UNITED STATES GOVERNMENT August 6, 2019
MEMORANDUM

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

Subject: Public Information copy of plan

Control #	-	N-10074
Type	-	Initial Development Operations Coordinations Document
Lease(s)	-	OCS-G05504 Block - 224 Eugene Island Area OCS-G36360 Block - 223 Eugene Island Area
Operator	-	Castex Offshore, Inc.
Description	-	Well G003 and Platform G
Rig Type	-	Not Found

Attached is a copy of the subject plan.

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

Leslie Wilson
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
FIXED/G		7373 FNL, 1671 FWL	G05504/EI/224
WELL/G003	G36360/EI/223	7129 FNL, 1665 FWL	G05504/EI/224

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

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

OCS PLAN INFORMATION FORM

General Information

Type of OCS Plan:		Exploration Plan (EP)	X	Development Operations Coordination Document (DOCD)	
Company Name: **Castex Offshore, Inc.**				BOEM Operator Number: **02970**	
Address: **333 Clay Street, Suite 2900**				Contact Person: **Natalie Schumann**	
Houston, TX 77002				Phone Number: **(281) 878-0042**	
				E-Mail Address: nschumann@castexenergy.com	
If a service fee is required under 30 CFR 550.125(a), provide the		Amount paid	**$4,238**	Receipt No.	**75779285401**

Project and Worst Case Discharge (WCD) Information

Lease(s): **OCS-G 36360 / 05504**			Area: **Eugene Island**				Block(s): **223/224**			Project Name (If Applicable): **NA**	
Objective(s)		Oil	X	Gas		Sulphur		Salt	Onshore Support Base(s): **Port Fourchon, Louisiana**		
Platform / Well Name: **G / G-3**				Total Volume of WCD: **12,338 bbls**					API Gravity: **48°**		
Distance to Closest Land (Miles): **55**							Volume from uncontrolled blowout: **12,338 bbls/day**				

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

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

Proposed Activity	Start Date	End Date	No. of Days
Hook-up and commence production of Well No. G-3	**12/01/2019**	**12/01/2034**	**15 years**

Description of Drilling Rig

	Jackup		Drillship		Caisson		Tension leg platform
	Gorilla Jackup		Platform rig	X	Fixed platform		Compliant tower
	Semisubmersible		Submersible		Spar		Guyed tower
	DP Semisubmersible		Other (Attach description)		Floating production system		Other (Attach description)
Drilling Rig Name (If known): **NA**							

Description of Structure

Description of Lease Term Pipelines

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

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 G**					Previously reviewed under an approved EP or DOCD?	**X**	Yes		No
Is this an existing well or structure?	**X**	Yes		No	If this is an existing well or structure, list the Complex ID or API No.	**2414**			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							Yes	**X**	No

WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): **12,338**	For structures, volume of all storage and pipelines (Bbls): **NA**	API Gravity of fluid	**48°**

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	**OCS-G 05504**	**NA**	**NA**
Area Name	**Eugene Island**	**NA**	**NA**
Block No.	**224**	**NA**	**NA**
Blockline Departures (in feet)	**N/S Departure: 7373' FNL**	**N/S Departure: NA**	**N/S Departure: NA**
	E/W Departure: 1671' FWL	**E/W Departure: NA**	**E/W Departure: NA**
Lambert X-Y coordinates	**X: 1,851,449.40**	**X: NA**	**X: NA**
	Y: 27,204.60	**Y: NA**	**Y: NA**
Latitude/ Longitude	**Latitude: 28° 35' 27.738"N**	**Latitude: NA**	**Latitude: NA**
	Longitude: 91° 47' 45.938"W	**Longitude: NA**	**Longitude: NA**

Water Depth (Feet): **138'**	MD (Feet): **NA**	TVD (Feet): **NA**	MD (Feet): **NA**	TVD (Feet): **NA**
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
NA			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): **Well No. G-3**					Previously reviewed under an approved EP or DOCD?		Yes	**X**	No
Is this an existing well or structure?		Yes	**X**	No	If this is an existing well or structure, list the Complex ID or API No.	**NA**			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							Yes	**X**	No

WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): **12,338**	For structures, volume of all storage and pipelines (Bbls): **NA**	API Gravity of fluid	**48°**

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	**OCS-G 05504**		
Area Name	**Eugene Island**		
Block No.	**224**		
Blockline Departures (in feet)	**N/S Departure: 7129.26' FNL**	**N/S Departure:**	**N/S Departure:**
	E/W Departure: 1665.16' FWL	**E/W Departure:**	**E/W Departure:**
Lambert X-Y coordinates	**X: 1,851,443.56**	**X:**	**X:**
	Y: 27,208.28	**Y:**	**Y:**
Latitude/ Longitude	**Latitude: 28° 35' 27.698"N**	**Latitude:**	**Latitude:**
	Longitude: 91° 47' 46.008"W	**Longitude:**	**Longitude:**

Water Depth (Feet): **138'**	MD (Feet):	TVD (Feet):	MD (Feet):	TVD (Feet): **'**
Anchor Radius (if applicable) in feet: **NA**	**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
NA			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	

CASTEX OFFSHORE, INC.
333 CLAY STREET, SUITE 2900
HOUSTON, TEXAS 77002

INITIAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

EUGENE ISLAND BLOCK 223
LEASE OCS-G 36360

PUBLIC INFORMATION COPY

June 25, 2019

CASTEX OFFSHORE, INC.

INITIAL DEVELOPMENT OPERATIONS COORDINATON DOCUMENT

LEASE OCS-G 36360

EUGENE ISLAND BLOCK 223

SECTION A
PLAN CONTENTS

Castex Offshore, Inc. (Castex) submitted an Initial Exploration Plan (Control No. N-10063) which was approved on June 13, 2019. This plan provided for the drilling and completion of Well No. G003 in Eugene Island Block 223, Lease OCS-G 36360.

Under this Initial Development of Operations Coordination Document (Plan/DOCD), Castex proposes to commence production of Well No. G003 from our existing Platform G (Complex ID No. 2414) located in Eugene Island Block 224, Lease OCS-G 05504

There will be no anchors associated with the proposed activities proposed for in this plan. There will be no drill operations conducted under this DOCD.

The OCS Plan Information Form – BOEM-137is included under this section as ***Attachment A-1***.

(b) Location
Included under this section are the following attachments:

- Location Map: ***Attachment A-2***
- Bathymetry Map: ***Attachment A-3***
- Platform Diagram detailing existing well slots: ***Attachment A-4***

(c) Safety and Pollution Prevention Features
There are no drilling operations being proposed for in this plan and there are no proposed new or existing facilities that will be utilized for these operations.

(d) Storage Tanks and/or Production Vessels
Castex will not have any storage tanks and/or production vessels that will store oil (capacity greater than 25 bbls or more) to support the proposed activities.

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
Production	Platform G	N/A	None	N/A	N/A

(e) Pollution Prevention Measures
The State of Florida is not an affected State for the activities proposed for in this plan; therefore, pursuant to NTL No. 2008-G04, this information is not required.

(f) Additional Measures
Castex does not propose additional safety, pollution prevention, or early spill detection measures beyond those required by Title 30 CFR Part 250.

(g) Processing Fee
A Pay.gov receipt is being included in this plan in the amount of $4,238.00 (per well) to cover the cost and processing fee for the proposed operations being conducted under this plan as ***Attachment A-5***.

Attachment A-1

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

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

OCS PLAN INFORMATION FORM

General Information

Type of OCS Plan:		Exploration Plan (EP)	X	Development Operations Coordination Document (DOCD)	
Company Name: **Castex Offshore, Inc.**				BOEM Operator Number: **02970**	
Address: **333 Clay Street, Suite 2900**				Contact Person: **Natalie Schumann**	
Houston, TX 77002				Phone Number: **(281) 878-0042**	
				E-Mail Address: nschumann@castexenergy.com	
If a service fee is required under 30 CFR 550.125(a), provide the		Amount paid	**$4,238**	Receipt No.	**75779285401**

Project and Worst Case Discharge (WCD) Information

Lease(s): **OCS-G 36360 / 05504**		Area: **Eugene Island**				Block(s): **223/224**		Project Name (If Applicable): **NA**	
Objective(s)		Oil	X	Gas		Sulphur		Salt	Onshore Support Base(s): **Port Fourchon, Louisiana**
Platform / Well Name: **G / G-3**				Total Volume of WCD: **12,338 bbls**				API Gravity: **48°**	
Distance to Closest Land (Miles): **55**						Volume from uncontrolled blowout: **12,338 bbls/day**			

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

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

Proposed Activity	Start Date	End Date	No. of Days
Hook-up and commence production of Well No. G-3	**12/01/2019**	**12/01/2034**	**15 years**

Description of Drilling Rig

	Jackup		Drillship		Caisson		Tension leg platform
	Gorilla Jackup		Platform rig	X	Fixed platform		Compliant tower
	Semisubmersible		Submersible		Spar		Guyed tower
	DP Semisubmersible		Other (Attach description)		Floating production system		Other (Attach description)
Drilling Rig Name (If known): **NA**							

Description of Structure

Description of Lease Term Pipelines

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

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 G**					Previously reviewed under an approved EP or DOCD?	**X**	Yes		No
Is this an existing well or structure?	**X**	Yes		No	If this is an existing well or structure, list the Complex ID or API No.	**2414**			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							Yes	**X**	No

WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): **12,338**	For structures, volume of all storage and pipelines (Bbls): **NA**	API Gravity of fluid	**48°**

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	**OCS-G 05504**	**NA**	**NA**
Area Name	**Eugene Island**	**NA**	**NA**
Block No.	**224**	**NA**	**NA**
Blockline Departures (in feet)	**N/S Departure: 7373' FNL**	**N/S Departure: NA**	**N/S Departure: NA**
	E/W Departure: 1671' FWL	**E/W Departure: NA**	**E/W Departure: NA**
Lambert X-Y coordinates	**X: 1,851,449.40**	**X: NA**	**X: NA**
	Y: 27,204.60	**Y: NA**	**Y: NA**
Latitude/ Longitude	**Latitude: 28° 35' 27.738"N**	**Latitude: NA**	**Latitude: NA**
	Longitude: 91° 47' 45.938"W	**Longitude: NA**	**Longitude: NA**

Water Depth (Feet): **138'**	MD (Feet): **NA**	TVD (Feet): **NA**	MD (Feet): **NA**	TVD (Feet): **NA**
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
NA			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	
			X:	Y:	

Attachment A-2

X = 1,849,778.40

Y = −20,079.02

2 (G05504)

D1 (G05504)

PROPOSED WELL LOCATION

LOCATION	BLOCK	CALLS		COORDINATES		LATITUDE	LONGITUDE	WD	MD	TVD
No. G-3 (SL)	*EI 224*	*1,665.16' FWL*	*7,129.26' FNL*	*X = 1,851,443.56*	*Y = -27,208.28*	*28° 35' 27.698"N*	*91° 47' 46.008"W*	*138'*		

'G' No. G-3 (SL)

G1 & G2 (G05504)

EI223
OCS-G36360
CASTEX OFFSHORE, INC.

EI224
OCS-G05504
FIELDWOOD ENERGY LLC

SS008 (G05504)

Y = −30,762.96

EI244
OCS-Open

3 (G05504)

Y = −34,577.60

SHEET 1 OF 1
PUBLIC INFORMATION

1,000 0 1,000 2,000
SCALE IN FEET

DATUM: NAD 27
SPHEROID: CLARKE 1866
PROJECTION: LAMBERT
ZONE: LOUISIANA SOUTH

Echo OFFSHORE LLC
36499 Perkins Road
Prairieville, Louisiana 70769
Tel: 225-673-2163

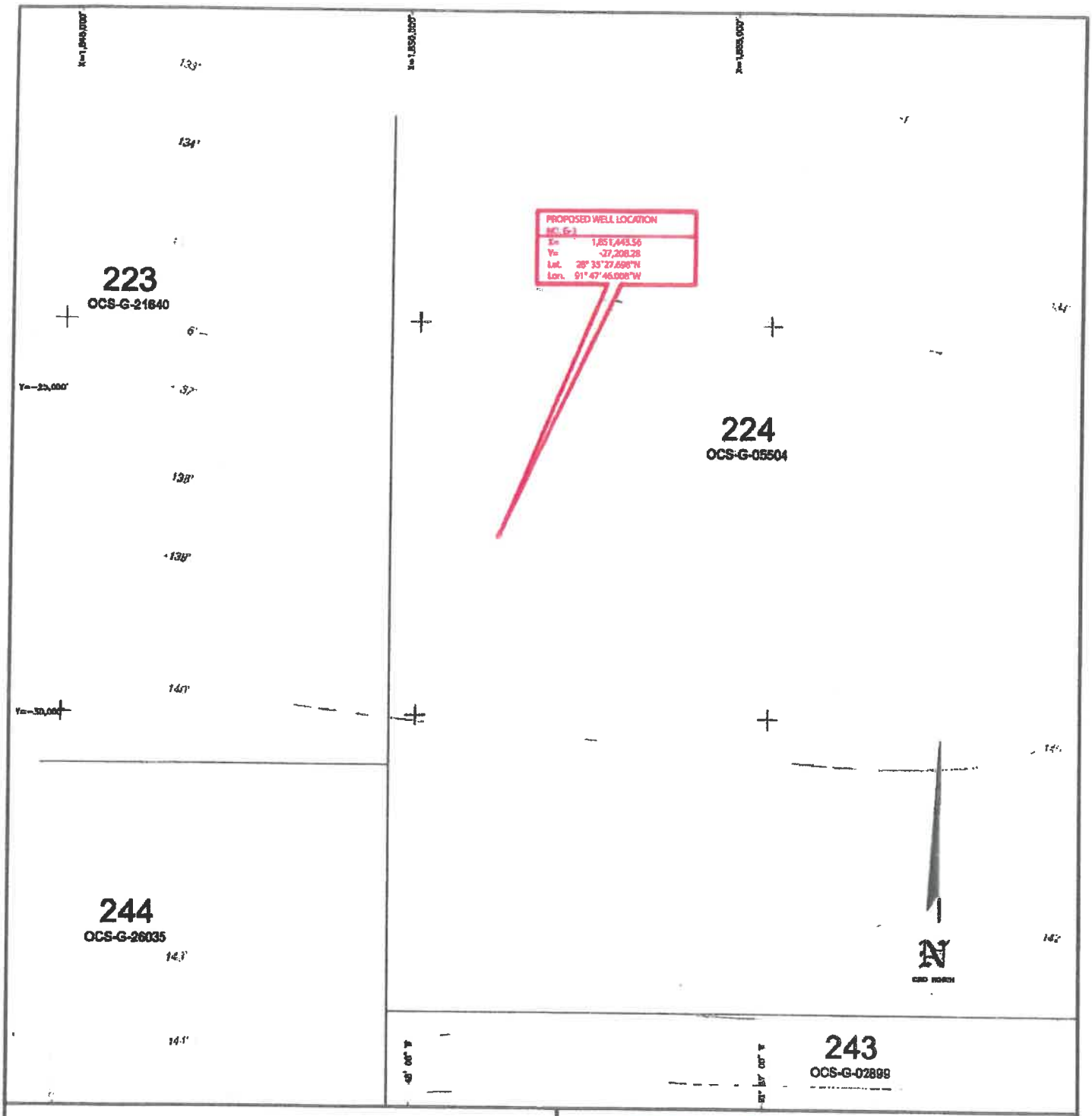
CASTEX OFFSHORE, INC.

EXPLORATION PLAT

PROPOSED WELL No. G-3
OCS-G 36360 BLOCK 223
WITH SURFACE LOCATION IN BLOCK 224
EUGENE ISLAND AREA
GULF OF MEXICO

DRAWN BY:	DATE:	CHECKED BY:	DRAWING No.:
RJN	2/7/2019	MEK	19-006 EXP
REV. DATE:	REV. No.:	SCALE:	JOB No.:
		1"=2,000'	19-006-32

Attachment A-3



CONTOUR INTERVAL = 1 FOOT
ZERO DATUM = MEAN LOWER LOW WATER
APPLIED ACOUSTIC VELOCITY = HARMONIC MEAN
AVERAGE TIDE HEIGHT ADJUSTMENT
MEAN LOWER LOW WATER = 0.0
MEAN SEA LEVEL = +1.0 feet
MEAN HIGH TIDE = +2.0 feet

GEODETIC DATUM: NAD27
PROJECTION: LAMBERT
ZONE: LOUISIANA SOUTH
GRID UNITS: US SURVEY FEET

0' 2,000' 4,000'
SCALE = 1:24,000

CASTEX Castex Offshore, Inc.

Exploration Plan Bathymerty Map
OCS-G-36360 Proposed Well No. G-3
Block 224
Eugene Island Area

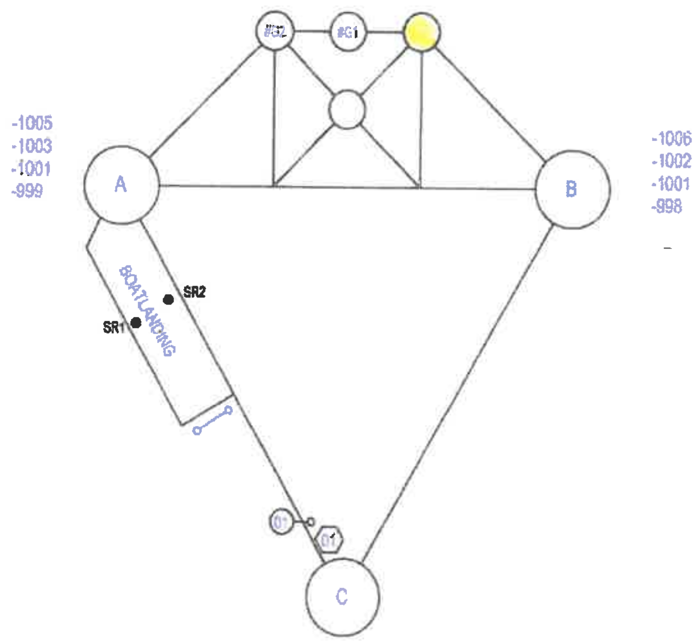
Fugro GeoServices, Inc.

E:\FES\2009\3409127\CAD\Geo\1127-2000.dwg 07/24/2009 09:51 AM UGL
8.34" x 10.70"

Attachment A-4

CP	#	SEG #	DESCRIPTION
1060	01	16145	8" G/G TO EI-244 3C SSTI, KAH-5050
	01		4" SUMP

PLATFORM
TRUE NORTH



NOTE: C.P. READINGS ON LEGS WERE TAKEN AT 10' INTERVALS STARTING AT -10'.

Symbol	Meaning	Symbol	Meaning
XX (circle)	RISER	XX (circle)	CONDUCTOR/WELL ID
XX (square)	J-TUBE	⊕	CONDUCTOR/NO ID
XX (hexagon)	PROCESS EQUIP	○	EMPTY SLOT

NOTE: NOT DRAWN TO SCALE
DRAWN FROM FIELD SKETCHES

DRAWN BY: RM	CASTEX		C.P. SURVEY
REVISED BY: TK	PLATFORM: EI-224-G		
REVISION DATE: 07/20/18	INSPECTION NO. T-2018-1	PLAN @ +12'	DWG. NO. EI224G
CHECKED BY: BF	INSP. DATE 07/18/18		DWG. DATE 04/09/02

OCEANEERING

15'-0"
7'-6"
30'-0"
7'-6"
15'-0"
G3
G1
G2

Attachment A-5

Pay.gov

Receipt

Tracking Information

Pay.gov Tracking ID: 26ICKHEF

Agency Tracking ID: 75779285401

Form Name: BOEM Development Operations Coordination Document or DPP

Application Name: BOEM Development/DOCD Plan - BD

Payment Information

Payment Type: Debit or credit card

Payment Amount: $4,238.00

Transaction Date: 06/25/2019 04:50:53 PM EDT

Payment Date: 06/25/2019

Region: Gulf of Mexico

Contact: Natalie Schumann 281-878-0042

Company Name/No: Castex Offshore, Inc., 02970

Lease Number(s): 36360, 05504, , ,

Area-Block: Eugene Island EI, 223: , 224: , : , : ,

Type-Wells: Initial Plan, 1

Account Information

Cardholder Name: Caran Crooker

Card Type: Visa

Card Number: **********1476

SECTION B
GENERAL INFORMATION

(a) Applications and Permits
No additional applications or permits are required to conduct the activities proposed herein.

(b) Drilling Fluids
No drilling operations are proposed in this DOCD.

(c) Production
Anticipated Production:

Type	*Average Production Rate*	*Peak Production Rate*	*Life of Reservoir*
Oil	_____ bbls/day	_____ bbls/day	_____ Years
Gas	_____ mmcf/day	_____ mmcf/day	_____ Years

(d) Oil Characteristics
According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(e) New or Unusual Technology
Castex does not propose to use any new or unusual technology to carry out the proposed development activities.

(f) Bonding Statement
The bond requirements for the activities and facilities proposed in this DOCD are satisfied by a $3,000,000.00 areawide development bond, furnished and maintained according to Title 30 CFR Part 556, Subpart I; NTL No. 2015-N04, "General Financial Assurance;" and additional security under 30 CFR 556.901(d)-(f) and NTL No. 2016-N01, "Requiring Additional Security."

(g) Oil Spill Financial Responsibility
Oil Spill Financial Responsibility coverage will be obtained under Castex Offshore, Inc., BOEM company number 02970 for the activities proposed under this Plan/EP according to Title 30 CFR Part 253; and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities".

(h) Deepwater Well Control Statement
According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(i) Suspensions of Production
Castex does not anticipate filing any request for Suspension of Production to hold the lease addressed in this plan.

(j) Blowout Scenario
According to NTL No. 2015-N01, this section of the Plan is not applicable to the proposed operations in this DOCD. There are no drilling operations proposed under this DOCD. The Blowout Scenario, Worst-Case Discharge Assumptions and Calculations were previously provided and approved with Plan Control No. N-10063 and is included as ***Attachment B-1***.

Attachment B-1

CASTEX

Eugene Island Block 223, Well No. G003

Blowout Scenario

In the event of an uncontrolled flow of hydrocarbons from the wellbore, the Oil Spill Response Plan (OSRP) would be activated. Castex would immediately bring in the most qualified and experienced personnel in order to assist in the control of the blowout/spill. Castex has Cudd Pressure Control and Wild Well Control identified in the OSRP.

Three blowout scenarios will be described below:

Blowout Scenario I is most likely and is one that will remedy itself in 24 hours without any intervention. Scenario I will assume that the rig, BOPs and wellhead equipment are not damaged beyond repair and the well can be intervened after the well bridges over.

Blowout Scenario II will assume that the rig is still on location and capable of supporting a top kill or the replacement of the BOP Stack.

Blowout Scenario III will assume that all available MODU's are under contract, another Operator would have to make their well safe, suspend their contract with the Contractor, allow Castex to sign a contract, mob the rig to Castex's location and drill a relief well. These three cases should represent the quickest and simplest resolution to the longest and most difficult solution to the problem. Current availability of equipment to enact both well intervention scenarios will be identified.

Blowout Scenario I

Assuming an uncontrolled flow situation, the MODU is intact and not sufficiently damaged, and the well bridges over within a 24-hour period.

Duration:

- **24 hours**

Probability of the well bridging over is very high.

Wells in the Gulf of Mexico that have natural completions are typically produced with a sand face draw down of 1,000 psi or less. Depleting sandstone reservoirs in excess of 1,000 psi differential will dramatically increases the chances of sanding up the wellbore. The methodology of using absolute open flow (AOF) of the last casing string set will put maximum drawdown on the sandface. As a result, the rock will fail rapidly, causing a bridge to be formed.

Castex Offshore, Inc.
Blowout Scenario
Eugene Island Block 223 Well No. G003

Blowout Scenario II

Assuming an uncontrolled flow situation, the MODU is intact and not sufficiently damaged, wellbore intervention would be performed from the MODU, or a vessel/barge mobilized nearby. It is assumed that the BOPs are compromised, that the rig has not caught on fire and is capable of supporting well control efforts with the assistance of a support vessel. As an example, the flow could be controlled from either a "top kill" method or from removal of the damaged surface BOP stack or wellhead and subsequent replacement of the stack and the wellbore shut in.

Duration:

- 2 days to assess the situation and condition of the well.
- 2 days to mobilize and RU equipment
- 6 days to control well
- **10 days Total**

Blowout Scenario III

Assuming an uncontrolled flow situation, where the MODU and/or the wellbore is irreparably damaged during a blowout scenario, a relief well would have to be drilled. It is assumed that a suitable rig is not currently available due to the workload from any of the contractors working in the Gulf of Mexico. It assumes that another Operator will make their well safe and release the rig they have under contract to Castex for the use of drilling the relief well.

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

Duration:

- 2 days to assess the situation and condition of the well.
- 10 days for Operator to suspend current operations
- 2 days to mobilize Rig and equipment
- 62 days to drill relief well
- **76 days Total**

Rig Availability:

- Castex plans to contract Ensco Offshore to drill the prospect
- Ensco 68, or comparable rig, would be utilized to drill the well.
- Ensco has three (3) other rigs currently working in the Gulf of Mexico that are capable of drilling a relief well.
- Other Contractors and equipment capable of drilling a relief well:
  - Enterprise Offshore – four (4) jackups
  - Rowan Companies, Inc. – two (2) jackups
  - Whitefleet – three (3) jackups
- 12 working jackups capable of drilling a relief well

Castex Offshore, Inc.
Blowout Scenario
Eugene Island Block 223 Well No.G003

Rig Package Constraints:

- Water depth is 138' at the Eugene Island 223 location
- Relief well would be drilled from an open water location
- Use of mat or independent leg rigs is possible use for relief well
- Use of slot or cantilever rigs is possible use for relief well
- Use of a platform rig for a relief well is not an option.

CASTEX

Eugene Island Block 223, Well No. G003
Blowout Prevention Measures

In addition to the MMS 30 CFR 250, these additional measures will be performed to prevent and reduce the likelihood of a blowout and conduct effective and early intervention in the event of a blowout as required by US DOI BSEE NTL No. 2015-N01.

Blowout Prevention:

- Company will verify with contractor that the BOP has been certified, maintained and is capable of operating in the anticipated conditions required to drill this well.
- Company representative will witness and review all BOP tests, casing tests and formation integrity tests.
- Company representative will review and witness the installation, testing, function testing and operation of the diverter system and diverter outlets.
- Computerized system (IPT SureTec or equivalent) will be used for all BOP testing.
- Key personnel on the rig will have a valid well control certificate.
- Company representative will relay and review the result of the FIT with the office in Houston prior to drilling ahead.
- Adequate circulation will be performed prior to cementing operations on any casing string, in order to obtain a quality cement job.
- All production casing strings will be centralized below, above, and across hydrocarbon bearing zones in order to ensure/assist with the proper zonal isolation of pay sands.
- Every effort will be made to review all offset and seismic data in order to prepare a mud weight schedule that will allow for safe drilling margin without putting excess hydrostatic pressures on known zones previously encountered.
- Lost circulation material will be added to the mud system in order to assist the mud systems ability to prevent lost circulation. Sweeps and concentrated pills will be used to prevent uncontrolled mud losses.
- Have spotting fluid on the rig or at the dock for quick response to stuck pipe.
- 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.
- Connections will be simulated while drilling into pressure transition areas in order to properly assess the current wellbore conditions.
- Mud-loggers may be utilized during critical drilling operations as another set of eyes to monitor gas content of mud returns, formation characteristics and abnormalities of cuttings and estimate paleo aging of cuttings.
- Gas detection systems will be functioned daily. Run two gas detectors.
- Logging while drilling (LWD) tools will be utilized to evaluate formations, formation pressures and fluid content in the critical sections of the well. This will enable the real time identification of any changes in anticipated formation pressures and assist in the picking of casing points and

wellbore TD. Log data will be continuously review by the Castex drilling and geological departments.

- Pressure While Drilling (PWD) data will be utilized to maintain constant monitoring of hydrostatic pressures applied to the wellbore in the critical sections of the well.

Blowout Scenario:

- ***Estimated maximum flow rate:*** The estimated maximum flow rate would occur in the objective section, if a kick were taken and the well blew out. The maximum Worst Case Discharge (WCD) modeled for this scenario is 12,338 BOPD.
- ***Maximum duration of blowout days:*** The maximum duration of blowout is estimated to be 76 days total. This assumes the rig is damaged beyond repair. It is also assumed there are no suitable idle rigs and a working rig would have to be obtained from another Operator. That well would be suspended, the rig mobilized to location, and a relief well drilled.
- ***Maximum discharge volume:*** The total volume: barrels above (12,338 BOPD) times the flow rate X duration (76 days) = 937.668 bbls.

Blowout Intervention:

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

- Assuming an uncontrolled flow situation, the MODU is intact and not sufficiently damaged, wellbore intervention would be performed from the MODU, or a vessel/barge mobilized nearby. It is assumed that the BOPs are compromised, that the rig has not caught on fire and is capable of supporting well control efforts with the assistance of a support vessel. As an example, the flow could be controlled from either a "top kill" method or from the removal of the damaged surface BOP stack or wellhead and subsequent replacement of the stack and the wellbore shut in.

- Assuming an uncontrolled flow situation, where the MODU and/or the wellbore is irreparably damaged during a blowout scenario, a relief well would have to be drilled. It is assumed that a suitable rig is not currently available due to the workload from any of the contractors working in the Gulf of Mexico. It assumes that another Operator will make their well safe and release the rig they have under contract to Castex for the use of drilling the relief well.

Castex believes this is the best case and worst case blowout scenario.

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

SECTION C
GEOLOGICAL AND GEOPHYSICAL INFORMATION

(a) Geologic Description

There are no drilling operations provided for in this plan; this data was previously provided in Plan Control No. N-10063.

(b) Structure Map(s)

Included as ***Attachment C-1*** is a current structure contour map (depth base and expressed in fee subsea) depicting the entire lease coverage area; drawn on top of the prospective hydrocarbon sands. The map depicts the bottom-hole location and applicable geological cross section.

(c) Interpreted Seismic Lines

The proposed operations will be conducted from a previously approved surface location (Plan Control No. N-10063); therefore, the deep seismic lines are required for the proposed activity.

(d) Geological Structure Cross-Sections

The proposed operations will be conducted from a previously approved surface location and the data was previously provided for in Plan Control No. N-10063.

(e) Shallow Hazards Report

The proposed operations will be conducted from a previously approved surface location as provided for in Plan Control No. S-07342; therefore, a shallow hazards report is not being provided

(f) Shallow Hazards Assessment

The proposed operations will be conducted from a previously approved surface location as provided for in Plan Control No. S-07342; therefore, a shallow hazards assessment is not being provided.

(g) High Resolution Seismic Lines

The proposed operations will be conducted from a previously approved surface location as provided for in Plan Control No.S-07342; therefore, annotated high-resolution survey lines are not being submitted.
e detection (fault scarp trends) overlain with the seafloor amplitude.

(h) Stratigraphic Column

Not applicable for the operations proposed for in this plan; this data was previously provided for in Plan Control No. N-10063.

Attachment C-1

SECTION D
HYDROGEN SULFIDE INFORMATION

(a) Concentration

Castex does not anticipate encountering any H_2S during the proposed operations.

(b) Classification

In accordance with Title 30 CFR 250.490(c), Eugene Island Block 224 (surface location) has been classified by the BOEMRE as H_2S absent.

The basis for determination is the evaluation of the following offset wells which were drilled to the stratigraphic equivalent of the Sand Series as proposed in this plan.

Lease Number	Area / Block	Well Name	Sand Series

(c) H2S Contingency Plan

In accordance with 30 CFR 250.490(c), a contingency plan is not required sine the area should be classified as H2S absent. .

(d) Modeling Report

According to NTL No. 2008-G04, this section of the Plan/DOCD is not applicable to the proposed operations.

SECTION E
MINERAL RESOURCE CONSERVATION INFORMATION

(a) Technology & Reservoir Engineering Practices and Procedures
Proprietary Data

(b) Technology and Recovery Practices and Procedures
Proprietary Data

(c) Reservoir Development
Proprietary Data

SECTION F
BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

(a) High-Density Deepwater Benthic Communities Information

This Plan/DOCD does not propose activities that could disturb seafloor areas in water depths of 300 meters (984 feet) or greater; therefore, "Deepwater Benthic Communities" information is not required.

(b) Topographic Features Map

Activities proposed in this Plan/DOCD do not fall within 305 meters (1,000 feet) of a topographic "no activity zone".

(c) Topographic Features Statement

All activities proposed under this Plan/DOCD will be conducted outside all Topographic Feature Protective Zones, therefore shunting of drill cuttings and drilling fluids is not required.

(d) Live Bottoms (Pinnacle Trend) Map

Eugene Island Blocks 223/224 are not located within 61 meters (200 feet) of any live-bottom (pinnacle trend) features.

(e) Live Bottoms (Low Relief) Map

Eugene Island Blocks 223/224 are not located within 100 feet of any live-bottom (low-relief) features.

(f) Potentially Sensitive Biological Features

Eugene Island Blocks 223/224 are not located within 30 meters (100 feet) of potentially sensitive biological features.

(g) Remotely Operated Vehicle (ROV) Surveys)

The activities proposed in this Plan/DOCD are not located within an area where ROV Surveys are required.

(h)Threatened and Endangered Species, Critical Habitat, and Marine Mammal Information

Under Section 7 of the Endangered Species Act (ESA) 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.

In accordance with the 30 CFR 250, Subpart B, effective May 14, 2007, and further outlined in Notice to Lessees (NTL) 2008-G04, lessees/operators are required to address site-specific information on the presence of federally listed threatened or endangered species and critical habitat designated under the ESA and marine mammals protected under the Marine Mammal Protection Act (MMPA) in the area of proposes activities under this plan.

NOAA Fisheries currently lists the Sperm Whale, Leatherback Turtle, Green Turtle, Hawksbill Turtle, and the Kemp's Ridley Turtle as endangered and the Loggerhead Turtle and Gulf Sturgeon as threatened. Currently there are no designated critical habitats for the listed species in the Gulf of Mexico Outer Continental Shelf, however, it is possible that one or more of these species could be seen in the area of our operations.

SECTION F - Continued
BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

(i) Archaeological Report

Fugro Geoservices Inc. performed a geophysical survey of the entire block of Eugene Island Block 221. No relct landforms were imaged that could represent prehistoric habitation sites. There were no indications of potential historic shipwreck sites within the survey area. Please refer to the Archaeological and Shallow Hazard Survey Report previously submitted in 2009.

(j) Air and Water Quality Information

The State of Florida is not an affected State for the activities proposed in this Plan/DOCD; therefore, pursuant to NTL No. 2008-G04, this information is not required.

(k) Socioeconomic Information

The State of Florida is not an affected State for the activities proposed in this Plan/DOCD; therefore, pursuant to NTL No. 2008-G04, this information is not required.

SECTION G
WASTES AND DISCHARGES INFORMATION

(a) Projected Generated Wastes

The projected generated wastes associated with the activities provided for in this plan are included in ***Attachment G-1.***

(b) Projected Ocean Discharges

The projected ocean discharges associated with the activities provided for in this plan are included in ***Attachment G-2***.

(c) Modeling Report

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(d) NPDES Permits

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(e) Cooling Water Intake

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

Attachment G-1

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					
EXAMPLE: Cuttings wetted with ynthetic based fluid	*Cuttings generated while using synthetic based drilling*	*X bbl/well*	*X bbl/day*	*discharge pipe*	*No*
Water-based drilling fluid	barite, additives	3500 bbl	<1000 bbl/hr	discharge overboard	No
Cuttings wetted with water-based fluid	barite, additives	3500 bbl	<1000 bbl/hr	discharge overboard	No
Cuttings wetted with oil-based fluid	Cuttings generated while using oil based drilling fluid.	3500 bbl/well	N/A	Collected in tanks & transported to disposal	No
Brine	N/A	N/A	N/A	N/A	
Will humans be there? If yes, expect conventional waste					
EXAMPLE: Sanitary waste water		*X liter/person/day*	*NA*	*chlorinate and discharge*	*No*
Domestic waste (kitchen water, shower water)	grey water	4500 bbls		chlorinate and discharge	No
Sanitary waste (toilet water)	treated sanitary waste				No
Is there a deck? If yes, there will be Deck Drainage					
Deck Drainage	rainfall	20,000 bbls	<600 bbls/hr	discharge overboard	No
Will you conduct well treatment, completion, or workover?					
well treatment fluids	N/A	N/A			N/A
well completion fluids	N.A	N/A			N/A
workover fluids	N/A	N/A			N/A
Miscellaneous discharges. If yes, only fill in those associated with your activity.					
Desalinization unit discharge	seawater	925,000 bbls	<600 bbls/hr	discharge overboard	No
Blowout prevent fluid	N/A	N/A	N/A	N/A	N/A
Ballast water	seawater	24,000 bbls	16,200 bbls/hr	discharge overboard	No
Bilge water	fresh water, seawater	635 bbls	< 1 bbl/hr	discharge overboard	No
Excess cement at seafloor	N/A	N/A	N/A	N/A	N/A
Fire water	seawater	1,200 bbls	65 bbls/hr	discharge overboard	No
Cooling water	seawater	485,000 bbls	600 bbls/hr	discharge overboard	No
Will you produce hydrocarbons? If yes fill in for produced water.					
Produced water	NA	NA			
Will you be covered by an individual or general NPDES permit ?			**GENERAL PERMIT**		

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

Attachment G-2

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

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

	Projected generated waste		Solid and Liquid Wastes transportation	Waste Disposal		
	Type of Waste	Composition	Transport Method	Name/Location of Facility	Amount	Disposal Method
Will drilling occur ? If yes, fill in the muds and cuttings.						
	EXAMPLE: Oil-based drilling fluid or mud	***NA***	NA	NA	NA	NA
	Oil-based drilling fluid or mud	Diesel Based Drilling Fluids	MPT Tanks	R360 Fourchon, LA	NA	Recycle/Injection/Land Farming/ReUse
	Synthetic-based drilling fluid or mud	N/A	N/A	N/A	N/A	N/A
	Cuttings wetted with Water-based fluid	NA	NA	NA	NA	NA
	Cuttings wetted with Synthetic-based fluid	N/A	N/A	N/A	N/A	N/A
	Cuttings wetted with oil-based fluids	Diesel Coated Drill Cuttings	MPT Tanks	R360 Fourchon, LA	NA	Recycle/Injection/Land Farming/ReUse
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.						
	EXAMPLE: trash and debris	***cardboard, aluminum,***	***barged in a storage bin***	***shorebase***	***z tons total***	***recycle***
	trash and debris	trash and debris	storage bins on supply boat	EPS, Fourchon, LA	150 cu ft total	landfill
	used oil	used oil	drums on supply boat	EPS, Fourchon, LA	70 gal/week	recycled
	wash water	N/A	N/A	N/A	N/A	N/A
	chemical product wastes	paints, solvents, batteries,etc.	storage container	EPS, Fourchon, LA	200 lbs/yr	hazardous waste

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

SECTION H
AIR EMISSIONS INFORMATION

(a) Emissions Worksheets and Screening Questions

(1) Screening Questions

Screen Procedures for DOCD's	Yes	No
Is any calculated Complex Total (CT) Emission amount (tons) associated with your proposed development 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
Do 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_2S at concentrations greater than 20 parts per million (ppm)?		X
Do you propose to flare or vent natural gas in excess or criteria set for the 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 (40 kilometers) from shore?		X
Are your proposed development and production activities located within 124 miles (200 kilometers) of the Breton Wilderness Area?		X

(2) Emissions Worksheets

Included in this section as ***Attachment H-1***, is the Projected Air Quality Emissions Report worksheet (Form BOEM-0139).

This information was calculated by:

Natalie Schumann
Castex Offshore, Inc.
(281) 878-0042
nschumann@castexenergy.com

Attachment H-1

DOCD AIR QUALITY SCREENING CHECKLIST

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

COMPANY	Castex Offshore, Inc.
AREA	Eugene Island
BLOCK	224
LEASE	OCS-G 05504
PLATFORM	G
WELL	G-3
COMPANY CONTACT	Natalie Schumann / nschumann@castexenergy.com
TELEPHONE NO.	(281) 878-0042
REMARKS	Commence production of EI 223, Well #G-3 from existing Platform G in EI 224

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER OF PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2019	NA	NA
2020		
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		
2033		
2034		

AIR EMISSIONS CALCULATIONS - FIRST YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT	PHONE	REMARKS
Castex Offshore, Inc.	Eugene Island	224	OCS-G 05504	G	G-3	Natalie Schumann / nschumann@castexenergy.com	(281) 878-0042	Commence production of EI 223 #G-3 from existing EI 224 "G"

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	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
NA	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	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
PIPELINE	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
INSTALLATION	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
NA	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
	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
NA	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)	118	5.6994	136.79	2	31	0.26	0.05	3.64	0.29	0.79	0.01	0.00	0.11	0.01	0.02
	RECIP.<600hp diesel (Compressor	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	2065	99.7395	2393.75	10	4	1.46	0.83	50.03	1.50	10.92	0.03	0.02	1.00	0.03	0.22
	TURBINE nat gas (compressor)	379	3609.596	86630.30	24	31		0.00	1.09	0.01	0.69		0.00	0.40	0.00	0.26
	RECIP.2 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 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	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00					0.00	
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	PROCESS VENT-		0		0	0				0.00					0.00	
	FUGITIVES-			0.0		0				0.00					0.00	
	GLYCOL STILL VENT-		0		0	0				0.00					0.00	
DRILLING	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2019 YEAR TOTAL							1.72	0.88	54.76	1.80	12.40	0.04	0.02	1.52	0.04	0.50
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											1831.50	1831.50	1831.50	1831.50	49172.32
	55.0															

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	CONTACT	PHONE	REMARKS
Castex Offshore, Inc.	Eugene Island	224	OCS-G 05504	G	G-3	Natalie Schumann / nschumann@castexenergy.com	(281) 878-0042	Commence production of EI 223 #G-3 from existing EI 224 "G"

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	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
NA	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	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
PIPELINE	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
INSTALLATION	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
NA	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
	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
NA	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)	118	5.6994	136.79	2	365	0.26	0.05	3.64	0.29	0.79	0.09	0.02	1.33	0.11	0.29
	RECIP.>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
	SUPPORT VESSEL diesel	2065	99.7395	2393.75	10	52	1.46	0.83	50.03	1.50	10.92	0.38	0.22	13.01	0.39	2.84
	TURBINE nat gas (compressor)	379	3609.596	86630.30	24	365		0.00	1.09	0.01	0.69		0.01	4.75	0.04	3.03
	RECIP.2 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 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	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00					0.00	
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	PROCESS VENT-		0		0	0				0.00					0.00	
	FUGITIVES-			0.0		0				0.00					0.00	
	GLYCOL STILL VENT-		0		0	0				0.00					0.00	
DRILLING	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2020	YEAR TOTAL						1.72	0.88	54.76	1.80	12.40	0.47	0.24	19.09	0.53	6.16
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											1831.50	1831.50	1831.50	1831.50	49172.32
	55.0															

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
Castex Offshore	Eugene Island	224	OCS-G 05504	G	G-3

Year	Emitted Substance				
	PM	SOx	NOx	VOC	CO
2019	0.04	0.02	1.52	0.04	0.50
2020	0.47	0.24	19.09	0.53	6.16
2021	0.47	0.24	19.09	0.53	6.16
2022	0.47	0.24	19.09	0.53	6.16
2023	0.47	0.24	19.09	0.53	6.16
2024	0.47	0.24	19.09	0.53	6.16
2025	0.47	0.24	19.09	0.53	6.16
2026	0.47	0.24	19.09	0.53	6.16
2027	0.47	0.24	19.09	0.53	6.16
2028	0.47	0.24	19.09	0.53	6.16
2029	0.47	0.24	19.09	0.53	6.16
2030	0.47	0.24	19.09	0.53	6.16
2031	0.47	0.24	19.09	0.53	6.16
2032	0.47	0.24	19.09	0.53	6.16
2033	0.47	0.24	19.09	0.53	6.16
2034	0.47	0.24	19.09	0.53	6.16
Allowable	1831.50	1831.50	1831.50	1831.50	49172.32

SECTION I
OIL SPILLS INFORMATION

(a) Oil Spill Response Planning

All proposed activities and facilities in this Plan/EP will be covered by the Regional Oil Spill Response Plan (OSRP) filed by Castex Offshore, Inc. (BOEM Company Number 02970), The most recent version of this plan was approved on December 20, 2018 (OSRP Control No. O-653) in accordance with 30 CFR 254.30(b)(2).

(a)(2)(ii) SPILL RESPONSE SITES

Primary Response Equipment Location	Preplanned Staging Location(s)
Houma, LA	Houma, LA & Fourchon, LA

(a)(2)(iii) OSRO INFORMATION

Company's primary equipment provider is Clean Gulf Associates (CGA). The Marine Spill Response Corporation's (MSRC) STARS network will provide closest available personnel, as well as an MSRC supervisor to operate the equipment.

(a)(2)(iv) WORST-CASE SCENARIO COMPARISON

Category	Regional OSRP WCD	DPCD WCD
Type of Activity	>10-mile Production	>10-mile Production
Facility Location (Area/Block)	WD 61	EI 224
Facility Designation	Platform A	Platform G / MODU
Distance to Nearest Shoreline (miles)	13 miles	55 miles
Volume Storage tanks (total) Uncontrolled blowout Pipelines Total Volume	49,218 bbls	0 0 0 **12,338 bbls**
Type of Oil(s) (Crude, condensate, diesel)	Crude	Condensate
API Gravity	38.7°	48°

The production WCD in this DOCD does not supersede the production WCD (> 10 miles) as provided in our Regional OSRP submitted on October 4, 2011.

Since Castex has the capability to respond to the worst-case spill scenario included in our Regional OSRP approved on December 20, 2018, and since the worst-case scenario determined for our DOCD does not replace the worst-case scenario in our Regional OSRP, Castex Offshore, Inc. hereby certifies that Castex 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 Plan/DOCD.

SECTION I - Continued
OIL SPILLS INFORMATION

(b) Spill Response Discussion for NEPA Analysis

No new or unusual technology is being used by Castex regarding spill control, cleanup or prevention.

The Oil spill response discussion is included under this section as ***Attachment I-1***.

(c) Modeling Report

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(d) Worst-Case Discharge Calculations and Assumptions

There are no drilling operations proposed under this DOCD. The Worst-case discharge (WCD) calculations and assumptions were previously provided and approved with Plan Control No. N-10063 and is included as ***Attachment I-2***.

Attachment I-1

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 12,338 barrels of condensate with an API gravity of 48°.

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 7% probability of impact to the shorelines of Cameron Parish, Louisiana within 10 days. Cameron Parish includes the east side of Sabine Lake, Sabine National Wildlife Refuge, Calcasieu Lake, Lacassine National Wildlife Refuge (inland) and Grand Lake. Cameron Parish also includes the area along the coastline from Sabine Pass to Big Constance Lake in Rockefeller Wildlife Refuge. This region is composed of open public beaches, marshlands and swamps. It serves as a habitat for numerous birds, finfish and other animals, including several rare, threatened and endangered species.

Response

Castex 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 49% or approximately 6,046 barrels of condensate would be evaporated/dispersed within 24 hours, with approximately 6,292 barrels remaining.

Natural Weathering Data: EI 224, Platform G	**Barrels of Oil**
WCD Volume	12,338
Less 49% natural evaporation/dispersion	6,046
Remaining volume	6,292

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.

Castex'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 134,808 barrels. Temporary storage associated with skimming equipment equals 5,098 barrels. If additional storage is needed, various storage barges with a total capacity 136,000 bbls may be mobilized and centrally located to provide temporary storage and minimize off-loading time. **Safety is first priority. Air monitoring will be accomplished and operations deemed safe prior to any containment/skimming attempts.**

If the spill went unabated, shoreline impact in 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 34,874 barrels. Temporary storage associated with skimming equipment equals 903 barrels. If additional storage is needed, various storage barges with a total capacity 40,000 bbls 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 Master Service Agreement with OMI Environmental will ensure access to 31,400 feet of 18" shoreline protection boom. **Figure 2** outlines individual times needed for procurement, load out, travel time to the site and deployment. Strategies would be based upon surveillance and real time trajectories that depict areas of potential impact given actual sea and weather conditions. Applicable Area Contingency Plans (ACPs), Geographic Response Plans (GRPs), and Unified Command (UC) will be consulted to ensure that environmental and special economic resources are correctly identified and prioritized to ensure optimal protection. Shoreline protection strategies depict the protection response modes applicable for oil spill clean-up operations. As a secondary resource, the State of Louisiana Initial Oil Spill Response Plan will be consulted as appropriate to provide detailed shoreline protection strategies and describe necessary action to keep the oil spill from entering Louisiana's coastal wetlands. The UC should take into consideration all appropriate items detailed in Tactics discussion of this Appendix. The UC and their personnel have the option to modify the deployment and operation of equipment to allow for a more effective response to site-specific circumstances. Castex's contract Incident Management Team has access to the applicable ACP(s) and GRP(s).

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

Initial Response Considerations

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

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

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

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

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

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

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

Offshore Response Actions

Equipment Deployment

Surveillance

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

Dispersant application assets

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

Containment boom

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

Oceangoing Boom Barge

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

In-situ Burn assets

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

Dedicated off-shore skimming systems
General

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

CGA HOSS Barge

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

CGA 95' Fast Response Vessels (FRVs)

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

CGA FRUs

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

T&T Koseq Skimming Systems

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

Storage Vessels

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

Vessels of Opportunity (VOO)

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

Adverse Weather Operations:

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

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

Maximization of skimmer-oil encounter rate

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

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

Maximize skimmer system efficiency

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

Recovered Oil Storage

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

Command, Control, and Communications (C^3)

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

On Water Recovery Group

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

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

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

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

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

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

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

Initial set-up and potential actions:

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

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

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

TF 1

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

TF 2

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

TF 3

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

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

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

TF 4

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

TF 5

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

TF 6

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

TF 7

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

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

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

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

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

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

Tactical Overview

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

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

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

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

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

Tactical Overview

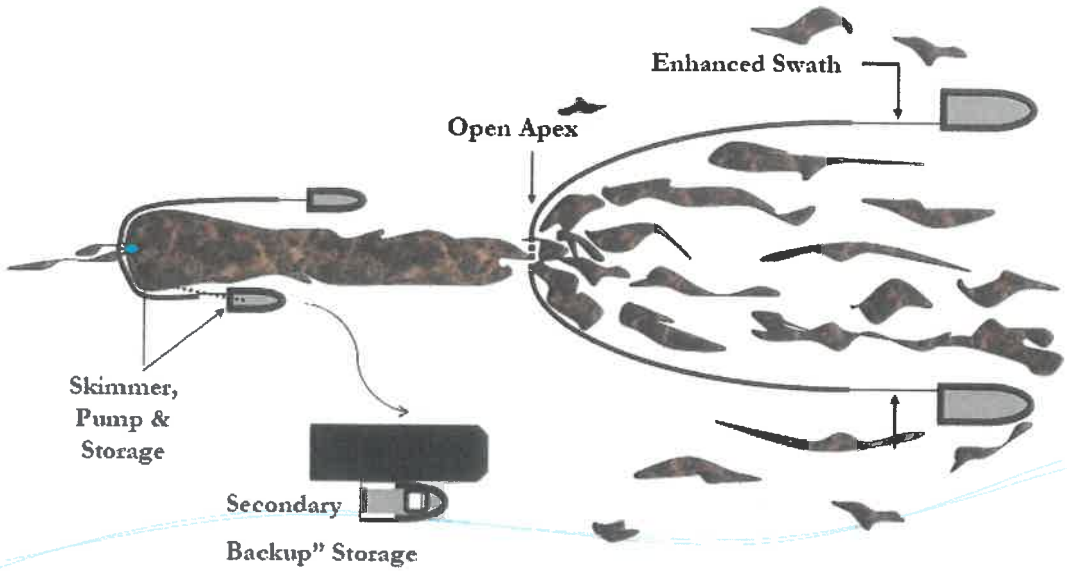
Mechanical Recovery – Deployed on large vessels of opportunity (VOO) the Koseq Rigid Sweeping Arms are high volume surge capacity deployed to increase recovery capacity at the source of a large oil spill in the offshore and outer nearshore environment of the Gulf of Mexico. They are highly mobile and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

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

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

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

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



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

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

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

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

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

Near Shore Response Actions

Timing

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

Considerations

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

Surveillance

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

Dispersant Use

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

Dedicated Near Shore skimming systems

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

VOO

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

Shoreline Protection Operations

Response Planning Considerations

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

Placement of boom

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

Beach Preparation - Considerations and Actions

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

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

Inland and Coastal Marsh Protection and Response Considerations and Actions

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

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

Decanting Strategy

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

CGA Equipment Limitations

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

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

Environmental Conditions in the GOM

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

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

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

FIGURE 1
TRAJECTORY BY LAND SEGMENT

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

Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%)
EI 224, Platform G *55 miles from shore*	G05504	C38	Jefferson, TX **Cameron, LA** Vermilion, LA Iberia, LA St. Mary, LA Terrebonne, LA Lafourche, LA Plaquemines, LA	1 7 5 2 1 6 1 1

WCD Scenario– <u>BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS</u> (55 miles from shore)
6,292 bbls of condensate (Volume considering natural weathering)
API Gravity 48°

FIGURE 2 – Equipment Response Time to EI 224, Platform G

Dispersants/Surveillance

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

Offshore Response

Offshore Equipment Pre-Determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
CGA											
HOSS Barge	76285	4000	3 Tugs	12	Harvey	6	0	12	10	2	30
95' FRV	22885	249	NA	6	Leeville	2	0	2	5	1	10
95' FRV	22885	249	NA	6	Vermilion	2	0	3	3	1	9
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	8	0	4	14	2	28
Enterprise Marine Services LLC (Available through contract with CGA)											
CTCo 2606	NA	20000	1 Tug	6	Amelia	33.5	0	6	7.5	1	48
CTCo 2607	NA	23000	1 Tug	6	Amelia	33.5	0	6	7.5	1	48
CTCo 2608	NA	23000	1 Tug	6	Amelia	33.5	0	6	7.5	1	48
CTCo 2609	NA	23000	1 Tug	6	Amelia	33.5	0	6	7.5	1	48
CTCo 5001	NA	47000	1 Tug	6	Amelia	33.5	0	6	7.5	1	48

Staging Area: Fourchon

Offshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Site	Hrs to Deploy	Total Hrs
CGA											
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Morgan City	2	6	3	9	1	21
FRU (2) + 100 bbl Tank (4)	8502	400	2 Utility	12	Leeville	2	6	2	9	1	20

Nearshore Response

Nearshore Equipment Pre-determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
CGA											
46' FRV	15257	65	NA	4	Lake Charles	2	0	2	2.5	1	7.5
Enterprise Marine Services LLC (Available through contract with CGA)											
CTCo 2604	NA	20000	1 Tug	6	Amelia	26	0	6	15	1	48
CTCo 2605	NA	20000	1 Tug	6	Amelia	26	0	6	15	1	48

Staging Area: Cameron

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

Staging Area: Cameron

Shoreline Protection Boom	VOO	Persons Req.	Storage/Warehouse Location	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment Site	Hrs to Deploy	Total Hrs
OMI Environmental (available through MSA)									
12,500' 18" Boom	6 Crew	12	New Iberia, LA	1	1	4	2	3	11
6,400' 18" Boom	3 Crew	6	Houston, TX	1	1	4	2	3	11
3,500' 18" Boom	2 Crew	4	Port Arthur, TX	1	1	2	2	3	9
8,000' 18" Boom	3 Crew	6	Port Allen, LA	1	1	5	2	3	12
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 (24)	NA	NA	NA	2	Harvey	2	2	7	1	2	14
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	2	2	5	1	2	12
Bird Scare Guns (12)	NA	NA	NA	2	Aransas Pass	2	2	9.5	1	2	16.5
Bird Scare Guns (48)	NA	NA	NA	2	Lake Charles	2	2	2	1	2	9
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	7	1	2	14

Response Asset	Total
Offshore EDRC	134,808
Offshore Recovered Oil Capacity	141,098
Nearshore / Shallow Water EDRC	34,874
Nearshore / Shallow Water Recovered Oil Capacity	40,903

Attachment I-2

SECTION J
ENVIRONMENTAL MONITORING INFORMATION

(a) Monitoring Systems

There are no environmental monitoring systems currently in place or planned for the proposed activities.

(b) Incidental Takes

There is no reason to believe that any of the endangered species or marine mammals as listed in the ESA will be "taken" as a result of the operations proposed under this plan.

To April 9, 2019, it has been documented that the use of explosives and/or seismic devices can affect marine life. Operations proposed in this plan will not be utilizing either of these devices.

(c) Flower Garden Banks National Marine Sanctuary

Eugene Island Blocks 223/224 are not located in the Flower Garden Banks National Marine Sanctuary; therefore, the requested information is not required in this Plan/DOCD.

SECTION K
LEASE STIPULATIONS INFORMATION

(a) Lease Stipulations

The proposed activities provided for in this Plan/DOCD are subject to the following stipulations attached to Leases OCS-G 36360 & 05504, Eugene Island Blocks 223 & 224:

Military Warning Area (MWA)

Eugene Island Blocks 223 & 224 are located within designated MWA-W-59 BC. The Naval Air Station will be contacted to coordinate and control the electromagnetic emissions during the proposed operations.

Marine Protected Species

Lease Stipulation No. 4 is meant to reduce the potential taking of marine protected species. Castex will operate in accordance with JOINT NTL 2012-G01, to minimize the risk of vessel strikes to protected species and report observations of injured or dead protected species, and the prevention of intentional and/or accidental introduction of debris into the marine environment.

(b) Special Conditions

There are no special conditions associated with the proposed activities proposed for in this Plan/DOCD for Leases OCS-G 36360 & 05504, Eugene Island Blocks 223 & 224.

SECTION L
ENVIRONMENTAL MITIGATION MEASURES INFORMATION

(a) Measures Taken to Avoid, Minimize, and Mitigate Impacts

The State of Florida is not an affected State for the activities proposed in this plan; therefore, pursuant to NTL 2008-G04, this information is not required.

(b) Incidental Takes

There are no operations proposed in this plan that will be using explosives or seismic instruments, therefore there is no reason to believe that a protected species may be incidentally taken by the proposed activities, however, Castex 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 ESA as a result of the operations conducted herein:

- BSEE NTL 2015-G03, "Marine Trash and Debris Awareness and Elimination"
- BSEE NTL 2016-G01, "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting
- BOEM NTL 2016-G02, "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program"

SECTION M
RELATED FACILITIES AND OPERATIONS INFORMATION

(a) Related OCS Facilities and Operations

The Eugene Island Block 223, Well No. G003 will be drilled from our existing surface location at Platform G (Complex ID No. 2414) located in Eugene Island Block 224, Lease OCS-G 05504. There are no changes to existing field development under this plan.

(b) Transportation System

Oil and Gas production is exported via existing lease pipelines to existing pipeline delivery systems. There will be no changes to the existing field infrastructure under this plan

(c) Produced Liquid Hydrocarbons Transportation Vessels

There will not be any transfers of liquid hydrocarbons, including well test fluids, other than via pipeline for the activities proposed for in this plan.

SECTION N
SUPPORT VESSELS AND AIRCRAFT INFORMATION

(a) General
The following list provides information regarding the vessels and aircraft Castex will use to support our proposed production activities:

Type	*Maximum Fuel Tank Capacity*	*Maximum Number in Area at Any Time*	*Trip Frequency or Duration*
Service (Field) Boat	12,500 gal	1	As needed
Helicopter	127 gal	1	Daily

The most practical, direct route from the shorebase as permitted by weather and traffic conditions will be utilized.

(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	1500 bbls	Weekly	From shorebase to EI 224 then back to shorebase.

(c) Drilling Fluid Transportation
The State of Florida is not an affected State for the activities proposed for in this plan; therefore, pursuant to NTL No. 2008-G04, this information is not required.

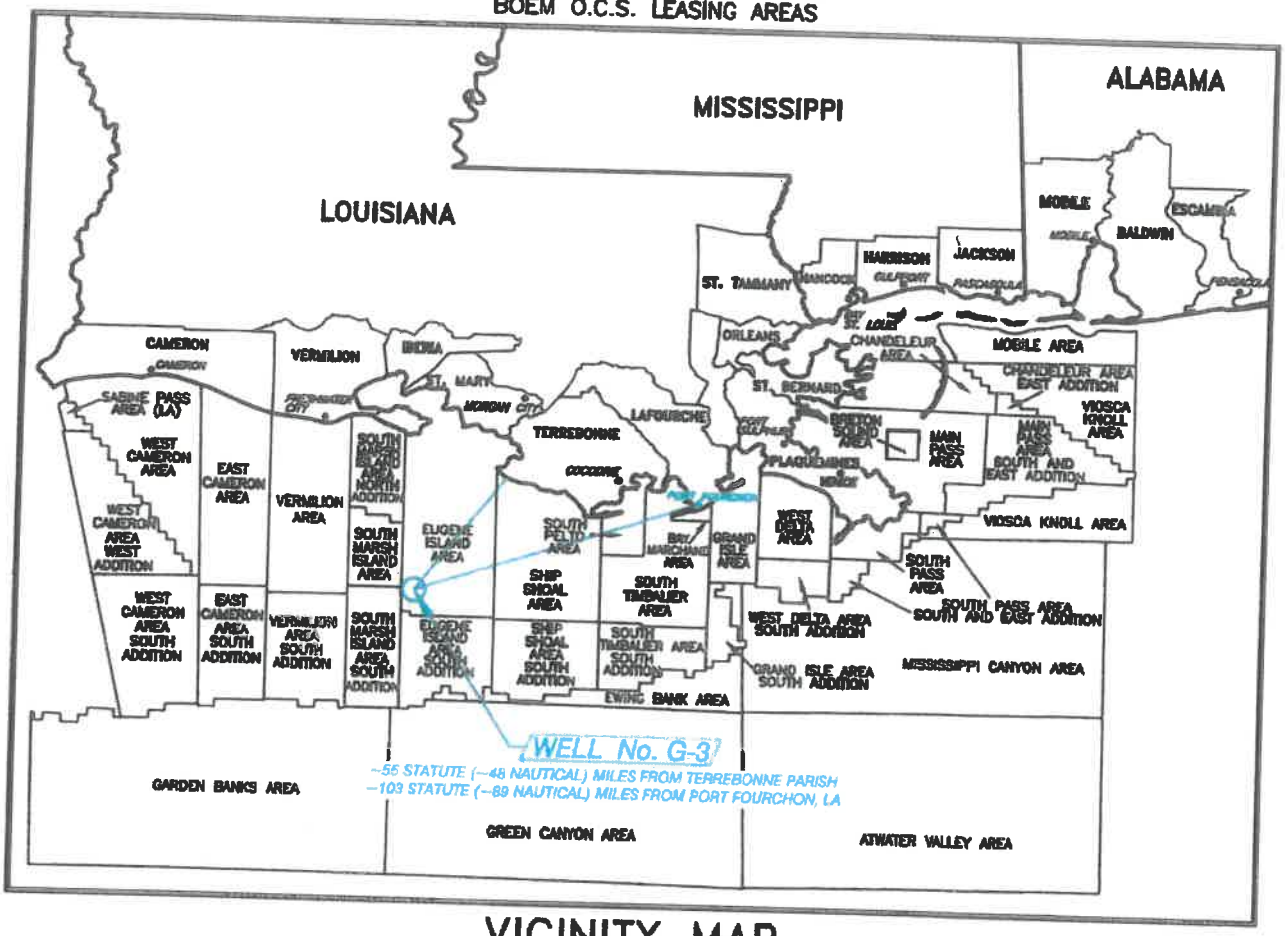
(d) Solid and Liquid Waste Transportation
The following table lists types of wastes and the amounts that will be generated by the activities proposed in this plan and provides information on transportation methods used to transport the wastes to storage or disposal facilities:

Type of Waste Approx. Composition	*Total Amount*	*Name/Location*	*Rate*	*Transportation Method*
Trash & Debris	500 cu/ft.	Newpark Environmental Services, Intracoastal, LA	Weekly	Trash from well site is stored in bins at dock then barged to disposal facility

(e) Vicinity Map
A vicinity map showing the location of the activities proposed herein relative to the shoreline with the distance of the proposed activities from the shoreline and the primary route of the support vessels and aircraft that will be used when traveling between the onshore support facilities and the drilling unit is included as ***Attachment N-1***.

Attachment N-1

LOUISIANA GULF COAST INDEX
BOEM O.C.S. LEASING AREAS



VICINITY MAP

COORDINATE TO NEAREST POINT ON SHORELINE X = 2,017,173 Y = 211,496

THE DISTANCES SHOWN HEREON ARE FROM THE PROPOSED WELL TO THE NEAREST COASTLINE POINT AS OBTAINED FROM NOAA, ENTITLED NOAA MEDIUM RESOLUTION SHORELINE. <HTTP://SHORELINE.NOAA.GOV/DATA/DATASHEETS/MEDRES.HTML>.

SHEET 1 OF 1

DATUM: NAD 27
SPHEROID: CLARKE 1866
PROJECTION: LAMBERT
ZONE: LOUISIANA SOUTH

Echo OFFSHORE LLC
36499 Perkins Road
Prairieville, Louisiana 70769
Tel: 225-673-2163

CASTEX

CASTEX OFFSHORE, INC.

EXPLORATION PLAT

PROPOSED WELL No. G-3
OCS-G 36360 BLOCK 223
WITH SURFACE LOCATION IN BLOCK 224
EUGENE ISLAND AREA
GULF OF MEXICO

DRAWN BY:	DATE:	CHECKED BY:	DRAWING No.:
RJN	2/7/2019	MEK	19-006 EXP
REV. DATE:	REV. No.:	SCALE:	JOB No.:
		N.T.S.	19-006-32

SECTION O
ONSHORE SUPPORT FACILITIES INFORMATION

(a) General
Castex proposes to utilize the following existing onshore base for support:

Name	*Location*	*Existing/New/Modified*
EPS	Port Fourchon, Louisiana	Existing

(b) Support Base Construction or Expansion
There will be no new construction of an onshore support base, nor will we expand the existing shorebase because of the operations proposed in this Plan/EP.

(c) Support Base Construction or Expansion Timetable
According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(d) Waste Disposal
The table below provides information on the shorebase facilities that will be used to store and dispose of any solid and liquid wastes generated by the proposed activities:

Name/Location of Facility	*Type of waste*	*Amount*	*Rate*	*Disposal Method*
Newpark, Environmental Services Intracoastal, LA	Non-hazardous Liquid: Workover fluid	100 lbs.	2 lbs./day	Transport by boat in cutting bins to shorebase; then barge to disposal facility to be injected

All waste shipments received by Newpark Environmental facilities from Castex are placed into barges and shipped to one of Newpark's facilities. None of the waste is shipped to brokers, third party companies, recycled or disposed at landfills. Newpark retains waste manifest records documenting all the above.

SECTION P
COASTAL ZONE MANAGEMENT (CZMA) INFORMATION

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

(a) Consistency Certification

A certificate of Coastal Zone Management for the States of Louisiana and Mississippi are enclosed as ***Attachment P-1***.

(b) Other Information

Castex has considered all of Louisiana's enforceable policies and certifies the consistency for the proposed operations.

Relevant enforceable policies were considered in certifying consistency for Louisiana. A certificate of Coastal Zone Management Consistency for the state of Louisiana is enclosed.

Attachment P-1

SECTION Q

ENVIRONMENTAL IMPACT ANALYSIS (EIA)

In accordance with the requirements of 30 CFR 250.227 and 250.261 an Environmental Impact Analysis (EIA) is included as ***Attachment Q-1***.

COASTAL ZONE MANAGEMENT
CONSISTENCY CERTIFICATION

STATE OF LOUISIANA

INITIAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

EUGENE ISLAND BLOCK 223

OCS-G 36360

The proposed activities described in detail in this OCS Plan will comply with all enforceable policies as Louisiana's approved Coastal Management Program and will be conducted in a manner consistent with such program

Castex Offshore, Inc.
Lessee or Operator

Certifying Official

June 24, 2019

Attachment Q-1

Castex Offshore, Inc. (Castex)

Initial Development Operations Coordination Document
Eugene Island Block 224
OCS-G 05504

(A) IMPACT PRODUCING FACTORS

ENVIRONMENTAL IMPACT ANALYSIS WORKSHEET

Environment Resources	Impact Producing Factors (IPFs) Categories and Examples Refer to recent GOM OCS Lease Sale EIS for a more complete list of IPFs					
	Emissions (air, noise, light, etc.)	Effluents (muds, cutting, other discharges to the water column or seafloor)	Physical disturbances to the seafloor (rig or anchor emplacements, etc.)	Wastes sent to shore for treatment or disposal	Accidents (e.g., oil spills, chemical spills, H_2S releases)	Discarded Trash & Debris
Site-specific at Offshore Location						
Designated topographic features		(1)	(1)		(1)	
Pinnacle Trend area live bottoms		(2)	(2)		(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Benthic communities			(4)			
Water quality			X		X	
Fisheries			X		X	
Marine Mammals	X(8)				X(8)	X
Sea Turtles	X(8)				X(8)	X
Air quality	X(9)					
Shipwreck sites (known or potential)			(7)			
Prehistoric archaeological sites			X(7)		X	
Vicinity of Offshore Location						
Essential fish habitat			X		X(6)	
Marine and pelagic birds	X				X	X
Public health and safety					(5)	
Coastal and Onshore						
Beaches					X(6)	X
Wetlands					X(6)	
Shore birds and coastal nesting birds					X(6)	X
Coastal wildlife refuges					X	
Wilderness areas					X	

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:
   - 4-mile zone of the Flower Garden Banks, or the 3-mile zone of Stetson Bank;
   - 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;
   - Essential Fish Habitat (EFH) criteria of 500 ft. from any no-activity zone; or
   - Proximity of any submarine bank (500 ft. buffer zone) with relief greater than 2 meters that is not protected by the Topographic Features Stipulation attached to an OCS lease.
2) Activities with any bottom disturbance within an OCS lease block protected through the Live Bottom (Pinnacle Trend) Stipulation attached to an OCS lease.
3) Activities within any Eastern Gulf OCS block where seafloor habitats are protected by the Live Bottom (Low-Relief) Stipulation attached to an OCS lease.
4) Activities on blocks designated by the BOEM as being in water depths 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 a 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.

(B) ANALYSIS

Site-Specific at Eugene Island Block 224

Proposed operations consist of the commencement of production of EI 223 #G-3 from the existing surface location in EI 224 "G".

1. Designated Topographic Features

Potential IPFs on topographic features include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: Eugene Island Block 224 is 28 miles from the closest designated Topographic Features Stipulation Block (Fishnet Bank); therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to benthic organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 m depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on corals. Because the crests of topographic features in the Northern Gulf of Mexico are found below 10 m, no oil from a surface spill could reach their sessile biota. Oil from a subsurface spill is not applicable due to the distance of these blocks from a topographic area. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

There are no other IPFs (including emissions, effluents and wastes sent to shore for disposal) from the proposed activities, which could impact topographic features.

2. Pinnacle Trend Area Live Bottoms

Potential IPFs on pinnacle trend area live bottoms include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: Eugene Island Block 224 is 203 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills have the potential to foul benthic communities and cause lethal and sublethal effects on live bottom organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 m depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine organisms. Oil from a

subsurface spill is not applicable due to the distance of these blocks from a live bottom (pinnacle trend) area. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

There are no other IPFs (including emissions, effluents and wastes sent to shore for disposal) from the proposed activities which could impact a live bottom (pinnacle trend) area.

3. Eastern Gulf Live Bottoms

Potential IPFs on Eastern Gulf live bottoms include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: Eugene Island Block 224 is not located in an area characterized by the existence of live bottoms, and this lease does not contain a Live-Bottom Stipulation requiring a photo documentation survey and survey report.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to live bottom organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 m depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine invertebrates. Oil from a subsurface spill is not applicable due to the distance of these blocks from a live bottom area. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

There are no other IPFs (including emissions, effluents and wastes sent to shore for disposal) from the proposed activities which could impact an Eastern Gulf live bottom area.

4. Benthic Communities

There are no IPFs (including emissions, physical disturbances to the seafloor, wastes sent to shore for disposal, or accidents) from the proposed activities that could cause impacts to benthic communities.

Operations proposed in this plan are in water depths of 138 feet. High-density benthic communities are found only in water depths greater than 984 feet (300 meters); therefore, Castex's proposed operations in Eugene Island Block 224 would not cause impacts to benthic communities.

5. Water Quality

IPFs that could result in water quality degradation from the proposed operations in Eugene Island Block 224 include disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: Bottom area disturbances resulting from the emplacement of drill rigs, the drilling of wells and the installation of platforms and pipelines would increase water-column turbidity and re-suspension of any accumulated pollutants, such as trace metals and excess nutrients. This would cause short-lived impacts on water quality conditions in the immediate vicinity of the emplacement operations. There are no bottom disturbing activities (drilling, emplacement or removal of structures, etc.) associated with the proposed operations in this plan.

Accidents: Oil spills have the potential to alter offshore water quality; however, it is unlikely that an accidental surface or subsurface spill would occur from the proposed activities. Between 1980 and 2000, OCS operations produced 4.7 billion barrels of oil and spilled only 0.001 percent of this oil, or 1 bbl for every 81,000 bbl produced. The spill risk related to a diesel spill from drilling operations is even less. Between 1976 and 1985, (years for which data were collected), there were 80 reported diesel spills greater than one barrel associated with drilling activities. Considering that there were 11,944 wells drilled, this is a 0.7 percent probability of an occurrence. If a spill were to occur, the water quality of marine waters would be temporarily affected by the dissolved components and small oil droplets. Dispersion by currents and microbial degradation would remove the oil from the water column and dilute the constituents to background levels. Historically, changes in offshore water quality from oil spills have only been detected during the life of the spill and up to several months afterwards. Most of the components of oil are insoluble in water and therefore float. The activities proposed in this plan will be covered by Castex's Regional Oil Spill Response Plan (refer to information submitted in **Appendix I**).

There are no other IPFs (including emissions, effluents and wastes sent to shore for disposal) from the proposed activities which could cause impacts to water quality.

6. Fisheries

IPFs that could cause impacts to fisheries as a result of the proposed operations in Eugene Island Block 224 include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: The emplacement of a structure or drilling rig results in minimal loss of bottom trawling area to commercial fishermen. Pipelines cause gear conflicts which result in losses of trawls and shrimp catch, business downtime, and vessel damage. Most financial losses from gear conflicts are covered by the Fishermen's Contingency Fund (FCF). The emplacement and removal of facilities are not expected to cause significant adverse impacts to fisheries. There are no bottom disturbing activities (drilling, emplacement or removal of structures, etc.) associated with the proposed operations in this plan.

Accidents: An accidental oil spill has the potential to cause some detrimental effects on fisheries; however, it is unlikely that such an event would occur from the proposed activities (refer to **Item 5**, Water Quality). The effects of oil on mobile adult finfish or shellfish would likely be sublethal and the extent of damage would be reduced to the capacity of adult fish and shellfish to avoid the spill, to metabolize hydrocarbons, and to excrete both metabolites and parent compounds. The

activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

There are no IPFs from emissions, effluents or wastes sent to shore for disposal from the proposed activities which could cause impacts to fisheries.

7. Marine Mammals

GulfCet II studies revealed that cetaceans of the continental shelf and shelf-edge were almost exclusively bottlenose dolphin and Atlantic spotted dolphin. Squid eaters, including dwarf and pygmy killer whale, Risso's dolphin, rough-toothed dolphin, and Cuvier's beaked whale, occurred most frequently along the upper slope in areas outside of anticyclones. IPFs that could cause impacts to marine mammals as a result of the proposed operations in Eugene Island Block 224 include emissions, discarded trash and debris, and accidents.

Emissions: Noises from drilling activities, support vessels and helicopters may elicit a startle reaction from marine mammals. This reaction may lead to disruption of marine mammals' normal activities. Stress may make them more vulnerable to parasites, disease, environmental contaminants, and/or predation (Majors and Myrick, 1990). There is little conclusive evidence for long-term displacements and population trends for marine mammals relative to noise.

Discarded trash and debris: Both entanglement in, and ingestion of debris have caused the death or serious injury of marine mammals (Laist, 1997; MMC, 1999). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to substantially harm marine mammals. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), "Think About It" (*previously "All Washed Up: The Beach Litter Problem"*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that

emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

Accidents: Collisions between support vessels and cetaceans would be unusual events, however should one occur, death or injury to marine mammals is possible. Contract vessel operators can avoid marine mammals and reduce potential deaths by maintaining a vigilant watch for marine mammals and maintaining a safe distance when they are sighted. Vessel personnel should use a Gulf of Mexico reference guide to help identify the twenty-one species of whales and dolphins, and the single species of manatee that may be encountered in the Gulf of Mexico OCS. Vessel personnel must report sightings of any injured or dead protected marine mammal species immediately, regardless of whether the injury or death is caused by their vessel, to the NMFS Southeast Marine Mammal Stranding Hotline at 1-877-433-8299 (http://www.nmfs.noaa.gov/pr/health/report.htm#southeast). Any injured or dead protected species should also be reported to takereport.nmfsser@noaa.gov. In addition, if the injury or death was caused by a collision with a contract vessel, the BOEM must be notified within 24 hours of the strike by email to protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

Oil spills have the potential to cause sublethal oil-related injuries and spill-related deaths to marine mammals. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to changes in cetacean behavior and/or distribution, thereby causing additional stress to the animals. The effect of oil dispersants on cetaceans is not known. The acute toxicity of oil dispersant chemicals included in Castex's OSRP is considered to be low when compared with the constituents and fractions of crude oils and diesel products. The activities proposed in this plan will be covered by Castex's OSRP (refer to information submitted in accordance with **Appendix I**).

There are no other IPFs (including physical disturbances to the seafloor and effluents) from the proposed activities which could impact marine mammals.

8. Sea Turtles

IPFs that could cause impacts to sea turtles as a result of the proposed operations include emissions, discarded trash and debris, and accidents. GulfCet II studies sighted most loggerhead, Kemp's ridley and leatherback sea turtles over shelf waters. Historically these species have been sighted up to the shelf's edge. They appear to be more abundant east of the Mississippi River than they are west of the river (Fritts et al., 1983b; Lohoefener et al., 1990). Deep waters may be used by all species as a transitory habitat.

Emissions: Noise from drilling activities, support vessels, and helicopters may elicit a startle reaction from sea turtles, but this is a temporary disturbance.

Discarded trash and debris: Both entanglement in, and ingestion of, debris have caused the death or serious injury of sea turtles (Balazs, 1985). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to substantially harm sea turtles. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), "Think About It" (*previously "All Washed Up: The Beach Litter Problem"*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

Accidents: Collisions between support vessels and sea turtles would be unusual events, however, should one occur, death or injury to sea turtles is possible. Contract vessel operators can avoid sea turtles and reduce potential deaths by maintaining a vigilant watch for sea turtles and maintaining a safe distance when they are sighted. Vessel crews should use a reference guide to help identify the five species of sea turtles that may be encountered in the Gulf of Mexico OCS. Vessel crews must report sightings of any injured or dead protected sea turtle species immediately, regardless of whether the injury or death is caused by their vessel, to the State Coordinators for the Sea Turtle Stranding and Salvage Network (STSSN) at http://www.sefsc.noaa.gov/species/turtles/stranding_coordinators.htm (phone numbers vary by state). Any injured or dead protected species should also be reported to takereport.nmfsser@noaa.gov. In addition, if the injury or death was caused by a collision with a contract vessel, the BOEM must be notified within 24 hours of the strike by email to protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

All sea turtle species and their life stages are vulnerable to the harmful effects of oil through direct contact or by fouling of their food. Exposure to oil can be fatal, particularly to juveniles and hatchlings. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to the possibility of collisions with sea turtles. The activities proposed in this plan will be covered by Castex's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Appendix I**).

There are no other IPFs (including physical disturbances to the seafloor and effluents) from the proposed activities which could impact sea turtles.

9. Air Quality

The projected air emissions identified in **Appendix H** are not expected to affect the OCS air quality primarily due to distance to the shore or to any Prevention of Significant Deterioration Class I air quality area such as the Breton Wilderness Area. Eugene Island Block 224 is beyond the 200-kilometer (124 mile) buffer for the Breton Wilderness Area and is 55 miles from the coastline. Therefore, no special mitigation, monitoring, or reporting requirements apply with respect to air emissions.

Accidents and blowouts can release hydrocarbons or chemicals, which could cause the emission of air pollutants. However, these releases would not impact onshore air quality because of the prevailing atmospheric conditions, emission height, emission rates, and the distance of Eugene Island Block 224 from the coastline. There are no other IPFs (including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal) from the proposed activities which could impact air quality.

10. Shipwreck Sites (known or potential)

IPFs that could impact known or unknown shipwreck sites as a result of the proposed operations in Eugene Island Block 224 include accidents and disturbances to the seafloor. Eugene Island Block 224 is not located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks. Castex will report to BOEM the discovery of any evidence of a shipwreck and make every reasonable effort to preserve and protect that cultural resource. There are no other IPFs (including emissions, effluents, wastes sent to shore for treatment or disposal, or accidents) from the proposed activities which could impact shipwreck sites.

Accidents: An accidental oil spill has the potential to cause some detrimental effects to shipwreck sites if the release were to occur subsea. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Castex's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Appendix I**).

There are no other IPFs (including emissions, effluents, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to shipwreck sites.

11. Prehistoric Archaeological Sites

IPFs that could cause impacts to prehistoric archaeological sites as a result of the proposed operations in Eugene Island Block 224 are disturbances to the seafloor and accidents (oil spills).

Disturbances to the seafloor: Eugene Island Block 224 is located inside the Archaeological Prehistoric high probability lines. Castex will report to BOEM the discovery of any object of prehistoric archaeological significance and make every reasonable effort to preserve and protect that cultural resource.

Accidents: An accidental oil spill has the potential to cause some detrimental effects to prehistoric archaeological sites if the release were to occur subsea. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Castex's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Appendix I**).

There are no other IPFs (including emissions, effluents, wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to prehistoric archaeological sites.

Vicinity of Offshore Location

1. Essential Fish Habitat (EFH)

IPFs that could cause impacts to EFH as a result of the proposed operations in Eugene Island Block 224 include physical disturbances to the seafloor and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of Mexico.

Physical disturbances to the seafloor: The Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf Pinnacle Trend Stipulation would prevent most of the potential impacts on live-bottom communities and EFH from bottom disturbing activities (e.g., anchoring, structure emplacement and removal). There are no bottom disturbing activities associated with the proposed operations in this plan.

Accidents: An accidental oil spill has the potential to cause some detrimental effects on EFH. Oil spills that contact coastal bays and estuaries, as well as OCS waters when pelagic eggs and larvae are present, have the greatest potential to affect fisheries. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

There are no other IPFs (including emissions, effluents or wastes sent to shore for treatment or disposal) from the proposed activities which could impact essential fish habitat.

2. Marine and Pelagic Birds

IPFs that could impact marine birds as a result of the proposed activities include air emissions, accidental oil spills, and discarded trash and debris from vessels and the facilities.

Emissions: Emissions of pollutants into the atmosphere from the proposed activities are far below concentrations which could harm coastal and marine birds.

Accidents: An oil spill would cause localized, low-level petroleum hydrocarbon contamination. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Marine and pelagic birds feeding at the spill location may experience chronic, nonfatal, physiological stress. It is expected that few, if any, coastal and marine birds would actually be affected to that extent. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

Discarded trash and debris: Marine and pelagic birds could become entangled and snared in discarded trash and debris, or ingest small plastic debris, which can cause permanent injuries and death. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), "Think About It" (*previously "All Washed Up: The Beach Litter Problem"*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE. Debris, if any, from these proposed activities will seldom interact with marine and pelagic birds; therefore, the effects will be negligible.

There are no other IPFs (including effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities which could impact marine and pelagic birds.

3. Public Health and Safety Due to Accidents.

There are no IPFs (emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal or accidents, including an accidental H_2S release) from the proposed activities which could cause impacts to public health and safety. In accordance with NTL No.'s 2008-G04, 2009-G27, and 2009-G31, sufficient information is included in **Appendix D** to justify our request that our proposed activities be classified by BSEE as H_2S absent.

Coastal and Onshore

1. Beaches

IPFs from the proposed activities that could cause impacts to beaches include accidents (oil spills) and discarded trash and debris.

Accidents: Oil spills contacting beaches would have impacts on the use of recreational beaches and associated resources. Due to the distance from shore (55 miles) and the response capabilities that would be implemented, no significant adverse impacts are expected. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

Discarded trash and debris: Trash on the beach is recognized as a major threat to the enjoyment and use of beaches. There will only be a limited amount of marine debris, if any, resulting from the proposed activities. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), "Think About It" (*previously "All Washed Up: The Beach Litter Problem"*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities which could impact beaches.

2. Wetlands

IPFs from the proposed activities that could cause impacts to wetlands include accidents (oil spills) and discarded trash and debris.

Accidents: Oil spills could cause impacts to wetlands; however, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Due to the distance from shore (55 miles) and the response capabilities that would be implemented, no impacts are expected. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

Discarded trash and debris: There will only be a limited amount of marine debris, if any, resulting from the proposed activities. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), "Think About It" (*previously "All Washed Up: The Beach Litter Problem"*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities which could impact wetlands.

3. Shore Birds and Coastal Nesting Birds

Accidents: Oil spills could cause impacts to shore birds and coastal nesting birds. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Given the distance from shore (55 miles) and the response capabilities that would be implemented, no impacts are expected. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

Discarded trash and debris: Coastal and marine birds are highly susceptible to entanglement in floating, submerged, and beached marine debris: specifically plastics. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by

maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), "Think About It" (*previously "All Washed Up: The Beach Litter Problem"*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to shore birds and coastal nesting birds.

4. Coastal Wildlife Refuges

Accidents: An accidental oil spill from the proposed activities could cause impacts to coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Due to the distance from shore (55 miles) and the response capabilities that would be implemented, no impacts are expected. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I**).

Discarded trash and debris: Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), "Think About It" (*previously "All Washed Up: The Beach Litter Problem"*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that

emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to coastal wildlife refuges.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to coastal wildlife refuges.

5. Wilderness Areas

Accidents: An accidental oil spill from the proposed activities could cause impacts to wilderness areas. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Due to the distance from the nearest designated Wilderness Area (164 miles) and the response capabilities that would be implemented, no significant adverse impacts are expected. The activities proposed in this plan will be covered by Castex's Regional OSRP (refer to information submitted in **Appendix I).**

Discarded trash and debris: Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). Castex will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), "Think About It" (*previously "All Washed Up: The Beach Litter Problem"*). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Castex management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

There are no other IPFs (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to wilderness areas.

6. Other Environmental Resources Identified

There are no other environmental resources identified for this impact assessment.

(C) IMPACTS ON PROPOSED ACTIVITIES

The site–specific environmental conditions have been taken into account for the proposed activities. No impacts are expected on the proposed activities from site-specific environmental conditions.

(D) ENVIRONMENTAL HAZARDS

During the hurricane season, June through November, the Gulf of Mexico is impacted by an average of ten tropical storms (39-73 mph winds), of which six become hurricanes (> 74 mph winds). Due to its location in the gulf, Eugene Island Block 224 may experience hurricane and tropical storm force winds, and related sea currents. These factors can adversely impact the integrity of the operations covered by this plan. A significant storm may present physical hazards to operators and vessels, damage exploration or production equipment, or result in the release of hazardous materials (including hydrocarbons). Additionally, the displacement of equipment may disrupt the local benthic habitat and pose a threat to local species.

The following preventative measures included in this plan may be implemented to mitigate these impacts:

1. Platform / structure Installation
   Operator will not conduct platform / structure installation operations during Tropical Storm or Hurricane threat.

2. Pipeline Installation
   Operator will not conduct pipeline installation operations during Tropical Storm or Hurricane threat.

(E) ALTERNATIVES

No alternatives to the proposed activities were considered to reduce environmental impacts.

(F) MITIGATION MEASURES

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

(G) CONSULTATION

No agencies or persons were consulted regarding potential impacts associated with the proposed activities. Therefore, a list of such entities has not been provided.

(H) PREPARER(S)

Jami Christley
J. Connor Consulting, Inc.
19219 Katy Freeway, Suite 200
Houston, Texas 77094
(281) 578-3388
jami.christley@jccteam.com

(I) References

Authors:

American Petroleum Institute (API). 1989. Effects of offshore petroleum operations on cold water marine mammals: a literature review. Washington, DC: American Petroleum Institute. 385 pp.

Balazs, G.H. 1985. Impact of ocean debris on marine turtles: entanglement and ingestion. In: Shomura, R.S. and H.O. Yoshida, eds. Proceedings, Workshop on the Fate and Impact of Marine Debris, 26-29 November 1984, Honolulu, HI. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-SWFC-54. Pp 387-429.

Burke, C.J. and J.A. Veil. 1995. Potential benefits from regulatory consideration of synthetic drilling muds. Environmental Assessment Division, Argonne National Laboratory, ANL/EAD/TM-43.

Daly, J.M. 1997. Controlling the discharge of synthetic-based drilling fluid contaminated cuttings in waters of the United States. U.S. Environmental Protection Agency, Office of Water. Work Plan, June 24, 1997.

Hansen, D.J. 198l. The relative sensitivity of seabird populations in Alaska to oil pollution. U.S. Dept. of the Interior, Bureau of Land Management, Alaska OCS Region, Anchorage. BLM-YK-ES-81-006-1792.

Laist, D.W. 1997. Impacts of marine debris: entanglement of marine life in marine debris including a comprehensive list of species with entanglement and ingestion records. In: Coe, J.M. and D.B. Rogers, eds. Marine debris: sources, impacts, and solutions. New York, NY: Springer-Verlag. Pp. 99-139.

Majors, A.P. and A.C. Myrick, Jr. 1990. Effects of noise on animals: implications for dolphins exposed to seal bombs in the eastern tropical Pacific purse-seine fishery–an annotated bibliography. NOAA Administrative Report LJ-90-06.

Marine Mammal Commission. 1999. Annual report to Congress – 1998.

Piatt, J.F., C.J. Lensink, W. Butler, M. Kendziorek, and D.R. Nysewander. 1990. Immediate impact of the Exxon Valdez oil spill on marine birds. The Auk. 107 (2): 387-397.

Vauk, G., E. Hartwig, B. Reineking, and E. Vauk-Hentzelt. 1989. Losses of seabirds by oil pollution at the German North Sea coast. Topics in Marine Biology. Ros, J.D, ed. Scient. Mar. 53 (2-3): 749-754.

Vermeer, K. and R. Vermeer, 1975 Oil threat to birds on the Canadian west coast. The Canadian Field-Naturalist. 89:278-298.

Although not cited, the following were utilized in preparing this EIA:

- Hazard Surveys
- BOEM EIS's:
  - GOM Deepwater Operations and Activities. Environmental Assessment. BOEM 2000-001
  - GOM Central and Western Planning Areas Sales 166 and 168 Final Environmental Impact Statement. BOEM 96-0058.

SECTION R
ADMINISTRATIVE INFORMATION

(a) Exempted Information Description

The proposed bottom-hole locations of the planned well has been removed from the public information copy of the Plan/EP as well as any discussions of the target objectives, geologic or geophysical data, and any interpreted geology.

(b) Bibliography

- Archaeological and Shallow Hazards Report covering Eugene Island Block 224, Lease OCS-G 05504, prepared by Fugro Geoservices, Inc. during March 2009
- Castex Offshore, Inc.'s Regional Oil Spill Response Plan