	6.55	0.00	0.00	0.00	0.00	0.00	
	RECIP 2 cycle lean nat gas (Comp	2200	15714.6	377150.40	365	0.01	52.82	2.08	7.27	0.00	0.04	231.35	9.13	31.84	0.00	0.00	0.00	0.00	0.00	
	RECIP 4 cycle lean nat gas	0	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	RECIP 4 cycle rich nat gas	0	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	BURNER nat gas	0	0.00	0.00	0	0.00	0.00	0.00	0.00	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	0.00	0															
	FLARE-	0	0	0.00	0															
	PROCESS VENT-	0	0	0.00	0															
	FUGITIVES-	0	0	500.0	365															
	GLYCOL STILL VENT-	0	0	0.00	0															
	OIL BURN	0	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	GAS FLARE	0	0	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2023						15.67	583.72	18.55	124.07	31.61	17.91	1313.66	42.97	272.27	1781.55	1781.55	1781.55	1781.55	48274.17	
EXEMPTION	DISTANCE FROM LAND IN																			
CALCULATION	MILES																			
	53.5																			

AIR EMISSIONS CALCULATIONS - YEAR 2021 - 2027

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT	PHONE	REMARKS	ESTIMATED TONS								
									PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC
OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	HR/ID	DYR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO	
	Diesel Engines	HP	GAL/HR	GAL/ID													
	Nat. Gas Engines	MMBTU/HR	SCF/HR	SCF/ID													
DRILLING	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	
	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	0.00	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	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	
	VESSELS>600hp diesel(tugs)	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	
PIPELINE INSTALLATION	PIPELINE LAY 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	
	SUPPORT VESSEL 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	
	PIPELINE BURY 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	
	SUPPORT VESSEL 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	
FACILITY INSTALLATION	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	
	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	
	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	
PRODUCTION	RECIP <600hp diesel - Crane	224	10.8192	259.66	8	365	0.49	0.09	6.91	0.55	1.49	0.72	0.13	10.08	0.81	2.18	
	RECIP >600hp diesel (BIJ Gen.)	330	15.939	382.54	24	365	0.23	0.13	8.00	0.24	1.74	1.02	0.58	35.02	1.05	7.64	
	SUPPORT VESSEL diesel	2600	125.58	3013.92	8	104	1.83	1.05	63.00	1.89	13.74	0.76	0.44	26.21	0.79	5.72	
	TURBINE nat gas (Gen)	818	7790.632	186975.17	24	365		0.00	2.34	0.02	1.50		0.02	10.26	0.08	6.55	
	RECIP 2 cycle lean nat gas (Comp	2200	15714.6	377150.40	24	365		0.01	52.82	2.08	7.27		0.04	231.35	9.13	31.84	
	RECIP 4 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	RECIP 4 cycle rich nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	BURNER nat gas	0	0.00	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	MISC.	BPD	SCF/HR	COUNT													
	TANK-FLARE-	0	0	0	0	0											
PROCESS VENT-	0	0	0	0	0												
FUGITIVES-	0	0	500.0	365	0												
GLYCOL STILL VENT-	0	0	0	0	0												
OIL BURN	0	0	0	0	0												
GAS FLARE	0	0	0	0	0												
2024 - 2030 YEAR TOTAL							2.56	1.29	133.06	5.03	25.75	2.50	1.21	312.92	12.94	53.93	
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES						1781.55	1781.55	1781.55	1781.55		1781.55	1781.55	1781.55	1781.55	1781.55	48274.17

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
Arena Offshore,	Eugene Island	251	OCS-G 03331	A	A001, A003, A010, A0
Year	Emitted				
	Substance				
	PM	SOx	NOx	VOC	CO
2021	15.90	9.09	575.68	17.73	123.76
2022	32.38	18.35	1339.98	43.76	278.01
2023	31.61	17.91	1313.66	42.97	272.27
2024	2.50	1.21	312.92	12.94	53.93
2025	2.50	1.21	312.92	12.94	53.93
2026	2.50	1.21	312.92	12.94	53.93
2027	2.50	1.21	312.92	12.94	53.93
2028	2.50	1.21	312.92	12.94	53.93
2029	2.50	1.21	312.92	12.94	53.93
2030	2.50	1.21	312.92	12.94	53.93
Allowable	1781.55	1781.55	1781.55	1781.55	48274.17

Oil Spill Response Discussion

**Attachment L
(Public Information)**

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 25,812 barrels of condensate with an API gravity of 39°.

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 16% probability of impact to the shorelines of Cameron Parish, Louisiana within 30 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

Arena Offshore, LP 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 41% or approximately 10,583 barrels of condensate would be evaporated/dispersed within 24 hours, with approximately 15,229 barrels remaining.

Spill Response EI 251, Well No. C002	Barrels of Oil
WCD Volume	25,812
Less 41% natural evaporation/dispersion	10,583
Remaining volume	15,229

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.

Arena Offshore, LP'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 59,593 barrels. Temporary storage associated with skimming equipment equals 4,449 barrels. If additional storage is needed, three 20,000 barrel storage barges 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 9,588 barrels. Temporary storage associated with skimming equipment equals 220 barrels. If additional storage is needed, a 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 31,800 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. The State of Louisiana Initial Oil Spill Response Plan, applicable Area Contingency and Geographical Response Plans and Unified Command would be consulted to ensure that environmental and special economic resources would be correctly identified and prioritized to ensure optimal protection. Shoreline protection strategies depict the protection response modes applicable for oil spill clean-up operations. The State of Louisiana Initial Oil Spill Response Plan provides detailed shoreline protection strategies for this area, and it describes necessary action to keep the oil spill from entering Louisiana's coastal wetlands, based on the assumption that removal of the released oil will be much easier and less damaging to fragile coastal ecosystems if done in the open waters of the Gulf of Mexico. Supervisory personnel have the option to modify the deployment and operation of equipment allowing a more effective response to site-specific circumstances. Arena Offshore, LP's contract Spill Management Team holds a copy of the State of Louisiana Initial Oil Spill Response Plan.

Based on the anticipated worst case discharge scenario, Arena Offshore, LP 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 28 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:

- 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

Arena Offshore, LP 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 normally be supervised by the Operations Section as necessary for close quarter vessel response activities. A Simultaneous Operations (SIMOPS) unit may be established in the Source Control Section to control operations if events require a significant number of large vessels to operate independently, but in coordination with each other. This unit would normally monitor the subsurface activities of each vessel (ROV, dispersant application, well control support, etc.), as well.

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 situational status 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

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 100' minimum 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 Arena Offshore, LP'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 ≥ 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 (C³)

- Publish, implement, and fully test an appropriate communications plan
- Design an operational scheme, maintaining a manageable span of control
- Designate and mark C³ vessels for easy aerial identification
- Designate and employ C³ 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

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 and state of the oil
- Use of VOOs
- Distance of surf zone from shoreline
- Sea state, tides, currents

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

- Dispersants are pre-approved with FOSC approval outside of 3 miles and the 10 meter depth curve and requires RRT VI approval inside 3 mile and/or 10 meter curve
- 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
- 56' shallow water skimmers
- Egmpol and Marco SWS (protected waters)
- Operate with aerial spotter directing systems to observed oil slicks

VOO

- Use Arena Offshore, LP's contracted resources as applicable
- Industry vessels 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

- Environmental risk assessments (ERA) to determine priorities for area protection
- Shoreline Cleanup Assessment Team (SCAT) assessments
- Time to acquire personnel and equipment and their availability
- Previous contingency planning contained in the appropriate ACP, Geographic Response Plan (GRP), and currently for Louisiana, The State of Louisiana Initial Oil Spill Response Plan, Deep Water Horizon, dated 2 May 2010

Actions

Placement of boom

- Position boom in accordance with the ERA based on the actual situation or the appropriate ACP or GRP.
- Assess timing of booming operations to ensure it is where it needs to be at time of impact. 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
- Shoreline Cleanup and Assessment Team 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
- 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 redeployment as necessary
- In-situ burn may be considered when marshes have been impacted
- Passive clean up of marshes should be considered and appropriate stocks of sorbent boom and/or sweep obtained
- Earthen berms and shoreline protection boom may be considered to protect sensitive inland areas

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 is 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 Arena Offshore, LP'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 30 day impact. The results are tabulated below.

Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%) within 30 days
<p align="center">EI 251, Well No. C002</p> <p><i>54 miles from shore</i></p>	G03331	C38	Calhoun, TX	1
			Matagorda, TX	4
			Brazoria, TX	2
			Galveston, TX	5
			Jefferson, TX	5
			Cameron, LA	16
			Vermilion, LA	7
			Iberia, La	3
			St. Mary, LA	1
			Terrebonne, LA	7
			Lafourche, LA	1
			Plaquemines, LA	2

WCD Scenario– BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS (54 miles from shore)

15,229 bbls of condensate (Volume considering natural weathering)

API Gravity39°

FIGURE 2 – Equipment Response Time to EI 251, Well No. C002

Dispersants/Surveillance

Dispersant/Surveillance	Dispersant Capacity (gal)	Storage Capacity	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to site	Total Hrs
ASI								
Basler 67T	2000	NA	2	Houma	2	2	0.5	4.5
DC 3	1200	NA	2	Houma	2	2	0.6	4.6
DC 3	1200	NA	2	Houma	2	2	0.6	4.6
Aero Commander	NA	NA	2	Houma	2	2	0.5	4.5

Offshore Response

Offshore Equipment No 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
HOSS Barge	43000	4000	3 Tugs	5	Harvey	7	0	5	7.5	1	20.5
95' FRV	12342	249	NA	4	Leeville	2	0	2	4.5	0	6.6
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	4	0	6	13	1.5	24.5
Recovered Oil Storage No 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	4	12	4	6.25	1	27.25
CTCo 2605	NA	20000	1 Tug	6	Amelia	4	12	4	6.25	1	27.25
CTCo 2606	NA	20000	1 Tug	6	Amelia	4	12	4	6.25	1	27.25

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
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Leeville	2	2	0.4	7.5	1	12.9

Nearshore Response

Nearshore Equipment No 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	4	12	4	15	1	36

Staging Area: Cameron

Nearshore and Inland Skimmers With Staging	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											
SWS Egmpol	3000	100	NA	3	Galveston	2	2	3.6	2	0	9.6
SWS Egmpol	3000	100	NA	3	Morgan City	2	2	5.3	2	0	11.3
SWS Marco	3588	20	NA	3	Lake Charles	2	2	1.5	2	0	7.5

Shoreline Protection

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)									
12,900' 18" Boom	6 Crew	12	New Iberia, LA	1	1	4	2	3	11
5,900' 18" Boom	3 Crew	6	Houston, TX	1	1	4	2	3	11
4,300' 18" Boom	2 Crew	4	Port Arthur, TX	1	1	2	2	3	9
7,700' 18" Boom	3 Crew	6	Port Allen, LA	1	1	5	2	3	12
1,000' 18" Boom	1 Crew	2	Hackberry, LA	1	1	1	2	3	8

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 (48)	NA	NA	NA	2	Harvey	2	2	7	1	2	14
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	2	2	3.6	1	2	10.6
Bird Scare Guns (12)	NA	NA	NA	2	Aransas Pass	2	2	9.9	1	2	16.9
Bird Scare Guns (24)	NA	NA	NA	2	Lake Charles	2	2	1.5	1	2	8.5
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	6.8	1	2	13.8

Response Asset	Total
Offshore EDRC	59,593
Offshore Recovered Oil Storage	64,449
Nearshore / Shallow Water EDRC	9,588
Nearshore / Shallow Water Recovered Oil Storage	23,220

Vicinity Map

**Attachment M
(Public Information)**

