

UNITED STATES GOVERNMENT
MEMORANDUM

March 4, 2026

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

Subject: Public Information copy of plan

Control # - S-08214

Type - Supplemental Exploration Plan

Lease(s) - OCS-G18753 Block - 677 Walker Ridge Area
OCS-G21245 Block - 678 Walker Ridge Area

Operator - Union Oil Company of California

Description - Drill and complete up to 4 wells and up to 4 water injection
wells

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.

Tehirah Barkum
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
WELL/IS002D	G21245/WR/678	4956 FNL, 173 FEL	G18753/WR/677
WELL/IS002E	G21245/WR/678	4956 FNL, 173 FEL	G18753/WR/677
WELL/IS002F	G21245/WR/678	4956 FNL, 173 FEL	G18753/WR/677
WELL/IS002G	G21245/WR/678	4956 FNL, 173 FEL	G18753/WR/677
WELL/PTC-1	G18753/WR/677	4924 FNL, 261 FWL	G21245/WR/678
WELL/PTC-2	G18753/WR/677	4924 FNL, 261 FWL	G21245/WR/678
WELL/PTC-3	G18753/WR/677	4924 FNL, 261 FWL	G21245/WR/678
WELL/PTC-4	G18753/WR/677	4924 FNL, 261 FWL	G21245/WR/678

EXPLORATION PLAN S-8214

**UNION OIL COMPANY OF CALIFORNIA
(An Affiliate of CHEVRON U.S.A. INC.)**

WALKER RIDGE BLOCK 633, 634, 677, and 678

OCS-G 18744, 18745, 18753, and 21245

OFFSHORE LOUISIANA

“ST. MALO” PROSPECT

RECORD CHANGE LOG

Submission Type	Date Received	Page Number	Document Type
Initial	01/09/2026	5-206	Supplemental Exploration Plan
Amendment	01/27/2026	Confidential	Included WCD Plan Information BOEM-137 Form Page 3&4
Amendment	02/12/2026	Confidential	Updated Well Name PS009 to PTC-1 on BOEM-137 Form
Amendment	02/20/2026	2-4	Including NTL No. 2010-N06 Additional Information for WCD & Input Data
Amendment	02/25/2026	Confidential	Including details on how permeability was determined

UNION OIL COMPANY OF CALIFORNIA

**NTL No. 2010-N06
Additional Information**

**Exploration Plan
Control Numbers: N-06869, S-06420, R-04686, R-04893, R-05109, S-8214**

Walker Ridge Blocks 633, 634, 677, and 678

St. Malo Field

Offshore Louisiana

CONFIDENTIAL

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1.0 Introduction

This report intends to satisfy the requirements for NTL No.2010-N06 dated June 18th, 2010. The document addresses the following location:

Plan Number	OCS Area	OCS Block	Lease Number	Proposed Well Name
S-8214	Walker Ridge	678	21245	WR 678 PTC-1

The Worst Case Discharge (WCD) scenario for Walker Ridge (WR) 678 will use OCS-G 21245 PTC-1 as the representative well. The 12¼-in. open hole section has been selected for reporting purposes as the other hole sections do not have hydrocarbon bearing sand potential.

Based on system analysis, the WCD initial flow rate is calculated to be 56,667 Barrels Oil per Day (BOPD). [Paragraph redacted- Proprietary information]

Sections 1.1 - 1.6 contain Proprietary information



R. G. Schneider
Assistant Secretary
Asset Development Land Manager

January 6th, 2025

Bureau of Ocean Energy Management
GOM Plans Section (MS – GM 235D)
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

Attention: Chief, Leasing and Plans

**Re: Supplemental Exploration Plan
Walker Ridge Area Blocks 677, 678
Federal Lease OCS-G 18753, 21245
Offshore Louisiana (St. Malo Project)**

Ladies and Gentlemen:

Union Oil Company of California, an affiliate of Chevron U.S.A. Inc., submits for the Bureau of Ocean Energy Management's review and approval this Supplemental Exploration Plan (EP) for the drilling and completion of up to eight (8) wells in the Walker Ridge Area, Blocks 677 and 678, OCS-G 18753 and 21245. We estimate operations on one of the wells listed in the EP could commence as early as February 20th, 2026.

Covered are the following:

- One (1) Proprietary Copy in PDF format of the EP
- One (1) Public Information Copy in PDF format of the EP
- One (1) Digital Copy of the proprietary Site Clearance Letters:
 - Site Clearance Letter, Proposed Wellsite WR 677 IS002, Block 677 (OCS-G-18753), Walker Ridge Area, Gulf of Mexico, Geoscience Earth & Marine Services, Inc. ©, Project No. GHZ1163 August 22, 2025.
 - Site Clearance Letter, Proposed Wellsite WR 678 PTC, Block 678 (OCS-G-21245), Walker Ridge Area, Gulf of Mexico, Geoscience Earth & Marine Services, Inc. ©, Project No. GHZ3287 March 3, 2025.
- Pay.gov Receipt included in Proprietary Copy of the EP

Should you have any questions or need additional information, please contact Scott Mahar, Scott.Mahar@chevron.com, or call 713-449-3172.

Sincerely,
Chevron U.S.A. Inc.

Assistant Secretary

SUPPLEMENTAL EXPLORATION PLAN

**UNION OIL COMPANY OF CALIFORNIA
(An Affiliate of CHEVRON U.S.A. INC.)**

WALKER RIDGE BLOCK 677, 678

OCS-G 18753 and 21245

OFFSHORE LOUISIANA

“ST. MALO”

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SECTION A PLAN CONTENTS

(a) PLAN INFORMATION FORM

Included at the end of this section is Form BOEM-0137 "OCS Plan Information Form".

Union Oil Company of California, an affiliate of Chevron U.S.A. Inc. (Chevron) is the designated operator of lease OCS-G 18753, Walker Ridge (WR) Block 677. WR Blocks 633 (OCS-G 18744), 634 (OCS-G 18745), 677 (OCS-G 18753) and 678 (OCS-G 21245) are part of the WR 678 Unit, Unit Number 7543070140.

An initial Exploration Plan (EP) for WR Block 678 (OCS-G 21245), submitted by Union Oil Company of California (Unocal) and assigned control number N-06630, was approved by your office on November 29th, 1999. The initial EP N-6630 approval included the activities proposed for WR 678 Wells A through F, six (6) locations.

An initial EP for WR Blocks 633 (OCS-G 18744), 634 (OCS-G 18745), and 677 (OCS-G 18753), submitted by Chevron and assigned control number N-06869, was approved by your office on September 20th, 2000. The initial EP N-06869 approval included the activities proposed for WR 633 Wells A, B and C; WR 634 Wells A and B; and WR 677 Wells A, B, and C. A total of eight (8) locations were approved in this plan.

A Supplemental EP for WR Blocks 677 (OCS-G 18753) and 678 (OCS-G 21245), submitted by Unocal and assigned control number S-06420, was approved by your office on May 19th, 2004. This approval included the activities proposed for WR 677 Wells A through E and WR 678 G, for a total of six (6) locations.

A Revised EP for WR Blocks 633, 634, 677, and 678 was submitted by Unocal and assigned control number R-05109, approved on June 24th, 2011. This approval included the activities for subsea wells PN001, PN002, PN003, PN005, PN006, PN007, PN008 and PS001, PS002, PS003, PS004, PS005, PS006, PS007, PS008.

A Supplemental EP for WR Blocks 634, 677, and 678, submitted by Unocal and assigned control number S-07962, was approved on August 9th, 2019. This approval included the activities proposed to drill, complete and or abandon: up to two (2) wells, PT03A and PT03B, in WR 678 from the existing "PN" drill center in WR 634; up to two (2) wells, PT02A and PT02B. Also, proposed was to drill, complete and or abandon up to twelve (12) water injector wells, IT01A, IT01B, IT03A, IT03B, IT05A, IT05B, IS001A, IS001B, IS011A, IS011B, IS002A, and IS002B from new surface locations in WR 678. Seven (7) additional well locations; RW1, RW2, RW3, RW5, RW6, RW6D, and RW7 were also included in this plan to be used as relief wells if needed.

A Supplemental EP for WR Block 677 was submitted by Chevron and assigned control number S-8029, was approved December 3rd, 2020. This approval included activities to drill, complete and or abandon: up to three (3) wells, PT04A (drilled as PS008), PT04B, and PT04C, in the existing "PS" drill center in WR 677. Two (2) additional well locations: RW8 and RW9 were also included in this plan and could be used as relief wells.

A Revised EP for WR Block 677, R-07382, was approved July 18th, 2025. This approval was to categorize the following wells from H2S Unknown to H2S Absent; PT04A (drilled as PS008), PT04B, PT04C, RW8, and RW9.

An initial DOCD, N-09584, and a subsequent revised DOCD, R-05625, was approved in January and June of 2012. Two additional revised DOCDs have been submitted, R-06870, approved in October 2019; and R-06985, approved in August 2020.

Under this Supplemental EP, Chevron proposes to drill, complete and or abandon up to four (4) wells within the WR 678 block: PTC-1, PTC-2, PTC-3, and PTC-4. Chevron additionally proposed to drill, complete and or abandon up to four (4) water injector wells from surface locations in WR 677: IS002D, IS002E, IS002F, and IS002G.

Chevron plans to use a **Subsea BOP** in the drilling of the wells proposed in this plan.

The activities proposed in this plan will not utilize pile-driving, nor is Chevron proposing any new pipelines expected to make landfall.

Proposed Schedule

The proposed schedule includes drilling, completing, and/or abandoning any of the following wells from February 20, 2026 through December 31, 2030. Each well is anticipated to take no more than 200 days to drill, complete, and/or abandon.

- WR 677 IS002D, IS002E, IS002F, IS002G
- WR 678 PTC-1, PTC-2, PTC-3, PTC-4

(b) LOCATION / BATHYMETRY MAP

Included is a location/bathymetry map at a scale of 1"=2,000', showing the surface locations and water depth for the proposed wells.

(c) SAFETY and POLLUTION PREVENTION FEATURES

Chevron plans to use a dynamically positioned drillship to drill the wells proposed in this plan. The wells will be drilled using a Subsea BOP system. Rig specifications will be provided with the Applications for Permit to Drill. If another rig type is used, any differences regarding air emissions, safety, drilling or pollution control equipment will be addressed in a revised Exploration Plan.

In accordance with 30 CFR 250.406, safety features will include well control, pollution prevention, welding procedure, and blowout prevention equipment and as further clarified by the Bureau of Safety and Environmental Enforcement (BSEE) and the Bureau of Ocean Energy Management (BOEM) Notices to Lessees (NTL's) and current policy making invoked by BSEE and BOEM.

The rig will be monitored daily by a Chevron drilling representative and any waste or fuel resulting in pollution of the Gulf waters will be reported to the representative in charge for immediate isolation and correction of the problem. Any spill will be reported to governmental agencies in accordance with applicable laws, rules, and regulations. Chevron will comply with all BSEE and BOEM regulations during the course of the activities.

The rig is equipped with safety, firefighting, and lifesaving equipment required for compliance with USCG, ABS, SOLAS, and IMO code requirements.

Chevron will comply with all pertinent regulations in 30 CFR 250.203, NTL's, and all applicable federal and state requirements. Chevron will maintain compliance with the EPA NPDES Permit and lease agreement during these proposed activities.

(d) TABLE of STORAGE TANKS and PRODUCTION VESSELS

Information regarding representative storage tanks that may be used to conduct the proposed activities in this plan that will store oil is provided in the table below. Only those tanks with a capacity of 25 barrels or more are included.

Storage Tank	Facility Type	Tank Capacity (bbls)	Tanks (no.)	Total Capacity (bbls)	Fluid Gravity (API)
Main Fuel Oil	Drillship	18,000	2	36,000	No. 2 diesel
Diesel Settling		837	2	1,674	
Diesel Day		837	2	1,674	
Emergency Diesel		100	1	100	
Diesel Overflow		823	1	823	
Diesel Oil Drain Aft		42	1	42	
Engine Oil Storage		182	1	182	26.2
Gear Oil Aft		62	1	62	27
Gear Oil Fwd		176	1	176	27
Hydraulic Oil Aft		84	1	84	31
Hydraulic Oil Fwd		87	1	87	31

(f) MEASURES to PREVENT DISCHARGE of OILS and GREASES DURING RAINFALL and ROUTINE OPERATIONS

The drillship is equipped with a comprehensive network of piping, drains and scuppers to minimize the risk that pollutants are discharged into the marine environment.

All drains and drain material are collected in various holding tanks and located in the ship and then processed by the oily water separator systems. Clean water, either from hazardous or nonhazardous sources, may be directed overboard according to regulatory requirements if the effluent discharge is within the environmental limits. Any remaining sludge and oil are directed to the necessary holding tanks for proper disposal according to regulatory requirements.

(g) ADDITIONAL SAFETY, POLLUTION PREVENTION, and EARLY SPILL DETECTION MEASURES

In addition to pollution prevention measures utilized by Chevron, the drillship has a comprehensive, proactive plan to address emergency situations that could result in an unanticipated oil/chemical release. The “Shipboard Oil Pollution Emergency Plan” has specific checklists and procedures to address accidental releases due to fuel/oil transfer, tank overflow, hull leakage, fire, explosion, collision and grounding. This plan is reviewed annually and oil pollution prevention drills are conducted as specified by MARPOL regulations. There is a fully stocked environmental equipment locker located on the main deck, forward of the Moon-pool and numerous spill kits located throughout the main deck. The decks of the drillship are fully contained, a comprehensive scupper management plan in place, and any spills on the deck would be immediately cleaned up using absorbents or permitted solvents.

ATTACHMENTS TO SECTION A

- Form BOEM-0137 “OCS Plan Information Form” – Public Information Copy
- Location/Bathymetry Plat, Scale: 1”=2,000’

OCS PLAN INFORMATION FORM

General Information										
Type of OCS Plan:	<input checked="" type="checkbox"/>	Exploration Plan (EP)	Development Operations Coordination Document (DOCD)							
Company Name: Union Oil Company of California			BOEM Operator Number: 00003							
Address:			Contact Person: Scott Mahar							
1500 Louisiana Street			Phone Number: 713-449-3172							
Houston, Texas 77002			E-Mail Address: Scott.Mahar@Chevron.com							
If a service fee is required under 30 CFR 550.125(a), provide the				Amount paid	\$9,646.00	Receipt No.	77260705473			
Project and Worst Case Discharge (WCD) Information										
Lease(s): 18753, 21245		Area: WR	Block(s): 678	Project Name (If Applicable): St. Malo						
Objective(s)	<input checked="" type="checkbox"/>	Oil	<input checked="" type="checkbox"/>	Gas	<input type="checkbox"/>	Sulphur	<input type="checkbox"/>	Salt	Onshore Support Base(s): Port Fourchon, LA	
Platform/Well Name: PTC-1		Total Volume of WCD: 7,253,376				API Gravity: 32.6				
Distance to Closest Land (Miles): 185			Volume from uncontrolled blowout: 56,667 bopd							
Have you previously provided information to verify the calculations and assumptions for your WCD?							<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
If so, provide the Control Number of the EP or DOCD with which this information was provided										
Do you propose to use new or unusual technology to conduct your activities?							<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Do you propose to use a vessel with anchors to install or modify a structure?							<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Do you propose any facility that will serve as a host facility for deepwater subsea development?							<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Description of Proposed Activities and Tentative Schedule (Mark all that apply)										
Proposed Activity		Start Date	End Date	No. of Days						
Exploration drilling		02/20/2026	12/31/2030	approximately 110 days/well						
Development drilling										
Well completion		08/01/2026	12/31/2030	approximately 90 days/well						
Well test flaring (for more than 48 hours)										
Installation or modification of structure										
Installation of production facilities										
Installation of subsea wellheads and/or manifolds										
Installation of lease term pipelines										
Commence production										
Other (Specify and attach description)										
Description of Drilling Rig					Description of Structure					
Jackup	<input checked="" type="checkbox"/>	Drillship		Caisson		Tension leg platform				
Gorilla Jackup	<input type="checkbox"/>	Platform rig		Fixed platform		Compliant tower				
Semisubmersible	<input type="checkbox"/>	Submersible		Spar		Guyed tower				
DP Semisubmersible	<input type="checkbox"/>	Other (Attach Description)		Floating production system		Other (Attach Description)				
Drilling Rig Name (If Known):										
Description of Lease Term Pipelines										
From (Facility/Area/Block)	To (Facility/Area/Block)	Diameter (Inches)	Length (Feet)							

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): IS002D					Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid			
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS G 18753			OCS			OCS OCS			
Area Name	WALKER RIDGE									
Block No.	677									
Blockline Departures (in feet)	N/S Departure: F <u> </u> N <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L			
	4956						N/S Departure: F <u> </u> L			
	E/W Departure: F <u> </u> E <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L			
	173						E/W Departure: F <u> </u> L			
Lambert X-Y coordinates	X: 2264946			X:			X:			
	Y: 9546563			Y:			Y:			
Latitude/ Longitude	Latitude N 26 17 48.6599			Latitude			Latitude			
	Longitude W 91 05 36.0143			Longitude			Longitude			
Water Depth (Feet): -7036				MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):
Anchor Radius (if applicable) in feet:					NA					
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)										
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor			
			X =		Y =					
			X =		Y =					
			X =		Y =					
			X =		Y =					
			X =		Y =					
			X =		Y =					
			X =		Y =					

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): IS002E				Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid		
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G 18753			OCS			OCS OCS		
Area Name	WALKER RIDGE								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: F <u> </u> N <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L		
	4956						N/S Departure: F <u> </u> L		
	E/W Departure: F <u> </u> E <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L		
	173						E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2264946			X:			X:		
	Y: 9546563			Y:			Y:		
Latitude/ Longitude	Latitude N 26 17 48.6599			Latitude			Latitude		
	Longitude W 91 05 36.0143			Longitude			Longitude		
Water Depth (Feet): -7036				MD (Feet):		TVD (Feet):		MD (Feet):	
Anchor Radius (if applicable) in feet:				NA				TVD (Feet):	
								MD (Feet):	
								TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				

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): IS002F				Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No			
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.					
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No		
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid				
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)				
Lease No.	OCS G 18753			OCS			OCS OCS				
Area Name	WALKER RIDGE										
Block No.	677										
Blockline Departures (in feet)	N/S Departure: F <u> </u> N <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L				
	4956						N/S Departure: F <u> </u> L				
	E/W Departure: F <u> </u> E <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L				
	173						E/W Departure: F <u> </u> L				
Lambert X-Y coordinates	X: 2264946			X:			X:				
	Y: 9546563			Y:			Y:				
Latitude/ Longitude	Latitude N 26 17 48.6599			Latitude			Latitude Latitude Latitude				
	Longitude W 91 05 36.0143			Longitude			Longitude Longitude Longitude				
Water Depth (Feet): -7036				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):			
Anchor Radius (if applicable) in feet:				NA						TVD (Feet): TVD (Feet): TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)											
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor						
			X =	Y =							
			X =	Y =							
			X =	Y =							
			X =	Y =							
			X =	Y =							
			X =	Y =							
			X =	Y =							

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): IS002G					Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid			
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS G 18753			OCS			OCS OCS			
Area Name	WALKER RIDGE									
Block No.	677									
Blockline Departures (in feet)	N/S Departure: F <u> </u> N <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L			
	4956						N/S Departure: F <u> </u> L			
	E/W Departure: F <u> </u> E <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L			
	173						E/W Departure: F <u> </u> L			
Lambert X-Y coordinates	X: 2264946			X:			X:			
	Y: 9546563			Y:			Y:			
Latitude/ Longitude	Latitude N 26 17 48.6599			Latitude			Latitude Latitude Latitude			
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Water Depth (Feet): -7036				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):		TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:					NA					
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)										
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor					
			X =	Y =						
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			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): PTC-1					Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid			
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS G 21245			OCS			OCS OCS			
Area Name	WALKER RIDGE									
Block No.	678									
Blockline Departures (in feet)	N/S Departure: F <u> </u> N <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L			
	4924						N/S Departure: F <u> </u> L			
	E/W Departure: F <u> </u> W <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L			
	261						E/W Departure: F <u> </u> L			
Lambert X-Y coordinates	X: 2265381			X:			X:			
	Y: 9546596			Y:			Y:			
Latitude/ Longitude	Latitude N 26 17 48.9210			Latitude			Latitude			
	Longitude W 91 05 31.2398			Longitude			Longitude			
Water Depth (Feet): -7031				MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):
Anchor Radius (if applicable) in feet:				NA				MD (Feet):		TVD (Feet):
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)										
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor					
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OCS PLAN INFORMATION FORM (CONTINUED)
Include one copy of this page for each proposed well/structure

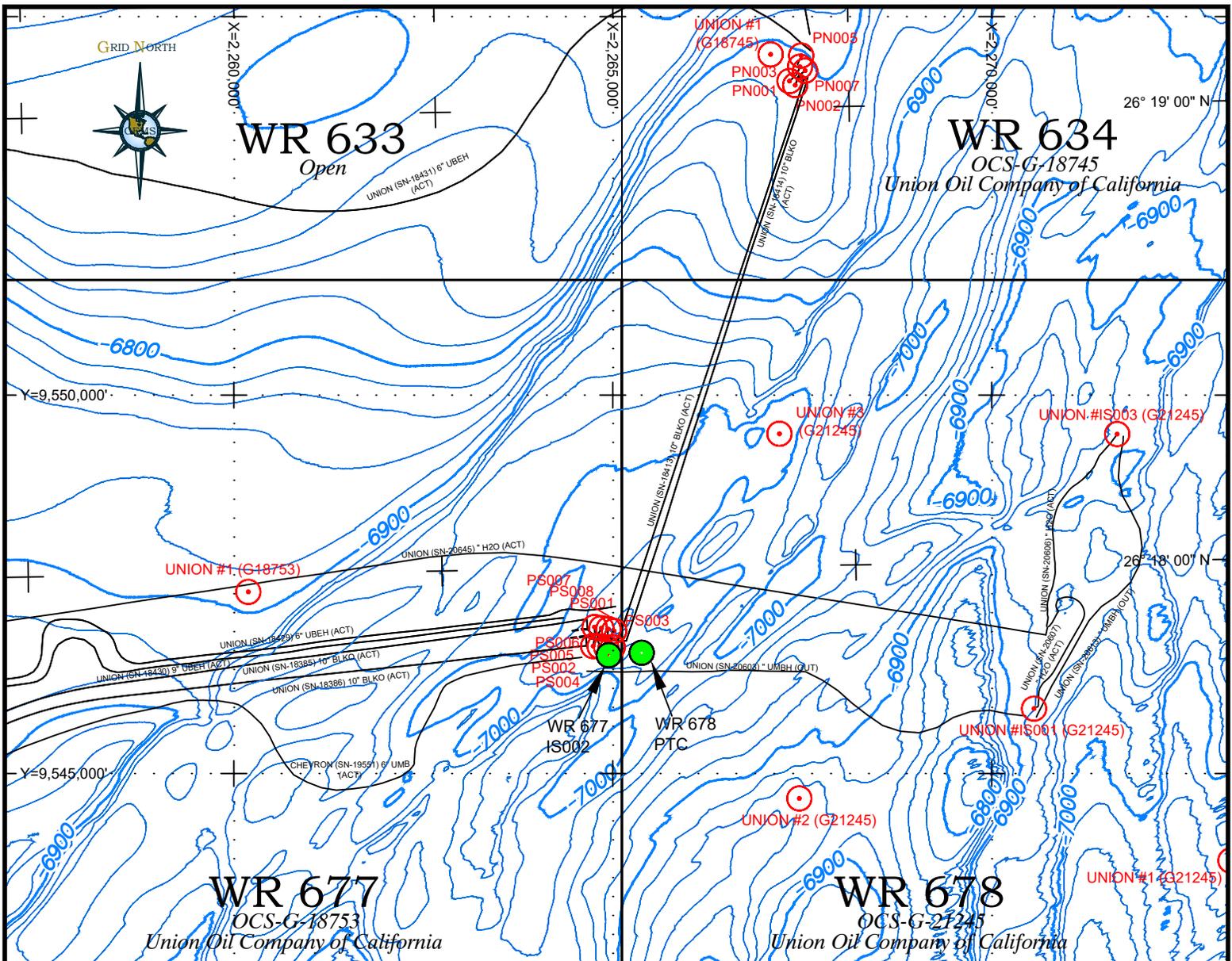
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Well or Structure Name/Number (If renaming well or structure, reference previous name): PTC-2				Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid		
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G 21245			OCS			OCS OCS		
Area Name	WALKER RIDGE								
Block No.	678								
Blockline Departures (in feet)	N/S Departure: F <u> </u> N <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L		
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	E/W Departure: F <u> </u> W <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L		
	261						E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2265381			X:			X:		
	Y: 9546596			Y:			Y:		
Latitude/ Longitude	Latitude N 26 17 48.9210			Latitude			Latitude		
	Longitude W 91 05 31.2398			Longitude			Longitude		
Water Depth (Feet): -7031				MD (Feet):		TVD (Feet):		MD (Feet):	
Anchor Radius (if applicable) in feet:				NA				TVD (Feet):	
								MD (Feet):	
								TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
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OCS PLAN INFORMATION FORM (CONTINUED)
Include one copy of this page for each proposed well/structure

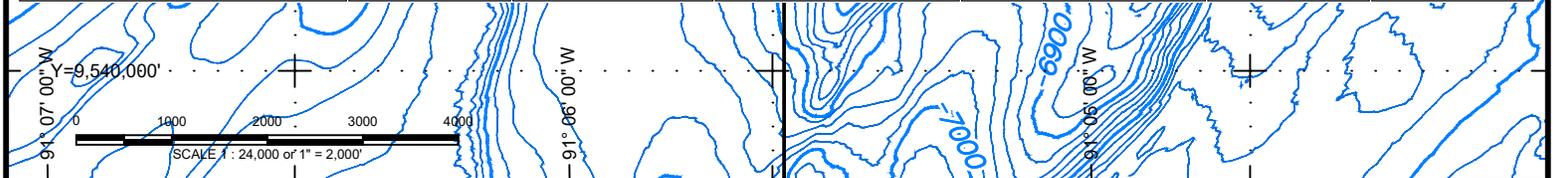
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Well or Structure Name/Number (If renaming well or structure, reference previous name): PTC-3					Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid			
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS G 21245			OCS			OCS OCS			
Area Name	WALKER RIDGE									
Block No.	678									
Blockline Departures (in feet)	N/S Departure: F <u> </u> N <u> </u> L			N/S Departure: F <u> </u> L			N/S Departure: F <u> </u> L			
	4924						N/S Departure: F <u> </u> L			
	E/W Departure: F <u> </u> W <u> </u> L			E/W Departure: F <u> </u> L			E/W Departure: F <u> </u> L			
	261						E/W Departure: F <u> </u> L			
Lambert X-Y coordinates	X: 2265381			X:			X:			
	Y: 9546596			Y:			Y:			
Latitude/ Longitude	Latitude N 26 17 48.9210			Latitude			Latitude Latitude Latitude			
	Longitude W 91 05 31.2398			Longitude			Longitude Longitude Longitude			
Water Depth (Feet): -7031				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):		TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:					NA					
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)										
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor					
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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): PTC-4				Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid		
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G 21245			OCS			OCS OCS		
Area Name	WALKER RIDGE								
Block No.	678								
Blockline Departures (in feet)	N/S Departure: F <u> </u> L		N/S Departure: F <u> </u> L		N/S Departure: F <u> </u> L		N/S Departure: F <u> </u> L		
	4924						N/S Departure: F <u> </u> L		
	E/W Departure: F <u> </u> L		E/W Departure: F <u> </u> L		E/W Departure: F <u> </u> L		E/W Departure: F <u> </u> L		
	261						E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2265381			X:			X:		
	Y: 9546596			Y:			Y: Y: Y:		
Latitude/ Longitude	Latitude N 26 17 48.9210			Latitude			Latitude Latitude Latitude		
	Longitude W 91 05 31.2398			Longitude			Longitude Longitude Longitude		
Water Depth (Feet): -7031				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):	
Anchor Radius (if applicable) in feet:				NA				TVD (Feet): TVD (Feet): TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor				
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
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Well Designation	Cartesian Coordinates UTM Zone 15 (ft)		Geographic Coordinates		Block Calls (ft)	
			C1866, NAD 1927 (deg., min., sec.)			
	X	Y	Latitude	Longitude		
WR 678 PTC	2,265,381 ft	9,546,596 ft	26° 17' 48.9210" N	91° 05' 31.2398" W	261 ft FWL	4,924 ft FNL
WR 677 IS002	2,264,946.88 ft	9,546,563.23 ft	26° 17' 48.6599" N	91° 05' 36.0143" W	173.12 ft FEL	4,956.77 ft FNL



- PROPOSED WELL LOCATION.
 - EXISTING CHEVRON WELL LOCATION, AS REPORTED BY BOEM.
 - EXISTING PIPELINE/UMBILICAL/CABLE LOCATION, AS REPORTED BY BOEM.
 - WATER DEPTH CONTOUR IN FEET. DEPTHS DERIVED FROM AUV ACQUIRED MULTIBEAM DATA. CONTOUR INTERVAL = 20 FEET.
- PROJECTION: UTM
ZONE: 15 NORTH
GEODEIC DATUM: NAD 1927
ELLIPSOID: CLARKE 1866
DATE: 8 JANUARY 2026
GRID UNITS: US FEET

PROJECT NO.: GHZ1370
FILE NAME: WR678_PLAT.DWG

CHEVRON
U.S.A. INC.

SURFACE LOCATION PLAT

BLOCK 677 & 678
WALKER RIDGE AREA
GULF OF AMERICA

GEOSCIENCE EARTH &
GEMS
MARINE SERVICES, INC.
A Geosyntec Company

LOCATION MAP

SECTION B GENERAL INFORMATION

(a) APPLICATIONS AND PERMITS

In the table below, information is provided on the filing or approval status of the Federal, State, and local application approvals or permits that must be obtained to conduct the proposed activities. Only those individual or site-specific application approvals that must be obtained are listed.

Application/Permit	Issuing Agency	Status
NPDES Permit	EPA	Approved
EEP	U.S. Coast Guard	To be submitted
APD	BSEE	To be submitted

(b) DRILLING FLUIDS

(1) Information on the types (including chemical constituents) and amounts of the drilling fluids planned for use in drilling each proposed well:

Type of Drilling Fluid	Est. Volume of Drilling Fluid (bbls/well)
Water based (seawater, brine, freshwater)	18,544
Synthetic based (internal olefin, ester)	26,000
Oil based (diesel, mineral oil)	0

(2) Major Components of Synthetic-based drilling fluid listed above:

Product Name	Amount to be Used	Reference Number	Haz Mat No
Lime (Calcium Hydroxide)	5,955 50-lb bags	SAP # 210265	HM001002
Calcium Chloride	4,230 50-lb bags	SAP # 201174	HM000142
Adapta	2,555 50-lb bags	SAP # 388827	HM004609
Suspension Package 1	3,946 50-lb bags	SAP # 102164339	HM007356
Aquagel Gold Seal	50.3 tons	SAP # 200584	HM003470
LE Supermul	52,711 gals	SAP # 201732	HM003680
Rhemod-L	5,392 gals	SAP # 101289484	HM004610
BaraVis 568	7,167 gals	SAP # 1008562	HM003503
Barite 325	5,006 tons	SAP # 959712	HM008002
Encore Base	12,059 bbls	SAP # 377938	HM005313
Baracarb	8,776 50-lb bags	SAP # 201312	HM003484
Barofibre O	1,913 25-lb bags	SAP # 101655984	HM006401
Barofibre	1,521 50-lb bags	SAP # 201600	HM003539
Steelseal	2,474 50-lb bags	SAP # 101618889	HM003768

(e) NEW OR UNUSUAL TECHNOLOGY

No new or unusual technology will be used to perform the activities proposed in this plan.

(f) BONDING STATEMENT

The bond requirements for the activities and facilities proposed in this EP are satisfied by an area-wide bond, furnished and maintained according to 30 CFR part 556, subpart I (Bonding or Other Financial Assurance). Should BOEM require Chevron to post additional security in accordance with NTL No. 2016-N01 "Requiring Additional Security" or under 30 CFR part 556 subpart I, Chevron will either provide the required additional security or a third party guarantee as soon as possible after receipt of such request from BOEM.

(g) OIL SPILL FINANCIAL RESPONSIBILITY (OSFR)

Chevron U.S.A. Inc., BOEM company number 00078, has demonstrated oil spill financial responsibility for the facilities proposed in this EP according to 30 CFR part 553, and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities."

(h) DEEPWATER WELL CONTROL STATEMENT

Chevron U.S.A. Inc., BOEM company number 00078, has the financial capability to drill a relief well and conduct other emergency well control operations.

(j) BLOWOUT SCENARIO

The calculations and assumptions used to calculate the WCD volume from a blowout for the lease in this plan were submitted and accepted by the BOEM with Exploration Plan R-05109, Walker Ridge Blocks 633, 634, 677, and 678; OCS-G 18744, 18745, 18753 and 21245.

Estimated flow rate

Systems analysis indicates that an uncontrolled blowout in the 12-1/4" open hole section will lead to a maximum Worst Case Discharge Scenario initial flow rate of 56,667 bopd. This rate is based on transient nodal analysis and does not include the effects of heavy fluid unloading or filter cake cleanup.

Total volume and maximum duration of the potential blowout

For the purpose of the Worst Case Discharge Scenario, hole collapse and sand bridging are ignored. The Total Potential Spill Volume is estimated at 7,253,376 bbls of oil. The maximum duration of the blowout is estimated at 128 days, the time it would take to kill the blowout well.

Potential for well to bridge over

Although it is highly likely that some sand would be produced under a blowout scenario, Chevron expects that the amount of sand is small enough to be lifted to the seafloor without bridging.

Likelihood for surface intervention to stop the blowout

The likelihood of surface intervention to stop a blowout is based on the equipment specific to the MODU(s) or drillships that will drill the well(s). Chevron's contracted drillships and personnel have the following methods and equipment available to minimize the risk of an incident occurring:

- Maintaining well control
- Deadman / Autoshear functions on the BOP
- Permanently fixed ROV panels on the BOP to allow an ROV to function the BOP via standard hot stab interfaces
- Acoustic Pods on the BOP to function the BOP in the event the primary BOP control system is compromised

In the event of a well blowout, Chevron will act as soon as practical to reduce the overall risk of injury to personnel and damage to the environment and may consider potential actions that may have short term increases in effluent flow in the interest of reducing overall environmental impact or incident escalation. One such action that Chevron would

consider is removal of any compromised or damaged equipment that may be restricting our ability to control the effluent flow (a BOP, LMRP, and / or riser) and to allow for installation of the appropriate response equipment (an alternate BOP or capping stack) to assist in controlling the well.

Initial response actions could include, but are not limited to:

- Actions necessary for personnel safety, including evacuation.
- ROV mobilization and tactics, including:
 - Identify the source(s) of hydrocarbon release
 - Assess the post incident geometry of equipment
- Identify existing BOP / LMRP options and / or take action:
 - Status
 - Functionality
 - Actuate rams
 - Disconnection of existing BOP / LMRP / Riser to affect an appropriate connection point for capping / intervention options

Chevron will consider multiple capping stack alternatives to cap and contain a well during a loss of well control event. As a member of the Marine Well Containment Company (MWCC), Chevron has access to MWCC's Interim Containment System and Expanded Containment Systems (ECS). The Containment Systems includes two Modular Capture Vessels (MCVs), four capping stacks; Subsea Umbilical, Risers and Flowlines (SURF) equipment; and additional ancillary equipment. The system consists of equipment rated for 10,000 feet and up to 20k psi and 400 deg F. It has the capacity to contain up to 100,00 barrels of liquid per day (50k bopd per vessel) and handle up to 200 million standard cubic feet of gas per day. The system also has dispersant and injection capability.

In addition to MWCC's capping stacks, Chevron has access to additional capping options through the immediate availability of two complete 18 3/4" 15k BOP stacks, which are held as permanent secondary stacks located on two of Chevron's contracted drillships operating in the Gulf of Mexico. Access to both the MWCC and Chevron-specific equipment provides Chevron with increased flexibility in capping and containing a well blowing out. The selection of the appropriate capping method will be dependent upon the incident circumstances.

Time to contract rig, move it onsite and drill relief well

Chevron estimates that it would take ten (10) days to acquire and demobilize a rig, four (4) days to move the rig onsite, and 114 days to drill the relief well, intersect the blowout well, and conduct a kill operation for a total of 128 days.

Availability of a rig to drill a relief well and rig package constraints

Chevron plans to drill the proposed wells in this plan with one of the drillships currently under contract. Chevron has the capability to cease current operations and move one of our contracted drill ships to drill the relief well or contract a rig of opportunity. These drillships do not have any equipment constraints with respect to drilling a relief well for the project. The relief well would be designed to intercept the blowout well below the 13 5/8" liner with a 10 5/8" hole.

There are no platforms or other infrastructure nearby that would hamper relief well operations. Site surveys have been conducted near the proposed drilling locations to identify surface hazards that might impact the selection of a relief well location. Selection of the actual location would be constrained by typical parameters such as planned inclination, benign water-bottom and salt entry/exit points, wind and current direction and subsurface hazard avoidance. Directional plans for a relief well would be a simple build and hold with a target of less than 40 degrees hole angle. Casing design for the relief well will be like that proposed for the wells in this plan.

Measures to enhance the ability to prevent a blowout, reduce the likelihood of a blowout, and conduct effective and early intervention in the event of a blowout

In order for Chevron to address its ability to prevent blowouts, reduce the likelihood of blowouts, and conduct effective/early intervention in the event of a blowout, Chevron has developed standards for well control, personnel safety, and emergency response plans. Chevron has also entered into agreements with industry Subject Matter Experts (SME).

At all times from planning through execution, Chevron takes the necessary steps to maintain primary well control to prevent the occurrence of blowouts as outlined in the Chevron Well Control Guide.

The drilling team works in conjunction with the geological and geophysical operations team and the exploration project team to use their knowledge and good judgment to create best possible well plans and program for any particular prospect. All relevant geological information is used to understand the risks and uncertainties that are unique to the location. Appropriate plans are then generated to eliminate or mitigate the identified risks. Special equipment for contingency plans is sourced and qualified personnel are identified for conducting the various tasks.

Prior to the execution phase, all the well control equipment on the rig undergoes a rigorous inspection and acceptance process/procedure by the Chevron Global Well Intervention group.

To reduce the likelihood of a blowout, appropriate offset information is used to generate pore pressure models that predict localized area pore pressure. Maximum Anticipated Surface Pressure (MASP) is calculated to ensure that the working pressure of the BOP equipment is not exceeded at any time during well construction. Pressure While Drilling (PWD) and Log While Drilling (LWD) data, such as gamma ray, resistivity, sonic, are used during the drilling operation to monitor real time pore pressure variances.

Adjustments can then be made to the mud system to maintain the appropriate overbalance on the pore pressure. Mud tank volumes and trip tank volumes are monitored while drilling for early detection of changes in anticipated trends. Routine maintenance and testing of blowout prevention equipment helps to ensure the equipment is in good working condition during operations. Data sheets and critical wellbore information which are needed in well control situations are maintained at the well site.

Two (2) barriers shall be available during all normal well activities, operations, suspensions, and abandonments to prevent uncontrolled flow from the wellbore to the environment. Two mechanical barriers will be in place before removing the Blowout Preventer (BOP) from a well which has hydrocarbons.

Preliminary plans are developed for potential relief well locations(s) during the planning phase for the primary well(s). These preliminary plans can be used to develop detailed relief well drilling plans as needed in a timely manner. Relief well locations have been identified for the primary well location.

In addition to Chevron's contracted resources to assist in the event of a blowout, Chevron is a founding member of the Marine Well Containment Company, currently has access to MWCC's Interim Containment Response System (ICRS) and MWCC's Expanded Containment System (ECS). These resources, along with Chevron's own well containment and emergency response planning, give Chevron a high probability of regaining control of a blown out well.

Assumptions and calculations used in the determination of the Worst Case Discharge Information were included in the confidential copy of Plan R-05109 and approved with that plan.

SECTION C GEOLOGICAL AND GEOPHYSICAL INFORMATION

(a) GEOLOGICAL DESCRIPTION

Proprietary Information

(b) STRUCTURE CONTOUR MAPS

Proprietary Information

(c) INTERPRETED 2-D AND/OR 3-D SEISMIC LINES

Proprietary Information

(d) GEOLOGICAL STRUCTURE CROSS-SECTION

Proprietary Information

(e) SHALLOW HAZARDS REPORT

The shallow hazard reports, completed by Geoscience Earth & Marine Services, Inc. (GEMS), listed below have been previously submitted to BOEM:

- Geologic Stratigraphic Assessment, Blocks 633, 634, and 677, Walker Ridge Area, Gulf of Mexico, Project No. 0400-252
- Preliminary Geologic Site Assessment, St. Malo Prospect, Blocks 633, 634, 677, and 678, Walker Ridge Area, Gulf of Mexico, Project No. 0906-1237a
- Geologic and Stratigraphic Assessment, St. Malo Development Project, Blocks 677 and 678, Walker Ridge Area, Gulf of Mexico, Project no. 0308-1467c
- Geologic Assessment for Planned Flowlines (block 634 to 677-678) and umbilical (Block 718 to 634) St. Malo North, Walker Ridge Area, Gulf of Mexico, Project no. 0311-1960c
- Jack-St. Malo Area Development Area, Archaeological Assessment, Blocks 631-634, 671, 674-678, 714-721, 758-764, 802-805, Walker Ridge Area, Gulf of Mexico, Project no. 0311-1903

(f) SHALLOW HAZARDS ASSESSMENT

Site-specific shallow hazard clearance letters for the proposed well sites were prepared by GEMS and comply with NTL No.'s 2008-G04, 2008-G05, and 2009-G40 and the mitigation guidelines released by BOEMRE in March 2011. These mitigation guidelines require an archaeological assessment prior to any bottom disturbing activities. GEMS prepared an Archaeological Assessment to comply with NTL No. 2005-G07 in June 2011.

The proposed wellsites IS002D, IS002E, IS002F, and IS002G are being drilled from the WR 677 block. The proposed wellsites PTC-1, PTC-2, PTC-3, and PTC-4 are being drilled from the WR 678 block. These locations were cleared in Plan R-05109.

One hard copy and one digital copy of the proprietary Site Clearance Letters is being submitted as an enclosure with this plan for each of these sites.

(g) HIGH RESOLUTION SEISMIC LINES

Proprietary Information

(h) STRATIGRAPHIC COLUMN

Proprietary Information

(i) TIME vs. DEPTH TABLE

Proprietary Information

ATTACHMENTS TO SECTION C - Proprietary Information

Chevron U.S.A. Inc.
Walker Ridge Block 677

Supplemental Exploration Plan
Public Information

- Depth Structure Contour Map
- Index Map with Well Locations
- Index Map with Lines of Section
- Interpreted 3-D Seismic Section
- Schematic Structural Cross Section
- Anticipated Stratigraphic Column

PROPRIETARY ENCLOSURE TO PLAN

- Site Clearance Letter, Proposed Wellsites WR677 IS002 (OCS-G-18753), Walker Ridge Area, Gulf of Mexico, Geoscience Earth & Marine Services, Inc.®, August 22, 2025 (GEMS Project No. GHZ1163)
- Site Clearance Letter, Proposed Wellsites WR678 PTC (OCS-G-21245), Walker Ridge Area, Gulf of Mexico, Geoscience Earth & Marine Services, Inc.®, March 3, 2025 (GEMS Project No. GHZ3287)

A non-proprietary copy of the GEMS site clearance letters for the proposed well locations is included below:

March 3, 2025

Project No.: GHZ3287

Chevron U.S.A. Inc.
1500 Louisiana Street
Houston, Texas 77002

Attention: Mr. Christopher Crowell

**Site Clearance Letter,
Proposed Wellsite PTC,
Block 678 (OCS-G-21245),
Walker Ridge Area,
Gulf of Mexico**

Chevron U.S.A. Inc. (Chevron) contracted Geoscience Earth & Marine Services (GEMS), a Geosyntec Company, to provide an assessment of the seafloor and shallow geologic conditions to determine the favorability of drilling operations for the proposed location PTC in Block 678 (OCS-G-21245), Walker Ridge Area, Gulf of Mexico. This letter addresses specific seafloor and subsurface conditions around the proposed location to the Top of Salt at a depth of about 1,251 ft below the mudline (bml).

The proposed wellsite lies along a highly faulted region of seafloor. The proposed wellsite may intersect a seafloor fault within the conductor zone at approximately 220 ft bml. Buried faults will be encountered at approximately 160 ft, 410 ft, and 704 ft bml. No potential sites for deepwater benthic communities exist within 2,000 ft. There is a negligible to low potential for encountering shallow gas and negligible potential for water flow from the seafloor to the Top of Salt (Limit of Investigation).

This letter provides details specific to the well location, including available data, Notice to Lessees (NTL) requirements, man-made features, and wellsite conditions.

Proposed Well Location

The surface location for the Proposed Wellsite PTC lies in the northwestern portion of WR 678. Chevron provided the following coordinates:

Table WR 678 PTC-1. Proposed Location Coordinates

Proposed Wellsite PTC			
Spheroid & Datum: Clarke 1866 NAD27 Projection: UTM Zone 15 North		Line Reference	Block Calls (WR 678)
X: 2,265,381 ft	Latitude: 26° 17' 48.9210" N	Inline 14895	261 ft FWL
Y: 9,546,596 ft	Longitude: 91° 05' 31.2398" W	Crossline 7104	4,924 ft FNL

Chevron plans to drill this well using a dynamically positioned drilling vessel. Our assessment addresses the seafloor conditions within a 2,000-ft radius around the proposed wellsite location.

Available Data

The following discussion is based on findings from the reports listed below:

- Geologic and Stratigraphic Assessment in Blocks WR 633, 634, 677, and 678 (GEMS, 2000)
- Preliminary Geologic Site Assessment in Blocks WR 633, 634, 677, and 678 (GEMS, 2006)
- Geologic and Stratigraphic Assessment in Blocks WR 677 and 678 (GEMS, 2008)
- Geologic Assessment for Planned Flowlines in Blocks WR 634 to 677-678 and Umbilical in Blocks 718 to 634 (GEMS, 2011a)
- Jack-St. Malo Development Area Archaeological Assessment (GEMS, 2011b)

The text, maps, and figures included in the reports provide detail on the regional geology and archaeology of the Study Area. For this assessment, GEMS used two sets of geophysical data provided by Chevron: a 3-D exploration seismic time volume and high-resolution geophysical data.

Proprietary 3-D Seismic Data. Chevron provided GEMS a 2-ms 3-D seismic time volume in 2000 that covers Blocks 588-591, 632-635, 676-679, and 720-723 (GEMS, 2000). The subsurface time to depth conversions at the proposed wellsite were calculated using the following equation, where x is two-way travel time in seconds below the mudline: $\text{Depth (feet)} = -513.79 \cdot x^3 + 2119.7 \cdot x^2 + 2017.5 \cdot x$.

This polynomial was generated from a Chevron velocity gradient and was first used for the Geologic and Stratigraphic Assessment in Blocks 633, 634, 677, and 678 (GEMS, 2000).

Proprietary AUV Data. The high-resolution data were collected by Fugro GeoServices, Inc., (FGSI) in February to March 2008 using an Autonomous Underwater Vehicle (AUV). The AUV data included 120 kHz side-scan sonar, 2-12 kHz subbottom profiler, 3 m (10 ft) bin multibeam bathymetry, and 1 m (3 ft) bin multibeam backscatter data.

Proprietary Geotechnical Data. Chevron provided GEMS with the results of a geotechnical program performed by FGSI in 2008. The results from the laboratory testing are integrated into GEMS' Geologic and Stratigraphic Assessment in Blocks WR 677 and 678 (GEMS, 2008).

Public Data. GEMS established the study's regional framework by referencing public sources such as BOEM and various published technical papers. GEMS has compiled a database of information including Federal lease blocks of reported chemosynthetic communities, shallow water flow, shipwrecks, obstructions, and infrastructure (BOEM, 2025a).

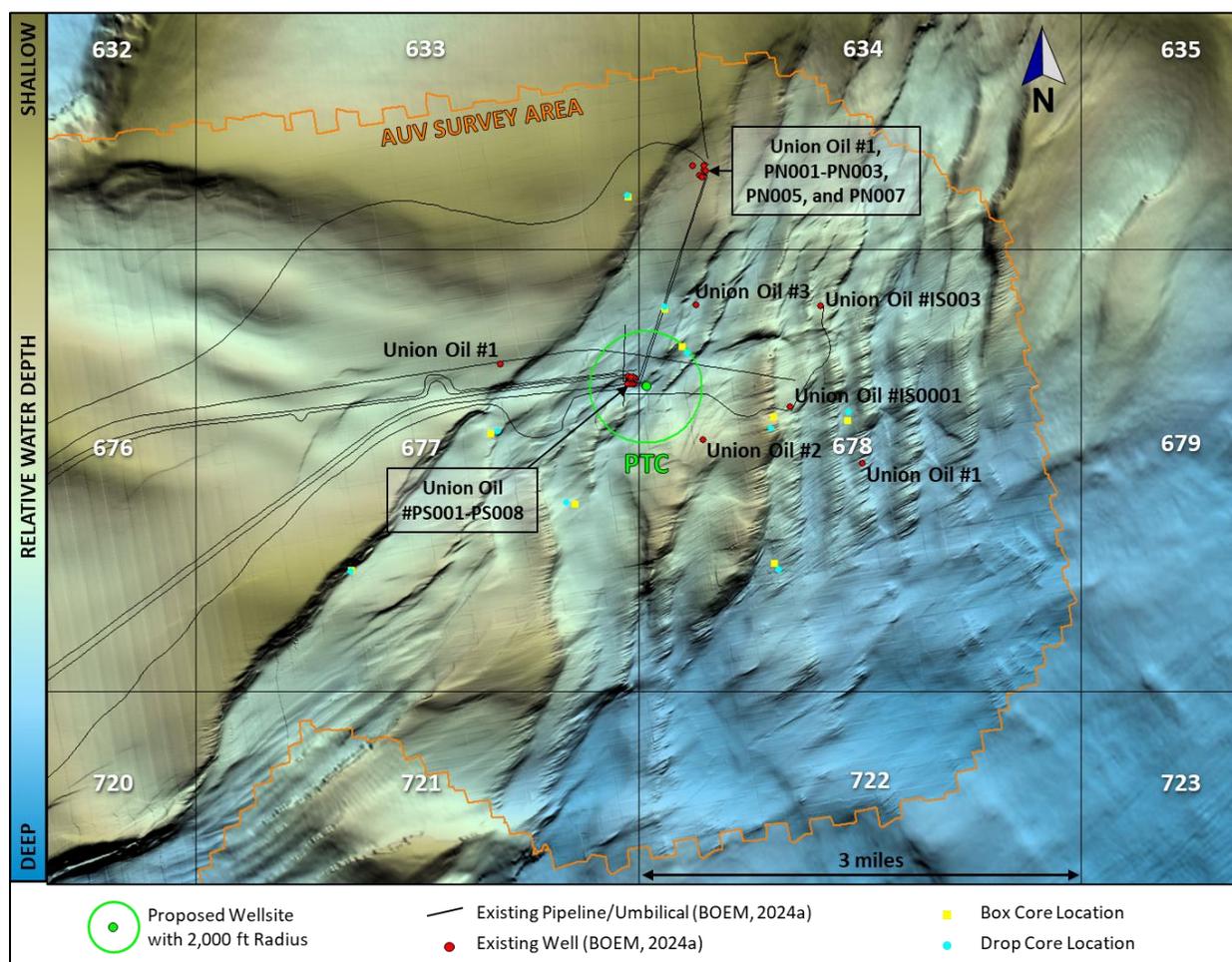


Figure WR 678 PTC-1. Seafloor Rendering Showing the Proposed Surface Location.

Attachments

Wellsite maps are centered on the Proposed Wellsite PTC and are displayed at a 1 inch = 1,000 ft scale (1:12,000). The maps included in this letter are as follows:

Map No. WR 678 PTC-1:	Bathymetry Map
Map No. WR 678 PTC-2:	Seafloor Gradient Map
Map No. WR 678 PTC-3:	Seafloor Features Map
Map No. WR 678 PTC-4:	Side-Scan Sonar Mosaic
Map No. WR 678 PTC-5:	Seafloor Amplitude Rendering
Map No. WR 678 PTC-6:	Geologic Features Map

The accompanying illustrations were extracted from the available datasets and are listed below:

Illustration WR 678 PTC-1:	Portion of Subbottom Profiler Line 124 Showing Near-Surface Conditions Beneath Proposed Wellsite PTC
Illustration WR 678 PTC-2:	Portions of Inline 14895 and Crossline 7104 Showing Conditions Beneath Proposed Wellsite PTC
Illustration WR 678 PTC-3:	Tophole Prognosis Chart, Proposed Wellsite PTC, Walker Ridge Area, Block 678

NTL Requirements

The following report complies with the Bureau of Ocean Energy Management (BOEM) guidelines including: NTL 2008-G04, NTL 2009-G40, and NTL 2022-G01 (MMS, 2008, 2010, BOEM, 2022) with respect to benthic community and shallow hazard assessments. WR 678 is not located within a Military Warning Area (BOEM, 2014) or an Ordnance Dumpsite Area.

Mitigation guidelines historically required an archaeological assessment of all surveyed blocks prior to any bottom disturbing activities. An archeological assessment of the area of potential effect around the proposed surface location may be required as per NTL 2020-G07 (BOEM, 2020). GEMS prepared an archaeological assessment to comply with the Archaeological Resource Surveys and Reports requirements and submitted the report to Chevron in June 2011 (GEMS, 2011b).

As specified in NTL 2022-G01 (BOEM, 2022), GEMS extracted the power spectrum diagram from the 3-D seismic dataset provided at the proposed wellsite (Figure WR 678 PTC-2). The extraction was generated within a 1,000-ft radius of the intersection of the inline and crossline at the proposed wellsite. The extraction time interval consisted of the seafloor to the Top of Salt. We converted the amplitude vs. frequency spectrum, generated by the IHS Kingdom software, to power vs. frequency by squaring the amplitude values as described by J. A. Coffeen, 1978. The frequency bandwidth at 50% power ranges from 5 Hz to 12 Hz and from 30 Hz to 61 Hz.

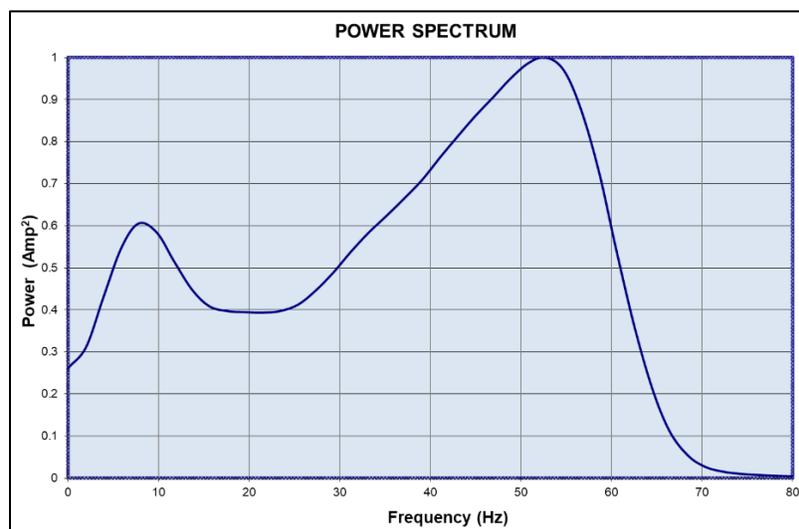


Figure WR 678 PTC-2. Power Spectrum Curve, Proposed Wellsite PTC

Man-Made Features

Eight wells, 27 bulk oil pipelines, four umbilicals, and one water line lie within a 2,000 ft radius of the proposed wellsite (Tables WR 678 PTC-2 and -3; Figure WR 678 PTC-1; Maps WR 678 PTC-1 through -6); BOEM, 2025a. The nearest well is Union Oil Company of California's (Unocal) Well #PS004, located 389 ft west of the proposed wellsite. The well is completed. The nearest flowline is Unocal's hydraulic umbilical (SN-20603), located 246 ft south of the proposed wellsite. Unocal's 10" bulk oil pipeline, comprising segments SN-18414 and SN-18453), is located 256 ft to the northwest. Caution should be exercised when working around existing infrastructure.

Table WR 678 PTC-2. Existing Wells within 2,000 ft of Proposed Well PTC

Well Name	Operator	Spud Date	Status	Distance/Direction from Proposed Well PTC
PS001	Union Oil Company of California	12/03/2011	Completed	538 ft / NW
PS002	Union Oil Company of California	12/17/2016	Completed	472 ft / W
PS003	Union Oil Company of California	11/26/2011	Completed	463 ft / NW
PS004	Union Oil Company of California	12/05/2011	Completed	389 ft / W
PS005	Union Oil Company of California	06/15/2017	Completed	560 ft / W
PS006	Union Oil Company of California	04/11/2021	Completed	646 ft / W
PS007	Union Oil Company of California	01/05/2018	Completed	708 ft / NW
PS008	Union Oil Company of California	10/14/2023	Completed	623 ft / NW

Table WR 678 PTC-3. Existing Flowlines within 2,000 ft of Proposed Well PTC

Segment	Operator	Type	Status	Distance/Direction from Proposed Well PTC
SN-18385	Union Oil Company of California	10" Bulk Oil	Active	850 ft / NW
SN-18386	Union Oil Company of California	10" Bulk Oil	Active	735 ft / W
SN-18387	Union Oil Company of California	7" Bulk Oil	Active	491 ft / WNW
SN-18388	Union Oil Company of California	7" Bulk Oil	Active	472 ft / W
SN-18389	Union Oil Company of California	7" Bulk Oil	Active	460 ft / WNW
SN-18390	Union Oil Company of California	7" Bulk Oil	Active	392 ft / W
SN-18391	Union Oil Company of California	10" Bulk Oil	Active	354 ft / WNW
SN-18392	Union Oil Company of California	10" Bulk Oil	Active	355 ft / WNW
SN-18393	Union Oil Company of California	7" Bulk Oil	Active	564 ft / W
SN-18394	Union Oil Company of California	7" Bulk Oil	Active	646 ft / W
SN-18395	Union Oil Company of California	7" Bulk Oil	Active	658 ft / WNW
SN-18396	Union Oil Company of California	7" Bulk Oil	Active	626 ft / WNW
SN-18397	Union Oil Company of California	10" Bulk Oil	Active	491 ft / WNW
SN-18398	Union Oil Company of California	10" Bulk Oil	Active	487 ft / WNW
SN-18399	Union Oil Company of California	10" Bulk Oil	Active	657 ft / WNW
SN-18400	Union Oil Company of California	10" Bulk Oil	Active	655 ft / WNW
SN-18401	Union Oil Company of California	10" Bulk Oil	Active	785 / WNW
SN-18402	Union Oil Company of California	10" Bulk Oil	Active	735 ft / W
SN-18403	Union Oil Company of California	10" Bulk Oil	Active	781 ft / WNW
SN-18404	Union Oil Company of California	10" Bulk Oil	Active	744 ft / W
SN-18405	Union Oil Company of California	10" Bulk Oil	Active	777 ft / WNW
SN-18406	Union Oil Company of California	10" Bulk Oil	Active	841 ft / WNW
SN-18413	Union Oil Company of California	10" Bulk Oil	Active	354 ft / WNW
SN-18414	Union Oil Company of California	10" Bulk Oil	Active	256 ft / NW
SN-18453	Union Oil Company of California	10" Bulk Oil	Active	256 ft / NW
SN-20603	Union Oil Company of California	Hydraulic Umbilical	Out of Service	246 ft / S
SN-20611	Union Oil Company of California	Bulk Oil	Active	885 ft / WNW
SN-19551	Chevron U.S.A. Inc.	6" Umbilical	Active	807 ft / W
SN-20612	Union Oil Company of California	Bulk Oil	Active	894 ft / WNW
SN-20645	Union Oil Company of California	Water	Active	1,078 ft / N
SN-18430	Union Oil Company of California	9" Electro/Hydraulic	Active	1,130 ft / WNW

SN-18429	Union Oil Company of California	6" Electro/Hydraulic	Active	703 ft / NW
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Archaeological Assessment

Thirty-four unidentified side-scan sonar contacts were delineated during data review in the St. Malo Study Area (GEMS, 2011b). One side-scan sonar contact lies within a 2,000 ft radius of the proposed location (Map WR 678 PTC-4). Sonar contact No. 16 lies 933 ft south-southeast of the proposed wellsite. The contact measures 36.9 ft by 30.9 ft with no measurable height and is described as irregular. No archaeological avoidances or known shipwrecks exist near the proposed site. However, if any wood, ceramics, textiles or ferrous objects become exposed during the course of bottom disturbing operations, all activities must be halted and BOEM notified within 48 hours.

Wellsite Conditions

The proposed location lies along a highly faulted region of seafloor and is approximately 186 ft southeast of a seafloor fault (Illustration WR 678 PTC-1; Map WR 678 PTC-3). Seafloor furrows are evident on the seafloor within 2,000 ft of the proposed wellsite, indicating the presence of bottom currents; however, there is no evidence of furrows at the proposed location. It is possible that periodic high currents may exist in the region of the proposed wellsite.

The shallow stratigraphy at the proposed well location consists of interbedded hemipelagic clays and silts, turbidites, and mass-transport deposits with some possible thin sands. The following discussions on stratigraphy and lithology are based on seismic character and shallow core data provided by Chevron.

Water Depth and Seafloor Conditions. The water depth at the proposed surface location is -7,031 ft and the seafloor slopes at 0.7° to the north (Maps WR 678 PTC-1 and -2).

The proposed location lies along a highly faulted region of seafloor. The nearest seafloor fault is approximately 186 ft to the northwest and is oriented southwest to northeast (Illustration WR 678 PTC-1; Maps WR 678 PTC-3 and -6). The fault exhibits a seafloor offset of approximately 6 ft in the vicinity of the wellsite and is downthrown to the southeast, towards the proposed location. Additional seafloor faults are located approximately 140 ft southeast, 210 ft northeast, and 625 ft southeast of the proposed location. These faults are oriented southwest to northeast and are downthrown to the southeast, away from the proposed location.

The seafloor at the proposed location is relatively irregular due to the presence of numerous seafloor faults (Map WR 678 PTC-3). Slopes immediately up-dip of the proposed wellsite are in the range of 5 to 10° along a seafloor fault. A regional seafloor fault located approximately 3,200 ft northwest of the proposed location exhibits slopes up to 30°. However, any potential sediment failure events along these fault scarps are expected to be localized.

The low seafloor amplitude response and side-scan sonar reflectivity in the vicinity of the proposed wellsite suggest the seabed is covered by soft clays (Maps WR 678 PTC-4 and -5).

Deepwater Benthic Communities. Federal lease Blocks WR 677 and 678 are not designated as an area having high-density deepwater benthic communities (MMS, 2010). No geophysical indicators at the seafloor nor at depth suggest conditions capable of supporting high-density deepwater benthic communities at the proposed wellsite (Maps WR 678 PTC-3 through -5).

The Side-Scan Sonar Mosaic and Seafloor Amplitude Rendering (Maps WR 678 PTC-4 and -5) show normal or ambient returns along the seabed with no indication of any hard-bottom or fluid expulsion events within 2,000 ft of the proposed well. Furthermore, BOEM does not list any areas of positive or negative seafloor anomalies within 2,000 ft of the proposed location (BOEM, 2025b).

Stratigraphy. The stratigraphy at the proposed well location is depicted on Illustrations WR 678 PTC-1 through -3. The Tophole Prognosis Chart (Illustration WR 678 PTC-3) shows the inline, annotated with depths to the various horizons and predicted lithology of the sequences, along with their potential for shallow gas and shallow water flow. Three horizons (Horizons A, B, and C) and the Top of Salt were mapped within the suprasalt stratigraphy within the Study Area to define the stratigraphic facies; however, Horizon C was not defined at the proposed well location.

The subbottom profiler data define the upper approximate 140 ft of section beneath the mudline around the proposed wellsite (Illustration WR 678 PTC-1). The uppermost ~5 ft of sediment at the well is a hemipelagic drape consisting of layered, soft, high water content clays. Beneath the drape are alternating bedded hemipelagic clays and silts. The triplet, a series of clayey silt to silt layers deposited between ~18.9 and 20.2 thousand years ago, will be encountered at about 10 ft bml. Thin mass transport deposits (MTDs) may be encountered below 68 ft bml.

Several box cores and drop cores were acquired within the St. Malo development area in 2008. The nearest cores are drop core STM-D07 and box core STM-B07, located 1,932 ft and 1,946 ft northeast of the proposed wellsite, respectively (Maps WR 678 PTC-3 and -6), and are in a geologically analogous location to the proposed location (Figure WR 678 PTC-1). The box core and drop core recovered 2.67 ft and 13.17 ft of very soft clay, respectively. The near surface soils within the St. Malo development area consist of very soft, highly plastic, normally consolidated clays (GEMS, 2008).

The 3-D sections illustrate the stratigraphy from the seafloor to the Top of Salt at about 1,251 ft bml (Illustrations WR 678 PTC-2 and -3). The sediments between the seafloor and Horizon A (0 ft to 276 ft bml) consist of stratified pelagic and hemipelagic clays and silts likely interbedded with thin clay-rich mass-transport deposits beneath 68 ft bml. The sediments between Horizon A and Horizon B (276 ft to 410 ft bml) are primarily clays and silts interlayered with fine-grained turbidite deposits. Thin sand seams may be interspersed within this stratigraphic sequence. The stratigraphic unit below 410 ft bml to the Top of Salt (1,251 ft bml) consists of bedded hemipelagic clays and fine-grained turbidite deposits interlayered with chaotic mass transport deposits. The unit is likely primarily clay-rich; however, some thin sand layers are likely to be encountered. The sediments in this unit have been highly disturbed, faulted, and fractured by the influx of shallow salt.

Faults. The seafloor and near-surface buried faults (mapped from the subbottom profiler data) were reanalyzed in the vicinity of the proposed wellsite for this assessment. Proposed Wellsite PTC may encounter a seafloor fault within the conductor zone. The fault is located approximately 186 ft northwest of the proposed wellsite and is downthrown to the southeast, towards the wellsite. The intersection of the fault at the wellsite is deeper than the penetration of the subbottom profiler and is not well imaged on the 3-D seismic data (Illustrations WR 678 PTC-1 through -3). The 3-D seismic data indicates a potential intersection at approximately 220 ft bml; however, extending the fault trace on the subbottom profiler data indicates a crossing depth of approximately 375 ft bml. The subbottom profiler line crosses the fault at an oblique angle, indicating this intersection depth may not be accurate. Three buried faults are expected to be encountered at depths of 160 ft, 410 ft and 704 ft bml (Illustrations WR 678 PTC-1 through -3). Additional faults may be encountered, particularly between Horizon B and the Top of Salt (410 ft to 1,251 ft bml) that cannot be resolved by the 3-D dataset. Lost circulation may occur across fault planes.

Shallow Gas and Shallow Water Flow. The subsurface amplitude anomalies surrounding the wellsite were reanalyzed for this assessment. No amplitude anomalies indicative of shallow gas were identified in the vicinity of the proposed wellsite. Significant shallow gas is unlikely within the shallow sediments from the seafloor to the Top of Salt (1,251 ft bml); Illustration WR 678 PTC-3. The potential for shallow water flow is negligible. Shallow water flow was not reported at any nearby wells.

Shallow Gas. The nearest mapped amplitude anomaly is located greater than 3,500 ft from the proposed wellsite. A low potential exists for minor accumulations of shallow gas within thin sands from Horizon B to the Top of Salt (410 ft to 1,251 ft bml). The potential for encountering shallow gas within the hemipelagic sediments in the upper 410 ft bml is considered negligible.

Shallow Water Flow. The potential for shallow water flow at the proposed wellsite is negligible based on the lack of regionally extensive sand-prone complexes in the shallow section and the absence of reported water flow incidents from nearby wells (BOEM, 2025c). Thin sand seams may be encountered at the proposed well location; however, the potential for an overpressured environment is unlikely because of the extensive faulting and thin overburden above the shallow salt.

Results

The proposed wellsite PTC lies along a highly faulted region of seafloor. The seafloor slopes to the north at 0.7°. An existing umbilical and pipeline are located 246 ft south and 256 ft northeast, respectively, of the

proposed location. Caution should be exercised when working around existing infrastructure. The proposed wellsite may encounter a seafloor fault within the conductor zone, potentially at a depth of 220 ft bml; however, the intersection of this fault is not well imaged by the subbottom profiler or 3-D seismic data. This fault scarp is located 186 ft northwest of the proposed location. Two buried faults are expected to be encountered at 410 ft and 704 ft bml. Additional faults may be encountered, particularly between 410 ft bml to the Top of Salt (1,251 ft bml), which were not resolved by the 3-D dataset. Lost circulation may occur across fault planes. The potential for shallow gas ranges from negligible to low throughout the sedimentary section above salt. There is a negligible potential for encountering shallow water flow.

Closing

We appreciate the opportunity to be of service to Chevron U.S.A. Inc. and look forward to working with Chevron on future projects.

Sincerely,

GEOSCIENCE EARTH & MARINE SERVICES,
a Geosyntec Company



Chelcy Berkey
Senior Professional/Geoscientist



Erin Williams Janes
Principal/Sr. Geoscientist



Daniel Lanier
Sr. Principal/Sr. Geoscientist

Attachments (6 Maps and 3 Illustrations)

Distribution:

Mr. Christopher Crowell, Chevron U.S.A. Inc., Houston, TX (Final Digital Copy)

REFERENCES

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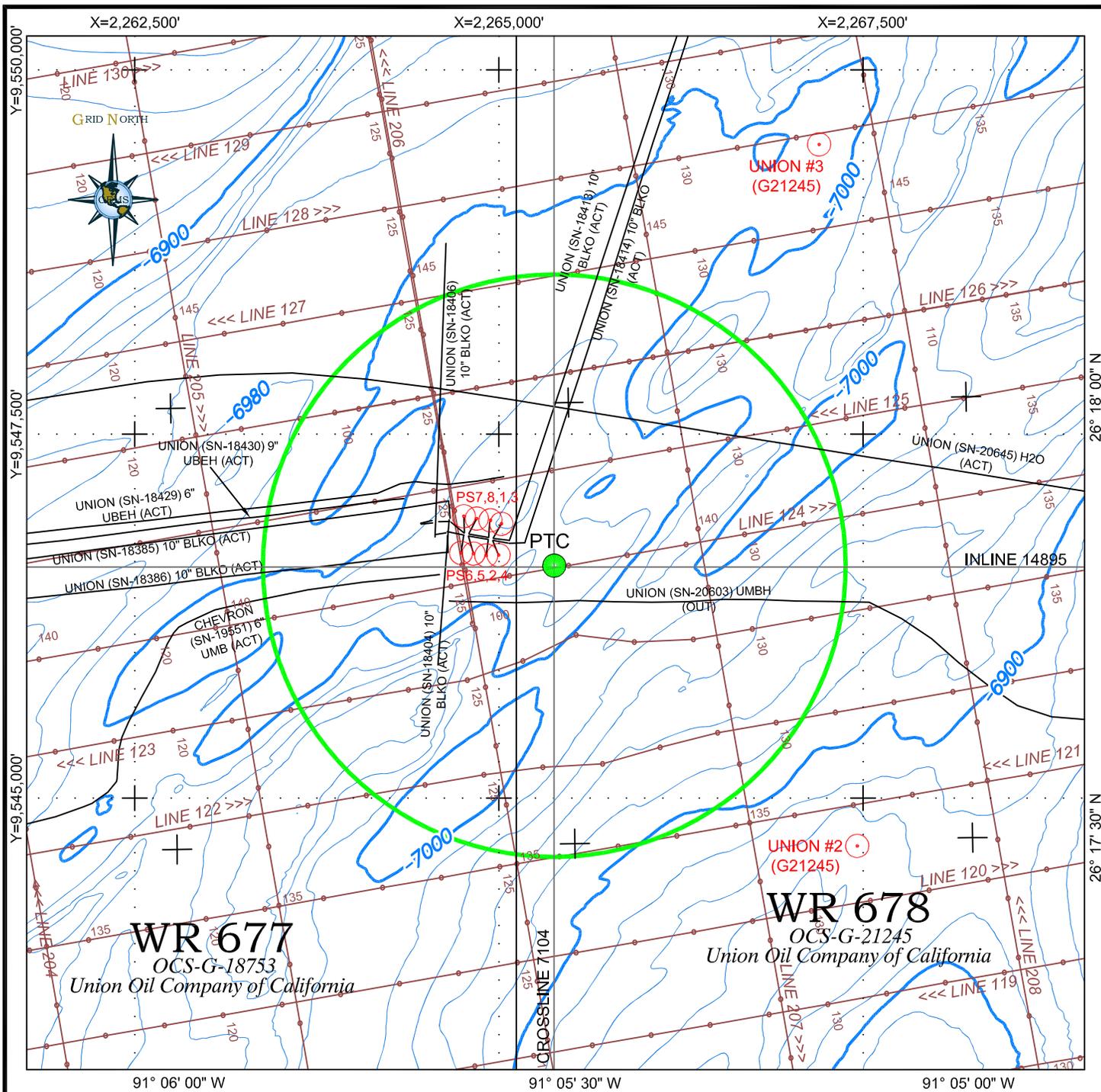
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Minerals Management Service (MMS), 2010, Notice to lessees and operators of federal oil and gas leases in the outer continental shelf, Gulf of Mexico OCS region, deepwater benthic communities: U. S. Department of the Interior, Minerals Management Service, Gulf of Mexico, NTL 2009-G40. Effective Date January 27, 2010.



-  3-D SURVEY LINE.
-  AUV LINE NUMBER, HEADING AND FIXMARK.
-  PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.
-  EXISTING WELL LOCATION, AS REPORTED BY BOEM.
-  EXISTING PIPELINE/UMBILICAL/CABLE LOCATION, AS REPORTED BY BOEM.
-  WATER DEPTH CONTOUR IN FEET.



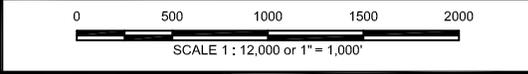
CHEVRON U.S.A. INC.

BATHYMETRY MAP

BLOCK 678

WALKER RIDGE AREA

GULF OF MEXICO



DATE: 26 SEPTEMBER 2024
 FILE NAME: 3287.DWG
 PROJECT NO.: GHZ3287

MAP NO. WR 678 PTC-1

August 22, 2025

Project No.: GHZ1163

Chevron U.S.A. Inc.
100 Northpark Blvd
Covington, LA 70433

Attention: Ms. Ashley Thrower

**Site Clearance Letter,
Proposed Wellsite WR 678 IS002,
Block 677 (OCS-G-18753),
Walker Ridge Area,
Gulf of America**

Chevron U.S.A. Inc. (Chevron) contracted Geoscience Earth & Marine Services (GEMS), a Geosyntec Company, to provide an assessment of the seafloor and shallow geologic conditions to determine the favorability of drilling operations for the proposed wellsite WR 678 IS002 with a surface location in Block 677 (OCS-G-18753), Walker Ridge Area, Gulf of America. This letter addresses specific seafloor and subsurface conditions around the proposed location to the Top of Salt at a depth of about 1,190 ft below the mudline (bml).

The proposed wellsite lies along a highly faulted region of seafloor. The proposed wellsite will intersect a seafloor fault within the conductor zone at approximately 70 ft bml. An additional seafloor fault will be encountered at 1,099 ft bml and a buried fault will be encountered at 338 ft bml. No potential sites for deepwater benthic communities exist within 2,000 ft. There is a negligible to low potential for encountering shallow gas and negligible potential for water flow from the seafloor to the Top of Salt (Limit of Investigation).

This letter provides details specific to the well location, including available data, Notice to Lessees (NTL) requirements, man-made features, and wellsite conditions.

Proposed Well Location

The surface location for the proposed wellsite WR 678 IS002 lies in the northeastern portion of WR 677. Chevron provided the following coordinates:

Table WR 678 IS002-1. Proposed Location Coordinates

Proposed Wellsite WR 678 IS002			
Spheroid & Datum: Clarke 1866 NAD27 Projection: UTM Zone 15 North		Line Reference	Block Calls (WR 677)
X: 2,264,946.88 ft	Latitude: 26° 17' 48.6599" N	Inline 14895	173.12 ft FEL
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The text, maps, and figures included in the reports provide detail on the regional geology and archaeology of the Study Area. For this assessment, GEMS used two sets of geophysical data provided by Chevron: a 3-D exploration seismic time volume and high-resolution geophysical data.

Proprietary 3-D Seismic Data. Chevron provided GEMS a 2-ms 3-D seismic time volume in 2000 that covers Blocks 588-591, 632-635, 676-679, and 720-723 (GEMS, 2000). The subsurface time to depth conversions at the proposed wellsite were calculated using the following equation, where x is two-way travel time in seconds below the mudline: $\text{Depth (feet)} = -513.79 \cdot x^3 + 2119.7 \cdot x^2 + 2017.5 \cdot x$.

This polynomial was generated from a Chevron velocity gradient and was first used for the Geologic and Stratigraphic Assessment in Blocks 633, 634, 677, and 678 (GEMS, 2000).

Proprietary AUV Data. The high-resolution data were collected by Fugro GeoServices, Inc., (FGSI) in February to March 2008 using an Autonomous Underwater Vehicle (AUV). The AUV data included 120 kHz side-scan sonar, 2-12 kHz subbottom profiler, 3 m (10 ft) bin multibeam bathymetry, and 1 m (3 ft) bin multibeam backscatter data.

Proprietary Geotechnical Data. Chevron provided GEMS with the results of a geotechnical program performed by FGSI in 2008. The results from the laboratory testing are integrated into GEMS' Geologic and Stratigraphic Assessment in Blocks WR 677 and 678 (GEMS, 2008).

Public Data. GEMS established the study's regional framework by referencing public sources such as BOEM and various published technical papers. GEMS has compiled a database of information including Federal lease blocks of reported chemosynthetic communities, shallow water flow, shipwrecks, obstructions, and infrastructure (BOEM, 2025a).

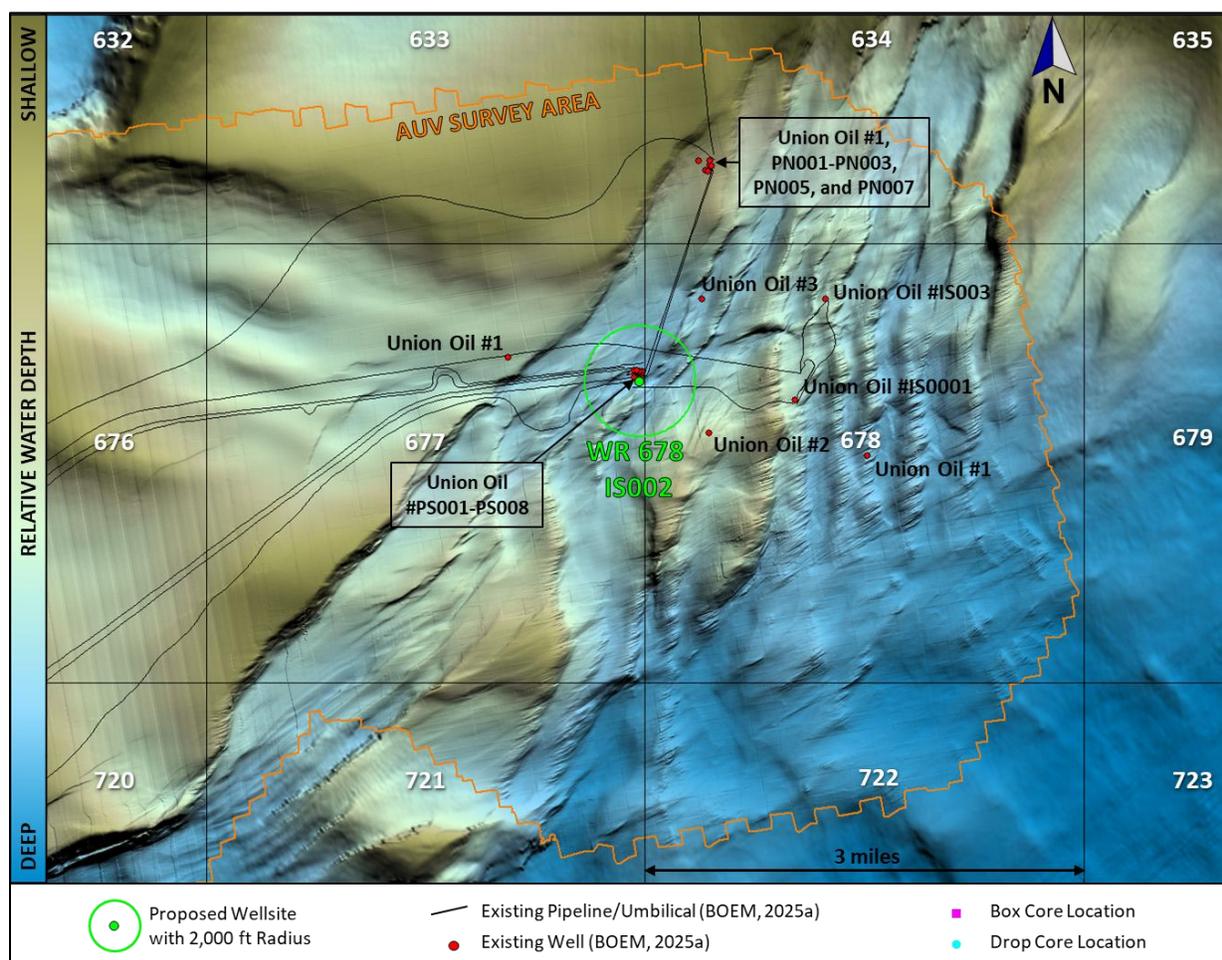


Figure WR 678 IS002-1. Seafloor Rendering Showing the Proposed Surface Location.

Attachments

Wellsite maps are centered on the Proposed Wellsite WR 678 IS002 and are displayed at a 1 inch = 1,000 ft scale (1:12,000). The maps included in this letter are as follows:

Map No. WR 678 IS002-1:	Bathymetry Map
Map No. WR 678 IS002-2:	Seafloor Gradient Map
Map No. WR 678 IS002-3:	Seafloor Features Map
Map No. WR 678 IS002-4:	Side-Scan Sonar Mosaic
Map No. WR 678 IS002-5:	Seafloor Amplitude Rendering
Map No. WR 678 IS002-6:	Geologic Features Map

The accompanying illustrations were extracted from the available datasets and are listed below:

Illustration WR 678 IS002-1:	Portion of Subbottom Profiler Line 124 Showing Near-Surface Conditions Beneath Proposed Wellsite WR 678 IS002
Illustration WR 678 IS002-2:	Portion of Subbottom Profiler Line 206 Showing Near-Surface Conditions Beneath Proposed Wellsite WR 678 IS002
Illustration WR 678 IS002-3:	Portions of Inline 14895 and Crossline 7094 Showing Conditions Beneath Proposed Wellsite WR 678 IS002
Illustration WR 678 IS002-4:	Tophole Prognosis Chart, Proposed Wellsite WR 678 IS002, Walker Ridge Area, Block 677

NTL Requirements

The following report complies with the Bureau of Ocean Energy Management (BOEM) guidelines including: NTL 2008-G04, NTL 2009-G40, and NTL 2022-G01 (MMS, 2008, 2010, BOEM, 2022) with respect to benthic community and shallow hazard assessments. WR 677 is not located within a Military Warning Area (BOEM, 2014) or an Ordnance Dumpsite Area.

Mitigation guidelines historically required an archaeological assessment of all surveyed blocks prior to any bottom disturbing activities. An archeological assessment of the area of potential effect around the proposed surface location may be required as per NTL 2020-G07 (BOEM, 2020). GEMS prepared an archaeological assessment to comply with the Archaeological Resource Surveys and Reports requirements and submitted the report to Chevron in June 2011 (GEMS, 2011b).

As specified in NTL 2022-G01 (BOEM, 2022), GEMS extracted the power spectrum diagram from the 3-D seismic dataset provided at the proposed wellsite (Figure WR 678 IS002-2). The extraction was generated within a 1,000-ft radius of the intersection of the inline and crossline at the proposed wellsite. The extraction time interval consisted of the seafloor to the Top of Salt. We converted the amplitude vs. frequency spectrum, generated by the IHS Kingdom software, to power vs. frequency by squaring the amplitude values as described by J. A. Coffeen, 1978. The frequency bandwidth at 50% power ranges from 5 Hz to 12 Hz and from 29 Hz to 61 Hz.

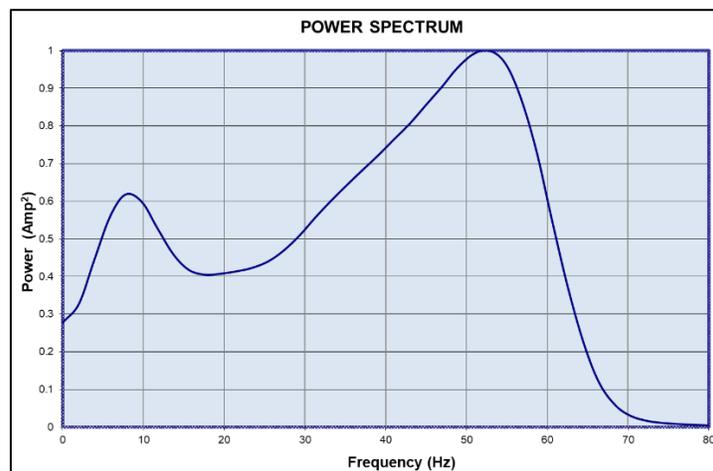


Figure WR 678 IS002-2. Power Spectrum Curve, Proposed Wellsite WR 678 IS002

Man-Made Features

Eight wells, 29 bulk oil pipelines, four umbilicals, and one water line lie within a 2,000 ft radius of the proposed wellsite (Tables WR 678 IS002-2 and -3; Figure WR 678 IS002-1; Maps WR 678 IS002-1 through -6); BOEM, 2025a. The nearest well is Union Oil Company of California's (Unocal) Well #PS002, located 108 ft north-northwest of the proposed wellsite. The well is completed. The nearest flowlines are two of Unocal's 7" bulk oil pipelines (SN-18388 and SN-18390), located 115 ft north-northwest and 123 ft north-northeast of the proposed wellsite, respectively. Caution should be exercised when working around existing infrastructure.

Table WR 678 IS002-2. Existing Wells within 2,000 ft of Proposed Well WR 678 IS002

Well Name	Operator	Spud Date	Status	Distance/Direction from Proposed Wellsite
PS001	Union Oil Company of California	12/03/2011	Completed	344 ft / N
PS002	Union Oil Company of California	12/17/2016	Completed	108 ft / NNW
PS003	Union Oil Company of California	11/26/2011	Completed	328 ft / NNE
PS004	Union Oil Company of California	12/05/2011	Completed	118 ft / NNE
PS005	Union Oil Company of California	06/15/2017	Completed	166 ft / NW
PS006	Union Oil Company of California	04/11/2021	Completed	238 ft / NW
PS007	Union Oil Company of California	01/05/2018	Completed	416 ft / NNW
PS008	Union Oil Company of California	10/14/2023	Completed	369 ft / NNW

Table WR 678 IS002-3. Existing Flowlines within 2,000 ft of Proposed Well WR 678 IS002

Segment	Operator	Type	Status	Distance/Direction from Proposed Wellsite
SN-18385	Union Oil Company of California	10" Bulk Oil	Active	558 ft / NW
SN-18386	Union Oil Company of California	10" Bulk Oil	Active	320 ft / WNW
SN-18387	Union Oil Company of California	7" Bulk Oil	Active	230 ft / N
SN-18388	Union Oil Company of California	7" Bulk Oil	Active	115 ft / NNW
SN-18389	Union Oil Company of California	7" Bulk Oil	Active	224 ft / N
SN-18390	Union Oil Company of California	7" Bulk Oil	Active	123 ft / NNE
SN-18391	Union Oil Company of California	10" Bulk Oil	Active	220 ft / N
SN-18392	Union Oil Company of California	10" Bulk Oil	Active	207 ft / N
SN-18393	Union Oil Company of California	7" Bulk Oil	Active	174 ft / NW
SN-18394	Union Oil Company of California	7" Bulk Oil	Active	242 ft / NW
SN-18395	Union Oil Company of California	7" Bulk Oil	Active	318 ft / NW
SN-18396	Union Oil Company of California	7" Bulk Oil	Active	296 ft / NW
SN-18397	Union Oil Company of California	10" Bulk Oil	Active	226 ft / N
SN-18398	Union Oil Company of California	10" Bulk Oil	Active	214 ft / N
SN-18399	Union Oil Company of California	10" Bulk Oil	Active	315 ft / NW
SN-18400	Union Oil Company of California	10" Bulk Oil	Active	307 ft / NW
SN-18401	Union Oil Company of California	10" Bulk Oil	Active	455 ft / NW
SN-18402	Union Oil Company of California	10" Bulk Oil	Active	320 ft / WNW
SN-18403	Union Oil Company of California	10" Bulk Oil	Active	441 ft / NW
SN-18404	Union Oil Company of California	10" Bulk Oil	Active	451 ft / NW
SN-18405	Union Oil Company of California	10" Bulk Oil	Active	403 ft / NW
SN-18406	Union Oil Company of California	10" Bulk Oil	Active	395 ft / NW
SN-18413	Union Oil Company of California	10" Bulk Oil	Active	242 ft / NE
SN-18414	Union Oil Company of California	10" Bulk Oil	Active	299 ft / NE
SN-18429	Union Oil Company of California	6" Electro/Hydraulic Umbilical	Active	621 ft / N
SN-18430	Union Oil Company of California	9" Electro/Hydraulic Umbilical	Active	775 ft / NW
SN-19551	Chevron U.S.A. Inc.	6" Umbilical	Active	356 ft / W
SN-18453	Union Oil Company of California	10" Bulk Oil	Active	223 ft / NE
SN-20603	Union Oil Company of California	Hydraulic Umbilical	Out of Service	218 ft / S
SN-20609	Union Oil Company of California	Bulk Oil	Active	480 ft / WNW
SN-20610	Union Oil Company of California	Bulk Oil	Active	490 ft / WNW
SN-20611	Union Oil Company of California	Bulk Oil	Active	517 ft / NW

SN-20612	Union Oil Company of California	Bulk Oil	Active	531 ft / NW
SN-20645	Union Oil Company of California	Water	Active	1,180 ft / N

Archaeological Assessment

Thirty-four unidentified side-scan sonar contacts were delineated during data review in the St. Malo Study Area (GEMS, 2011b). One side-scan sonar contact lies within a 2,000 ft radius of the proposed location (Maps WR 678 IS002-3, -4, and -6). Sonar contact No. 16 lies 1,110 ft southeast of the proposed wellsite. The contact measures 36.9 ft by 30.9 ft with no measurable height and is described as irregular. No archaeological avoidances or known shipwrecks exist near the proposed site. However, if any wood, ceramics, textiles or ferrous objects become exposed during the course of bottom disturbing operations, all activities must be halted and BOEM notified within 48 hours.

Wellsite Conditions

The proposed location lies along a highly faulted region of seafloor, with the nearest seafloor faults located 88 ft and 195 ft to the southeast. Seafloor furrows are evident on the seafloor within 2,000 ft of the proposed wellsite, and possibly at the wellsite location, as observed from the side-scan sonar mosaic (Map WR 678 IS002-4). These seafloor furrows indicate the presence of bottom currents. It is possible that periodic high currents may exist in the region of the proposed wellsite.

The shallow stratigraphy at the proposed well location consists of interbedded hemipelagic clays and silts, turbidites, and mass-transport deposits with some possible thin sands. The following discussions on stratigraphy and lithology are based on seismic character and shallow core data provided by Chevron.

Water Depth and Seafloor Conditions. The water depth at the proposed surface location is -7,036 ft and the seafloor slopes less than 1° to the northeast (Maps WR 678 IS002-1 and -2).

The seafloor in the vicinity of the wellsite is highly faulted (Map WR 678 IS002-3). The nearest seafloor fault is approximately 88 ft to the southeast, trends southwest to northeast, and is downthrown to the southeast, away from the wellsite (Illustration WR 678 IS002-1). A seafloor fault located 195 ft to the southeast of the wellsite trends southwest to northeast and is downthrown to the northwest, towards the wellsite (Illustrations WR 678 IS002-1 and -2; Maps WR 678 IS002-3 and -6). This fault exhibits a seafloor offset of approximately 40 ft in the vicinity of the wellsite with slopes up to 23°. Any potential sediment failure events along the fault scarp are expected to be localized.

The low seafloor amplitude response and side-scan sonar reflectivity in the vicinity of the proposed wellsite suggest the seabed is covered by soft clays (Maps WR 678 IS002-4 and -5).

Deepwater Benthic Communities. Federal lease Blocks WR 677 and 678 are not designated as an area having high-density deepwater benthic communities (MMS, 2010). No geophysical indicators at the seafloor nor at depth suggest conditions capable of supporting high-density deepwater benthic communities at the proposed wellsite (Maps WR 678 IS002-3 through -5).

The Side-Scan Sonar Mosaic and Seafloor Amplitude Rendering (Maps WR 678 IS002-4 and -5) show normal or ambient returns along the seabed with no indication of any hard-bottom or fluid expulsion events within 2,000 ft of the proposed well. Furthermore, BOEM does not list any areas of positive or negative seafloor anomalies within 2,000 ft of the proposed location (BOEM, 2025b).

Stratigraphy. The stratigraphy at the proposed well location is depicted on Illustrations WR 678 IS002-1 through -4. The Tophole Prognosis Chart (Illustration WR 678 IS002-4) shows the crossline, annotated with depths to the various horizons and predicted lithology of the sequences, along with their potential for shallow gas and shallow water flow. Three horizons (Horizons A, B, and C) and the Top of Salt were mapped within the suprasalt stratigraphy within the Study Area to define the stratigraphic facies; however, Horizon C was not defined at the proposed well location.

The subbottom profiler data define the upper approximate 135 ft of section beneath the mudline around the proposed wellsite (Illustration WR 678 IS002-1). The uppermost ~5 ft of sediment at the well is a hemipelagic drape consisting of layered, soft, high water content clays. Beneath the drape are alternating bedded

hemipelagic clays and silts with interbedded, thin mass-transport deposits. The triplet, a series of clayey silt to silt layers deposited between ~18.9 and 20.2 thousand years ago, will be encountered at about 12 ft bml.

Several box cores and drop cores were acquired within the St. Malo development area in 2008. The nearest cores are drop core STM-D07 and box core STM-B07, located 2,305 ft and 2,284 ft northeast of the proposed wellsite, respectively (Maps WR 678 IS002-3 and -6), and are in a geologically analogous location to the proposed location (Figure WR 678 IS002-1). The box core and drop core recovered 2.67 ft and 13.17 ft of very soft clay, respectively. The near surface soils within the St. Malo development area consist of very soft, highly plastic, normally consolidated clays (GEMS, 2008).

The 3-D sections illustrate the stratigraphy from the seafloor to the Top of Salt at about 1,190 ft bml (Illustrations WR 678 IS002-3 and -4). The sediments between the seafloor and Horizon A (0 ft to 232 ft bml) consist of stratified pelagic and hemipelagic clays and silts interbedded with thin clay-rich mass-transport deposits beneath 12 ft bml. The sediments between Horizon A and Horizon B (232 ft to 338 ft bml) are primarily clays and silts interlayered with fine-grained turbidite deposits. Thin sand seams may be interspersed within this stratigraphic sequence. The stratigraphic unit below 338 ft bml to the Top of Salt (1,190 ft bml) consists of bedded hemipelagic clays and fine-grained turbidite deposits interlayered with chaotic mass transport deposits. The unit is likely primarily clay-rich; however, some thin sand layers are likely to be encountered. The sediments in this unit have been highly disturbed, faulted, and fractured by the influx of shallow salt.

Faults. The seafloor and near-surface buried faults (mapped from the subbottom profiler data) were reanalyzed in the vicinity of the proposed wellsite. Proposed Wellsite WR 678 IS002 will likely encounter a seafloor fault within the conductor zone. The fault is located approximately 195 ft southeast of the proposed wellsite and is downthrown to the northwest, towards the wellsite. The nearest subbottom profiler line indicates that the intersection of the fault may occur at approximately 70 ft bml; however, the fault crossing is not well imaged (Illustration WR 678 IS002-1). A subbottom profiler line located 166 ft west of the wellsite intersects the seafloor fault at an oblique angle and indicates a fault crossing at approximately 167 ft bml (Illustration WR 678 IS002-2); however, the actual location of the wellsite is nearer to the fault than this line illustrates (Maps WR 678 IS002-3 and -6). Therefore, an intersection depth of approximately 70 ft is likely more accurate.

A second seafloor fault will be encountered at approximately 1,099 ft bml (Illustrations WR 678 IS002-3 and -4). A buried fault will be encountered at Horizon B (338 ft bml). Additional faults may be encountered, particularly between Horizon B and the Top of Salt (338 ft to 1,190 ft bml) that cannot be resolved by the 3-D dataset. Lost circulation may occur across fault planes.

Shallow Gas and Shallow Water Flow. The subsurface amplitude anomalies surrounding the wellsite were reanalyzed for this assessment. No amplitude anomalies indicative of shallow gas were identified in the vicinity of the proposed wellsite. Significant shallow gas is unlikely within the shallow sediments from the seafloor to the Top of Salt (1,190 ft bml); Illustration WR 678 IS002-4. The potential for shallow water flow is negligible. Shallow water flow was not reported at any nearby wells.

Shallow Gas. The nearest mapped amplitude anomaly is located greater than 3,500 ft from the proposed wellsite. A low potential exists for minor accumulations of shallow gas within thin sands from Horizon B to the Top of Salt (338 ft to 1,190 ft bml). The potential for encountering shallow gas within the hemipelagic sediments in the upper 338 ft bml is considered negligible.

Shallow Water Flow. The potential for shallow water flow at the proposed wellsite is negligible based on the lack of regionally extensive sand-prone complexes in the shallow section and the absence of reported water flow incidents from nearby wells (BOEM, 2025c). Thin sand seams may be encountered at the proposed well location; however, the potential for an overpressured environment is unlikely because of the extensive faulting and thin overburden above the shallow salt.

Results

The proposed wellsite WR 678 IS002 lies along a highly faulted region of seafloor. The seafloor slopes to the northeast at less than 1°. Eight wells and 34 flowlines are located within 2,000 ft of the proposed location. The nearest well is Unocal's Well #PS002, located 108 ft north-northwest of the proposed wellsite. The nearest pipelines are located 115 ft north-northwest and 123 ft north-northeast of the proposed wellsite. Caution

should be exercised when working around existing infrastructure. The proposed wellsite will encounter a seafloor fault within the conductor zone at an approximate depth of 70 ft bml. This fault scarp is located 195 ft southeast of the proposed location. A second seafloor fault will be encountered at approximately 1,099 ft bml and a buried fault will be encountered at 338 ft bml. Additional faults may be encountered, particularly between 338 ft bml to the Top of Salt (1,190 ft bml), which were not resolved by the 3-D dataset. Lost circulation may occur across fault planes. The potential for shallow gas ranges from negligible to low throughout the sedimentary section above salt. There is a negligible potential for encountering shallow water flow.

Closing

We appreciate the opportunity to be of service to Chevron U.S.A. Inc. and look forward to working with Chevron on future projects.

Sincerely,

GEOSCIENCE EARTH & MARINE SERVICES,
a Geosyntec Company



Chelcy Berkey
Project Professional/Geoscientist



Erin Williams Janes
Sr. Principal/Sr. Geoscientist



Daniel Lanier
Sr. Principal/ Sr. Geoscientist

Attachments (6 Maps and 4 Illustrations)

Distribution:

Ms. Ashley Thrower, Chevron U.S.A. Inc., Covington, LA (Digital Final Copy)

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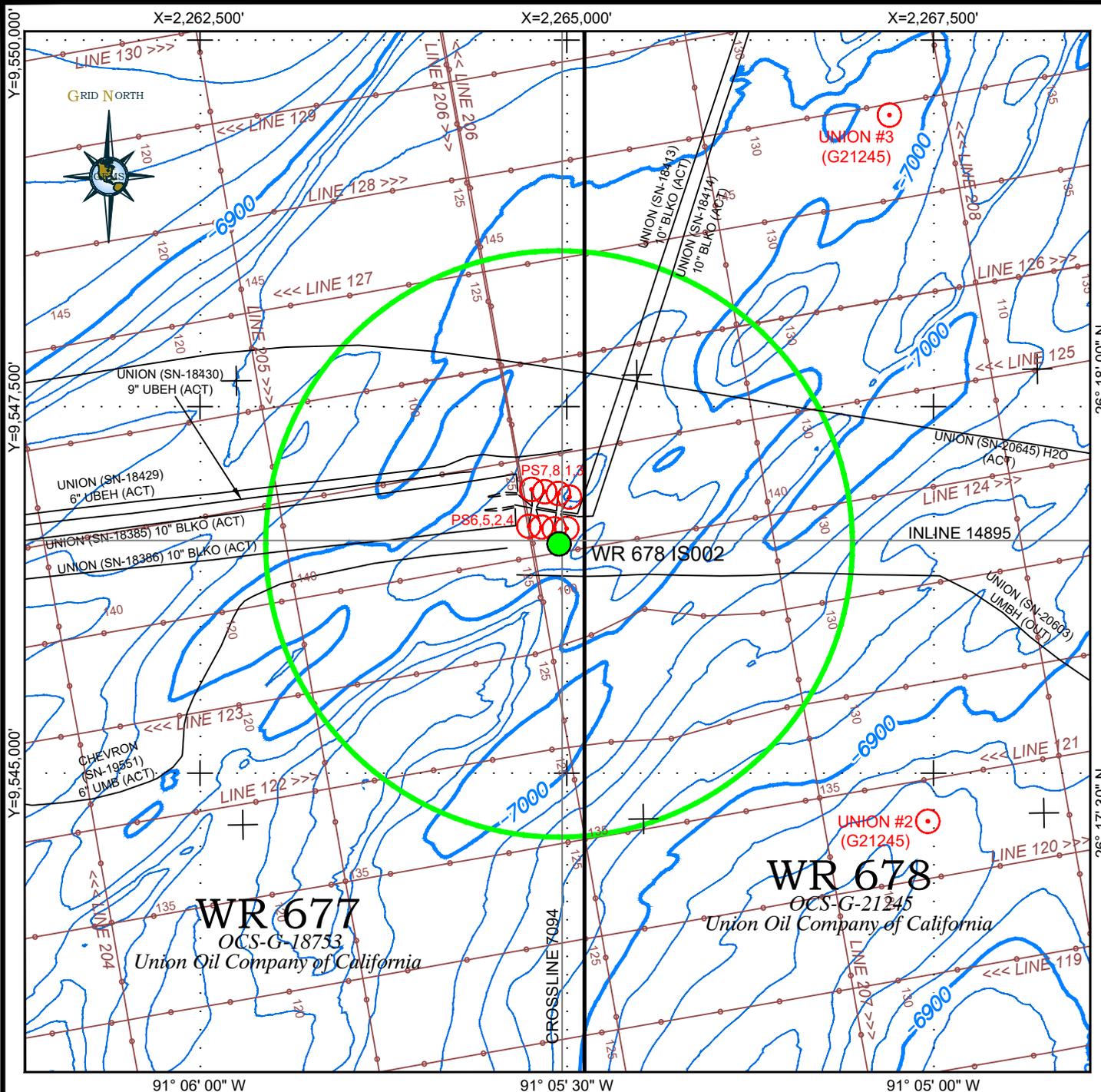
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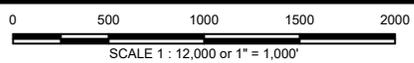
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-  3-D SURVEY LINE.
-  AUV LINE NUMBER, HEADING AND FIXMARK.
-  PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.
-  EXISTING WELL LOCATION, AS REPORTED BY BOEM.
-  EXISTING PIPELINE/UMBILICAL/CABLE LOCATION, AS REPORTED BY BOEM.
-  WATER DEPTH CONTOUR IN FEET (CONTOUR INTERVAL = 20 FT).



BATHYMETRY MAP
BLOCK 677
WALKER RIDGE AREA
GULF OF AMERICA



DATE: 22 AUGUST 2025
 FILE NAME: 1163_WELLREV.DWG
 PROJECT NO.: GHZ1163

MAP NO. WR 678 IS002-1

SECTION D HYDROGEN SULFIDE (H₂S) INFORMATION

(a) CONCENTRATION

It is not expected that H₂S will be encountered or handled while conducting the activities proposed in this plan.

(b) CLASSIFICATION

In response to the request accompanying the revised plan, R-7382, for a hydrogen sulfide (H₂S) classification, the area in which the proposed drilling operations are to be conducted is hereby classified, in accordance with 30 CFR 250.490(c), as "H₂S absent." Classification granted July 18, 2025.

SECTION E BIOLOGICAL, PHYSICAL, AND SOCIOECONOMIC INFORMATION

(a) HIGH-DENSITY DEEPWATER BENTHIC COMMUNITIES INFORMATION

Chevron contracted GEMS to prepare Site Clearance Letters for the surface locations of the wells proposed in this plan. The site clearance letters address specific seafloor and subsurface geologic conditions near the proposed locations to the Top of Salt along with containing Deepwater benthic community reviews. The letters complied with the BOEM Notice to Lessees (NTL No.'s): 2008-G04, 2008-G05 and 2009-G40.

The proposed wells in this plan will be drilled with dynamically positioned drillships, so there are no associated anchors, anchor chain or wire ropes.

High-Density Deepwater Benthic Communities Summary Statement from the Site Clearance Letters for the proposed surface locations:

IS002:

Federal lease Blocks WR 677 and 678 are not designated as an area having high-density deepwater benthic communities (MMS, 201 O). No geophysical indicators at the seafloor nor at depth suggest conditions capable of supporting high-density deepwater benthic communities at the proposed wellsite (Maps WR 678 IS002-3 through -5) .

The Side-Scan Sonar Mosaic and Seafloor Amplitude Rendering (Maps WR 678 IS002-4 and -5) show normal or ambient returns along the seabed with no indication of any hard-bottom or fluid expulsion events within 2,000 ft of the proposed well. Furthermore, BOEM does not list any areas of positive or negative seafloor anomalies within 2,000 ft of the proposed location (BOEM, 2025b).

PTC:

Federal lease Blocks WR 677 and 678 are not designated as an area having high-density deepwater benthic communities (MMS, 2010). No geophysical indicators at the seafloor nor at depth suggest conditions capable of supporting high-density deepwater benthic communities at the proposed wellsite (Maps WR 678 PTC-3 through -5). The Side-Scan Sonar Mosaic and Seafloor Amplitude Rendering (Maps WR 678 PTC-4 and -5) show normal or ambient returns along the seabed with no indication of any hard-bottom or fluid expulsion events within 2,000 ft of the proposed well. Furthermore, BOEM does not list any areas of positive or negative seafloor anomalies within 2,000 ft of the proposed location (BOEM, 2025b).

(b) TOPOGRAPHIC FEATURES MAP

The proposed bottom disturbing activity is greater than 305 meters (1,000 feet) from the “No Activity Zone” of an identified topographic feature; therefore the map described in Attachment 2, Section A, Item No. 1 of NTL No. 2004-G05 is not required for this plan based on the guidelines provided in NTL No. 2008-G04.

(c) TOPOGRAPHIC FEATURES STATEMENT (SHUNTING)

Chevron does not propose to drill two wells from the same surface location outside the 1-mile Zone but within the Protective Zone of an identified topographic feature. The statement described in Attachment 2, Section A, Item No.2 of NTL No. 2004-G05 is not required for this plan based on the guidelines provided in NTL No. 2008-G04.

(d) LIVE BOTTOMS (PINNACLE TREND) MAP

The leases in this proposed plan do not have the Live Bottoms (Pinnacle Trend) stipulation.

(e) LIVE BOTTOMS (LOW RELIEF) MAP

The leases in this proposed plan do not have the Live Bottoms (Low Relief) stipulation.

(f) POTENTIALLY SENSITIVE BIOLOGICAL FEATURES

No bottom disturbing activities will be within 30 meters (100 feet) of potentially sensitive biological features. Therefore the map described in Attachment 8, Section A of NTL No. 2004-G05 is not required for this plan based on the guidelines provided in NTL No. 2008-G04.

(g) REMOTELY OPERATED VEHICLE (ROV) MONITORING SURVEY PLAN

This plan is no longer required.

(h) THREATENED OR ENDANGERED SPECIES, CRITICAL HABITAT, AND MARINE MAMMAL INFORMATION

This section discusses species listed as endangered or threatened under the Endangered Species Act (ESA). In addition, it includes all marine mammal species in the region, which are protected under the Marine Mammal Protection Act (MMPA).

The sperm whale, five species of sea turtles, and the oceanic whitetip shark are the only endangered or threatened species likely to occur at or near the lease area. Critical habitat has been designated for the loggerhead turtle. No critical habitat has been designated in the Gulf of Mexico for the sperm whale or the other sea turtle species.

Coastal endangered or threatened species include the West Indian manatee, Piping Plover, Florida salt marsh vole, Whooping Crane, Gulf sturgeon, and four subspecies of beach mouse. Critical habitat has been designated for all of these species except the Florida salt marsh vole.

Federally listed endangered and threatened species potentially occurring in the lease area and along the northern Gulf Coast:

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in Gulf of Mexico
			Project Area	Coastal	
Marine Mammals					
Bryde's whale	<i>Balaenoptera edeni</i>	E	X	--	None
Sperm whale	<i>Physeter macrocephalus</i>	E	X	--	None
West Indian manatee	<i>Trichechus manatus</i> ¹	T	--	X	Florida (Peninsular)
Sea Turtles					
Loggerhead turtle	<i>Caretta caretta</i>	T,E ²	X	X	Nesting beaches and nearshore reproductive habitat in Mississippi, Alabama, and Florida (Panhandle); <i>Sargassum</i> habitat including most of the central & western Gulf of Mexico.
Green turtle	<i>Chelonia mydas</i>	T	X	X	None
Leatherback turtle	<i>Dermochelys coriacea</i>	E	X	X	None
Hawksbill turtle	<i>Eretmochelys imbricata</i>	E	X	X	None
Kemp's ridley turtle	<i>Lepidochelys kempii</i>	E	X	X	None
Birds					
Piping Plover	<i>Charadrius melodus</i>	T	--	X	Coastal Texas, Louisiana, Mississippi, Alabama, and Florida (Panhandle)
Whooping Crane	<i>Grus americana</i>	E	--	X	Coastal Texas (Aransas National Wildlife Refuge)
Fishes					
Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	T	X	--	None
Giant manta ray	<i>Mobula birostris</i>	T	X	X	None
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	T	--	X	Coastal Louisiana, Mississippi, Alabama, and Florida (Panhandle)
Nassau grouper	<i>Epinephelus striatus</i>	T	--	X	None
Smalltooth sawfish	<i>Pristis pectinata</i>	E	--	X	Southwest Florida
Invertebrates					
Elkhorn coral	<i>Acropora palmata</i>	T	--	X	Florida Keys and the Dry Tortugas
Staghorn coral	<i>Acropora cervicornis</i>	T	--	X	Florida Keys and the Dry Tortugas
Pillar coral	<i>Dendrogyra cylindrus</i>	T	--	X	None
Rough cactus coral	<i>Mycetophyllia ferox</i>	T	--	X	None
Lobed star coral	<i>Orbicella annularis</i>	T	--	X	None
Mountainous star coral	<i>Orbicella faveolata</i>	T	--	X	None
Boulder star coral	<i>Orbicella franksi</i>	T	--	X	None
Terrestrial Mammals					
Beach mice (Alabama, Choctawhatchee, Perdido Key, St. Andrew)	<i>Peromyscus polionotus</i>	E	--	X	Alabama and Florida (Panhandle) beaches
Florida salt marsh vole	<i>Microtus pennsylvanicus dukecampbelli</i>	E	--	X	None

Abbreviations: E = Endangered; T = Threatened; X = potentially present; -- = not present.

There are two subspecies of West Indian manatee: the Florida manatee (*T. m. latirostris*), which ranges from the northern Gulf of Mexico to Virginia, and the Antillean manatee (*T. m. manatus*), which ranges from northern Mexico to eastern Brazil. Only the Florida manatee subspecies is likely to be found in the northern Gulf of Mexico. On 30 March 2017, the USFWS announced the West Indian manatee, including the Florida manatee subspecies, was reclassified as threatened.

²The loggerhead turtle is composed of nine distinct population segments (DPS). The only DPS that may occur in the project area (Northwest Atlantic DPS) is listed as threatened (76 Federal Register [FR] 58868; 22 September 2011).

(i) ARCHAEOLOGICAL REPORT

Chevron contracted Fugro GeoServices, Inc. (FGSI) to conduct high-resolution geophysical surveys in 2008 and 2010 in the “Jack-St. Malo” Development Area. The AUV collected side-scan sonar, subbottom profiler, and multibeam bathymetric data. GEMS was contracted by Chevron to examine the data collected and to locate any potential submerged cultural resources. GEMS prepared archaeological assessments to comply with the Archaeological Resource Surveys and Reports requirements in NTL No.’s 2005-G07 and 2008-G20.

GEMS completed the archaeological report, “Jack-St. Malo Development Area Archaeological Assessment, Blocks 631-634, 671, 674-678, 714-721, 758-764, 802-805, Walker Ridge Area, Gulf of Mexico”, GEMS Project No. 0311-1903, in June of 2011 based on the 2008 and 2010 AUV data. This report has been submitted previously to the BOEM.

Archaeological Assessment Summary:

Blocks 631-634, 671, 674-678, 714-721, 758-764, and 802-805, Walker Ridge Area

- Water depths across the surveyed area range from approximately 6,520 feet below Mean Sea Level (MSL) to approximately 7,500 feet below MSL.
- Two-hundred-thirty-nine (239) unidentified sonar contacts are located within the combined surveyed area.
- No sonar contacts are recommended for archaeological avoidance or investigation based on the reviewed data.
- The unidentified side-scan sonar contacts likely represent modern debris associated with shipping, exploratory, or storm activities.

Recommendations

No areas covered by the blocks in this report were designated as archaeologically sensitive. No sonar contacts are recommended for archaeological avoidance, but care should be exercised when working on the seabed near the side-scan sonar contacts. Should any potentially historic materials such as textiles, wood, ceramics, or other items be uncovered during operations in the area, all operations must cease and BOEM be notified within 48 hours.

SECTION F WASTE AND DISCHARGE INFORMATION

(a) PROJECTED GENERATED WASTES

(b) PROJECTED OCEAN DISCHARGES

Water Quality Spreadsheets, included below, replace the Projected Generated Wastes and the Projected Generated Ocean Discharges Tables.

TABLE 1. WASTES YOU WILL GENERATE, TREAT AND DOWNHOLE DISPOSE OR DISCHARGE TO THE GOM ~ St. Malo - 200 drilling days

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	Composition	Projected Amount	Discharge rate	Discharge Method	Answer yes or no
Will drilling occur ? If yes, you should list muds and cuttings					
Water-based drilling fluid	Water-based drilling muds	18,544 bbls/well	1,544 bbls/day	Discharge at mudline prior to riser installation.	No
Cuttings wetted with water-based fluid	Cuttings coated with water-based drilling muds	2,754 bbls/well	275 bbls/day	Discharge at mudline prior to riser installation.	No
Cuttings wetted with synthetic-based fluid	Cuttings coated with Synthetic drilling muds, including drilled out cement	6,861 bbls/well	36 bbls/day	Treated cuttings will be discharged overboard during drilling of SBM interval. Cuttings will pass through cuttings dryer substantially reducing ROC percentage from worst case quoted below. Or stored in cutting boxes and transported to shore.	No
Will humans be there? If yes, expect conventional waste					
Domestic waste	Gray water from living quarters,control	75,400 bbls/well	377 bbls/day	Food grinder. Starboard Caisson.	No
Sanitary waste	Sanitary waste from living quarters,control rooms, and common	37,400 bbls/well	187 bbls/day	USCG-approved MSD with chlorination. Starboard Caisson.	No
Is there a deck? If yes, there will be Deck Drainage					
Deck Drainage	Deck drainage from drilling floor,	227,400 bbls/well	1,137 bbls/day	Hull discharge overboard.	No
Will you conduct well treatment, completion, or workover?					
Well completion fluids	N/A	N/A	N/A	N/A	No
Miscellaneous discharges. If yes, only fill in those associated with your activity.					
Desalinization unit discharge	Rejected water from watermaker unit	365,400 bbls/well	1,827 bbls/day	Hull discharge overboard.	No
Blowout prevent fluid	Stackmagic 200/0/5% glycol based on 2% mixture with potable water	416 bbls/well	2.08 bbls/day	discharge at sea floor, or w/ deck drainage when tested on the surface	No
Ballast water	Uncontaminated seawater used to maintain proper draft	1,013,600 bbls/well	5,068 bbls/day	Hull discharge overboard.	No
Excess cement	Cement,Fluid Loss Additive,Cement Retarder,Free Water Control Additive,Defoamer,Surfacant	800 bbls/well	800 bbls/well	Discharged at seafloor during riserless drilling	No
Fire water	Seawater with no addition of chemicals	51,428 bbls/day when flaring	51,428 bbls/day when flaring	Hull discharge overboard.	No
Cooling water	Seawater with no addition of chemicals	100,000,000 bbls/well	500,000 bbls/day	Hull discharge overboard.	No
Hydrate control fluid	Glycol	25 gals/well	25 gals/well	Discharge at seafloor	No
Sub sea wellhead preservation fluid	Sub sea wellhead preservation fluid	2 bbls/well	2 bbls/well	Discharge at seafloor	No
Leak tracer dye	Lignite	21,000 lbs/well	21,000 lbs/well	Discharge at seafloor	No
Will you produce hydrocarbons? If yes fill in for produced water.					
Will you be covered by an individual or general NPDES permit ?		General			
NOTE: If you will not have a type of waste, enter NA in the row.					

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.					
<i>EXAMPLE: Synthetic-based drilling fluid or mud</i>	<i>internal olefin, ester</i>	<i>Below deck storage tanks on offshore support vessels</i>	<i>Newport Environmental Services Inc., Ingleside, TX</i>	<i>X bbl/well</i>	<i>Recycled</i>
Oil-based drilling fluid or mud	N/A	N/A	N/A	N/A	N/A
Synthetic-based drilling fluid or mud	Synthetic-based drilling muds	Internal mud tanks on motor vessel	Ecoserv, Port Fourchon, LA	20,000 bbls/well	Transport by boat in cutting bins to shorebase; truck to disposal facility. Recycled where possible, or injected.
Cuttings wetted with Water-based fluid	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with Synthetic-based fluid	Cuttings coated with Synthetic drilling muds, including drilled out cement	Cuttings box on workboat/crewboat	Ecoserv, Port Fourchon, LA	1,000 bbs/well	Transport by boat in cutting bins to shorebase; truck to disposal facility. Treated and landfilled.
Cuttings wetted with oil-based fluids	N/A	N/A	N/A	N/A	N/A
Will you produce hydrocarbons? If yes fill in for produced sand.					
Produced sand	N/A	N/A	N/A	N/A	N/A
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.					
<i>EXAMPLE: trash and debris (recyclables)</i>	<i>Plastic, paper, aluminum</i>	<i>barged in a storage bin</i>	<i>ARC, New Iberia, LA</i>	<i>X lb/well</i>	<i>Recycled</i>
Trash and debris	Plastic, paper, aluminum, glass, and other refuse	Storage bins on crew boat	Total Waste Solutions, Port Fourchon, LA	1,800 lbs/day	Transport by boat in storage bins to shorebase. Landfilled.
Wash water		Transport by boat in tanks to shorebase	Ecoserv, Port Fourchon, LA	2-5 bbls/day	Transport by boat in cutting bins to shorebase; truck to disposal facility. Injected.
Chemical product wastes	Used oil, hazardous waste, and nonhazardous waste	Drums on crew boat	Chemical Waste Management, Sulfur, La; WMI Woodside, Walker, LA; Aaron Oil, Berwick, LA	3 bbls/day	Transport in portable tanks or drums on crew boat to shorebase; truck to disposal facility. Recycled where possible, otherwise landfilled or incinerated.
Completion Fluids	Calcium Bromide	Transport by boat in tanks back to vendor	Halliburton-Baroid, Golden Meadow, LA	10,000 bbls/well	Recycled

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

SECTION G AIR EMISSIONS INFORMATION

(a) EMISSIONS WORKSHEETS AND SCREENING QUESTIONS

The emission estimates for the drillship are based on the maximum fuel usage for DS-18. Although DS-18 is no longer in use, it was selected for its conservative representation, as it has the highest fuel consumption among Chevron's Gulf of America (GOA) fleet. This approach ensures that any currently operating drillship within the Chevron GOA fleet would remain within the annual fuel usage limits established in this analysis.

The activity proposed in this plan will occur in WR 678. An AQR sheet was prepared to show exploratory drilling, completing, and abandoning operations in this surface block during each calendar year. WR 678 is not within 300 km of Breton National Wildlife Refuge (BNWR). The Complex Total Emissions are the same as the Plan Emissions, and therefore only one set of emissions calculations is included for each surface block.

Please note, 365 days of activity has been included in the AQR for the surface block WR 677 for the year 2025 forward. This is for contingency purposes to accommodate likely schedule changes within the overall drilling schedule. The Complex Total Emissions are the same as the Plan Emissions, and therefore only one set of emissions calculations is included for each surface block.

WR 677 and WR 678

SCREENING QUESTIONS FOR EP'S	YES	NO
Is any calculated Complex Total (CT) Emission amount (in tons) associated with your proposed exploration activities more than 90% of the amounts calculated using the following formulas: $CT = 3400D^{2/3}$ for CO, and $CT = 33.3D$ for the other pollutants (where D = distances to shore in miles)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Do your emissions calculations include any emission reduction measures or modified emissions factors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are your proposed exploration activities located east of 87.5° W longitude?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Do you expect to encounter H2S at concentrations greater than 20 parts per million (ppm)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Do you propose to flare or vent natural gas for more than 48 continuous hours from any proposed well?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Do you propose to burn produced hydrocarbon liquids?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTACT INFORMATION

Heather Spindel-Colwell
 Chevron U.S.A. Inc.
 100 Northpark Blvd.
 Covington, LA 70433
 985-773-6212
 heather.spindelcolwell@chevron.com

MODELING REPORT

A Modeling Report is not required for activities proposed in this plan.

ATTACHMENTS TO SECTION G

- G-1 – Form BOEM-0138 “Gulf of Mexico Air Emissions Calculations for EP's”

EP - AIR QUALITY

OMB Control No. 1010-0151
 OMB Approval Expires: 10/31/2027

COMPANY	Chevron U.S.A.
AREA	Walker Ridge
BLOCK	678
LEASE	OCS-G 21245
FACILITY	N/A
WELL	PTC-1 , PTC-2, PTC-3, PTC-4
COMPANY CONTACT	Heather Spindel-Colwell
TELEPHONE NO.	985-273-9599
REMARKS	This AQR includes additional drilling days each year for contingency purposes. Number of days included in AQR will not match Form 137.

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) requires us to inform you that BOEM collects this information as part of an applicant's EP submitted for our approval. We use the information to facilitate our review and data entry for OCS plans. We will protect proprietary data according to the Freedom of Information Act and 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number. Responses are mandatory (43 U.S.C. 1334). The reporting burden for this form is included in the burden for preparing EPs. We estimate that burden to average 600 hours per response, including the time for reviewing instructions, gathering and maintaining the data, and completing and reviewing the forms associated with subpart B. Direct comments on the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Bureau of Ocean Energy Management, 45600 Woodland Road, Sterling, Virginia 20166.

AIR EMISSIONS COMPUTATION FACTORS

Fuel Usage Conversion Factors	Natural Gas Turbines			Natural Gas Engines			Diesel Recip. Engine		Diesel Turbines	
	SCF/hp-hr	9.524		SCF/hp-hr	7.143		GAL/hp-hr	0.0514	GAL/hp-hr	0.0514

Equipment/Emission Factors	units	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	REF.	DATE	Reference Links
Natural Gas Turbine	g/hp-hr		0.0086	0.0086	0.0026	1.4515	0.0095	N/A	0.3719	N/A	AP42 3.1-1& 3.1-2a	4/00	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s01.pdf
RECIP. 2 Cycle Lean Natural Gas	g/hp-hr		0.1293	0.1293	0.0020	6.5998	0.4082	N/A	1.2009	N/A	AP42 3.2-1	7/00	https://www3.epa.gov/ttn/chie/ap42/ch03/final/c03s02.pdf
RECIP. 4 Cycle Lean Natural Gas	g/hp-hr		0.0002	0.0002	0.0020	2.8814	0.4014	N/A	1.8949	N/A	AP42 3.2-2	7/00	https://www3.epa.gov/ttn/chie/ap42/ch03/final/c03s02.pdf
RECIP. 4 Cycle Rich Natural Gas	g/hp-hr		0.0323	0.0323	0.0020	7.7224	0.1021	N/A	11.9408	N/A	AP42 3.2-3	7/00	https://www3.epa.gov/ttn/chie/ap42/ch03/final/c03s02.pdf
Diesel Recip. < 600 hp	g/hp-hr	1	1	1	0.0279	14.1	1.04	N/A	3.03	N/A	AP42 3.3-1	10/96	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s03.pdf
Diesel Recip. > 600 hp	g/hp-hr	0.32	0.182	0.178	0.0055	10.9	0.29	N/A	2.5	N/A	AP42 3.4-1 & 3.4-2	10/96	https://www3.epa.gov/ttn/chie/ap42/ch03/final/c03s04.pdf
Diesel Boiler	lbs/bbl	0.0840	0.0420	0.0105	0.0089	1.0080	0.0084	5.14E-05	0.2100	0.0336	AP42 1.3-6; Pb and NH3: WebFIRE (08/2018)	9/98 and 5/10	https://cfpub.epa.gov/webfire/
Diesel Turbine	g/hp-hr	0.0381	0.0137	0.0137	0.0048	2.7941	0.0013	4.45E-05	0.0105	N/A	AP42 3.1-1 & 3.1-2a	4/00	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s01.pdf
Dual Fuel Turbine	g/hp-hr	0.0381	0.0137	0.0137	0.0048	2.7941	0.0095	4.45E-05	0.3719	0.0000	AP42 3.1-1& 3.1-2a; AP42 3.1-1 & 3.1-2a	4/00	https://cfpub.epa.gov/webfire/
Vessels – Propulsion	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	
Vessels – Drilling Prime Engine, Auxiliary	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
Vessels – Diesel Boiler	g/hp-hr	0.0466	0.1491	0.1417	0.4400	1.4914	0.0820	3.73E-05	0.1491	0.0003	USEPA 2017 NEI;TSP (units converted) refer to Diesel Boiler Reference	3/19	
Vessels – Well Stimulation	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	
Natural Gas Heater/Boiler/Burner	lbs/MMscf	7.60	1.90	1.90	0.60	190.00	5.50	5.00E-04	84.00	3.2	AP42 1.4-1 & 1.4-2; Pb and NH3: WebFIRE (08/2018)	7/98 and 8/18	https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf
Combustion Flare (no smoke)	lbs/MMscf	0.00	0.00	0.00	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Combustion Flare (light smoke)	lbs/MMscf	2.10	2.10	2.10	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Combustion Flare (medium smoke)	lbs/MMscf	10.50	10.50	10.50	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	https://www3.epa.gov/ttn/chie/ap42/ch13/final/C13S05_02-05-18.pdf
Combustion Flare (heavy smoke)	lbs/MMscf	21.00	21.00	21.00	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Liquid Flaring	lbs/bbl	0.42	0.0966	0.0651	5.964	0.84	0.01428	5.14E-05	0.21	0.0336	AP42 1.3-1 through 1.3-3 and 1.3-5	5/10	https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s03.pdf
Storage Tank	tons/yr/tank						4.300				2014 Gulfwide Inventory; Avg emiss (upper bound of 95% CI)	2017	https://www.boem.gov/environment/environmental-studies/2014-gulfwide-emission-inventory
Fugitives	lbs/hr/component						0.0005				API Study	12/93	https://www.api.org/
Glycol Dehydrator	tons/yr/dehydrator						19.240				2011 Gulfwide Inventory; Avg emiss (upper bound of 95% CI)	2014	https://www.boem.gov/environment/environmental-studies/2011-gulfwide-emission-inventory
Cold Vent	tons/yr/vent						44.747				2014 Gulfwide Inventory; Avg emiss (upper bound of 95% CI)	2017	https://www.boem.gov/environment/environmental-studies/2014-gulfwide-emission-inventory
Waste Incinerator	lb/ton		15.0	15.0	2.5	2.0	N/A	N/A	20.0	N/A	AP 42 2.1-12	10/96	https://www3.epa.gov/ttnchie1/ap42/ch02/final/c02s01.pdf
On-Ice – Loader	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Other Construction Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Other Survey Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	https://www.epa.gov/moves/nonroad2008a-installation-and-updates
On-Ice – Tractor	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Truck (for gravel island)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Truck (for surveys)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
Man Camp - Operation (max people/day)	tons/person/day		0.0004	0.0004	0.0004	0.006	0.001	N/A	0.001	N/A	BOEM 2014-1001	2014	https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/BOEM_Newsroom/Library/Publications/2014-1001.pdf
Vessels - Ice Management Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
Vessels - Hovercraft Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data

Sulfur Content Source	Value	Units
Fuel Gas	3.38	ppm
Diesel Fuel	0.0015	% weight
Produced Gas (Flare)	3.38	ppm
Produced Oil (Liquid Flaring)	1	% weight

Density and Heat Value of Diesel Fuel		
Density	7.05	lbs/gal
Heat Value	19,300	Btu/lb

Heat Value of Natural Gas		
Heat Value	1,050	MMBtu/MMscf

Natural Gas Flare Parameters	Value	Units
VOC Content of Flare Gas	0.6816	lb VOC/lb-mol gas
Natural Gas Flare Efficiency	98	%

AIR EMISSIONS CALCULATIONS - 1ST YEAR

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																											
Chevron U.S.A.	Walker Ridge	678	OCS-G 21245	N/A	PTC-1, PTC-2, PTC-3, PTC-4	Heather Spindel-Colwell	985-273-9599	This AQR includes additional drilling days each year for contingency purposes. Number of days included in AQR will not match Form 137.																											
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME										MAXIMUM POUNDS PER HOUR										ESTIMATED TONS									
	Diesel Engines		HP	GAL/HR	GAL/D	HR/D	D/YR**	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3										
	Nat. Gas Engines		HP	SCF/HR	SCF/D																														
	Burners		MMBTU/HR	SCF/HR	SCF/D																														
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel	DS-18*	64,368.00	3,311.48	79,475.43	24	365	45.41	27.40	26.58	0.66	1087.99	31.28	0.00	170.65	0.32	198.90	120.00	116.40	2.89	4765.41	137.02	0.01	747.44	1.39										
	VESSELS- Drilling - Propulsion Engine - Diesel		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	VESSELS- Drilling - Propulsion Engine - Diesel		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	VESSELS- Drilling - Propulsion Engine - Diesel		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	Vessels - Diesel Boiler		0.00			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	Vessels - Drilling Prime Engine, Auxiliary		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/Derrick Barge Diesel		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
			BPD																																
DRILLING	Liquid Flaring		0.00			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
WELL TEST	COMBUSTION FLARE - no smoke			0.00		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	COMBUSTION FLARE - light smoke			0.00		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	COMBUSTION FLARE - medium smoke			0.00		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	COMBUSTION FLARE - heavy smoke			0.00		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
ALASKA-SPECIFIC SOURCES	VESSELS		kW			HR/D	D/YR																												
	VESSELS - Ice Management Diesel		0.00			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
2026-2035	Facility Total Emissions							45.41	27.40	26.58	0.66	1,087.99	31.28	0.00	170.65	0.32	198.90	120.00	116.40	2.89	4,765.41	137.02	0.01	747.44	1.39										
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																6,060.60			6,060.60	6,060.60	6,060.60		109,192.59											
	182.0																																		
DRILLING	VESSELS- Crew Diesel		10,800.00	555.62	13,334.80	7	122	7.62	4.60	4.46	0.11	182.55	5.25	0.00	28.63	0.05	3.25	1.96	1.90	0.05	77.95	2.24	0.00	12.23	0.02										
	VESSELS - Supply Diesel		6,600.00	339.54	8,149.05	19	183	4.66	2.81	2.72	0.07	111.56	3.21	0.00	17.50	0.03	8.09	4.88	4.74	0.12	193.94	5.58	0.00	30.42	0.06										
	VESSELS - Tugs Diesel		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
FACILITY INSTALLATION	VESSELS - Material Tug Diesel		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	VESSELS - Crew Diesel		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	VESSELS - Supply Diesel		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
PRODUCTION	VESSELS - Support Diesel		0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																														
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY																																
	VESSELS		kW			HR/D	D/YR																												
	On-Ice - Loader			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	On-Ice - Other Construction Equipment			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	On-Ice - Other Survey Equipment			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	On-Ice - Tractor			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	On-Ice - Truck (for gravel island)			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	On-Ice - Truck (for surveys)			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	Man Camp - Operation		0.00			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
	VESSELS - Hovercraft Diesel		0.00			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00										
2026-2035	Non-Facility Total Emissions							12.28	7.41	7.18	0.18	294.11	8.46	0.00	46.13	0.09	11.35	6.85	6.64	0.17	271.89	7.82	0.00	42.65	0.08										

NOTES:
 * Chosen for conservatism. A smaller vessel of lesser HP may be used to complete the work.
 ** This AQR includes additional drilling days each year for contingency purposes. Number of days included in AQR will not match Form 137.

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL				
Chevron U.S.A.	Walker Ridge	678	OCS-G 21245	N/A	PTC-1 , PTC-2, PTC-3, PTC-4				
Year	Facility Emitted Substance								
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
2026-2035	198.90	120.00	116.40	2.89	4,765.41	137.02	0.01	747.44	1.39
Allowable	6,060.60			6,060.60	6,060.60	6,060.60		109,192.59	

EP - AIR QUALITY

OMB Control No. 1010-0151
 OMB Approval Expires: 08/31/2023

COMPANY	Chevron U.S.A.
AREA	Walker Ridge
BLOCK	677
LEASE	OCS-G 18753
FACILITY	N/A
WELL	IS002D, IS002E, IS002F, IS002G
COMPANY CONTACT	Heather Spindel-Colwell
TELEPHONE NO.	985-273-9599
REMARKS	This AQR includes additional drilling days each year for contingency purposes. Number of days included in AQR will not match Form 137.

AIR EMISSIONS COMPUTATION FACTORS

Fuel Usage Conversion Factors	Natural Gas Turbines			Natural Gas Engines		Diesel Recip. Engine		Diesel Turbines			
	SCF/hp-hr	9.524		SCF/hp-hr	7.143	GAL/hp-hr	0.0514	GAL/hp-hr	0.0514		

Equipment/Emission Factors	units	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	REF.	DATE	Reference Links
Natural Gas Turbine	g/hp-hr		0.0086	0.0086	0.0026	1.4515	0.0095	N/A	0.3719	N/A	AP42 3.1-1& 3.1-2a	4/00	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s01.pdf
RECIP. 2 Cycle Lean Natural Gas	g/hp-hr		0.1293	0.1293	0.0020	6.5998	0.4082	N/A	1.2009	N/A	AP42 3.2-1	7/00	https://www3.epa.gov/ttn/chie/ap42/ch03/final/c03s02.pdf
RECIP. 4 Cycle Lean Natural Gas	g/hp-hr		0.0002	0.0002	0.0020	2.8814	0.4014	N/A	1.8949	N/A	AP42 3.2-2	7/00	https://www3.epa.gov/ttn/chie/ap42/ch03/final/c03s02.pdf
RECIP. 4 Cycle Rich Natural Gas	g/hp-hr		0.0323	0.0323	0.0020	7.7224	0.1021	N/A	11.9408	N/A	AP42 3.2-3	7/00	https://www3.epa.gov/ttn/chie/ap42/ch03/final/c03s02.pdf
Diesel Recip. < 600 hp	g/hp-hr	1	1	1	0.0279	14.1	1.04	N/A	3.03	N/A	AP42 3.3-1	10/96	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s03.pdf
Diesel Recip. > 600 hp	g/hp-hr	0.32	0.182	0.178	0.0055	10.9	0.29	N/A	2.5	N/A	AP42 3.4-1 & 3.4-2	10/96	https://www3.epa.gov/ttn/chie/ap42/ch03/final/c03s04.pdf
Diesel Boiler	lbs/bbl	0.0840	0.0420	0.0105	0.0089	1.0080	0.0084	5.14E-05	0.2100	0.0336	AP42 1.3-6; Pb and NH3: WebFIRE (08/2018)	9/98 and 5/10	https://www3.epa.gov/ttn/chie/ap42/ch03/final/c03s04.pdf https://cfpub.epa.gov/webfire/
Diesel Turbine	g/hp-hr	0.0381	0.0137	0.0137	0.0048	2.7941	0.0013	4.45E-05	0.0105	N/A	AP42 3.1-1 & 3.1-2a	4/00	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s01.pdf
Dual Fuel Turbine	g/hp-hr	0.0381	0.0137	0.0137	0.0048	2.7941	0.0095	4.45E-05	0.3719	0.0000	AP42 3.1-1& 3.1-2a; AP42 3.1-1 & 3.1-2a	4/00	https://cfpub.epa.gov/webfire/
Vessels – Propulsion	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	
Vessels – Drilling Prime Engine, Auxiliary	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
Vessels – Diesel Boiler	g/hp-hr	0.0466	0.1491	0.1417	0.4400	1.4914	0.0820	3.73E-05	0.1491	0.0003	USEPA 2017 NEI;TSP (units converted) refer to Diesel Boiler Reference	3/19	
Vessels – Well Stimulation	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	
Natural Gas Heater/Boiler/Burner	lbs/MMscf	7.60	1.90	1.90	0.60	190.00	5.50	5.00E-04	84.00	3.2	AP42 1.4-1 & 1.4-2; Pb and NH3: WebFIRE (08/2018)	7/98 and 8/18	https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf https://cfpub.epa.gov/webfire/
Combustion Flare (no smoke)	lbs/MMscf	0.00	0.00	0.00	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Combustion Flare (light smoke)	lbs/MMscf	2.10	2.10	2.10	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Combustion Flare (medium smoke)	lbs/MMscf	10.50	10.50	10.50	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	https://www3.epa.gov/ttn/chie/ap42/ch13/final/C13S05_02-05-18.pdf
Combustion Flare (heavy smoke)	lbs/MMscf	21.00	21.00	21.00	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Liquid Flaring	lbs/bbl	0.42	0.0966	0.0651	5.964	0.84	0.01428	5.14E-05	0.21	0.0336	AP42 1.3-1 through 1.3-3 and 1.3-5	5/10	https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s03.pdf
Storage Tank	tons/yr/tank						4.300				2014 Gulfwide Inventory; Avg emiss (upper bound of 95% CI)	2017	https://www.boem.gov/environment/environmental-studies/2014-gulfwide-emission-inventory
Fugitives	lbs/hr/component						0.0005				API Study	12/93	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
Glycol Dehydrator	tons/yr/dehydrator						19.240				2011 Gulfwide Inventory; Avg emiss (upper bound of 95% CI)	2014	https://www.boem.gov/environment/environmental-studies/2011-gulfwide-emission-inventory
Cold Vent	tons/yr/vent						44.747				2014 Gulfwide Inventory; Avg emiss (upper bound of 95% CI)	2017	https://www.boem.gov/environment/environmental-studies/2014-gulfwide-emission-inventory
Waste Incinerator	lb/ton		15.0	15.0	2.5	2.0	N/A	N/A	20.0	N/A	AP 42 2.1-12	10/96	https://www3.epa.gov/ttnchie1/ap42/ch02/final/c02s01.pdf
On-Ice – Loader	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Other Construction Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Other Survey Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Tractor	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	https://www.epa.gov/moves/nonroad2008a-installation-and-updates
On-Ice – Truck (for gravel island)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Truck (for surveys)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
Man Camp - Operation (max people/day)	tons/person/day		0.0004	0.0004	0.0004	0.006	0.001	N/A	0.001	N/A	BOEM 2014-1001	2014	https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/BOEM_New%20room/Library/Publications/2014-1001.pdf
Vessels - Ice Management Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
Vessels - Hovercraft Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data

Sulfur Content Source	Value	Units
Fuel Gas	3.38	ppm
Diesel Fuel	0.0015	% weight
Produced Gas (Flare)	3.38	ppm
Produced Oil (Liquid Flaring)	1	% weight

Density and Heat Value of Diesel Fuel		
Density	7.05	lbs/gal
Heat Value	19,300	Btu/lb

Heat Value of Natural Gas	
Heat Value	1,050 MMBtu/MMscf

Natural Gas Flare Parameters	Value	Units
VOC Content of Flare Gas	0.6816	lb VOC/lb-mol gas
Natural Gas Flare Efficiency	98	%

AIR EMISSIONS CALCULATIONS - 1ST - 10TH YEAR

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																	
Chevron U.S.A.	Walker Ridge	677	OCS-G 18753	N/A	IS002D, IS002E, IS002F, IS002G	Heather Spindel-Colwell	985-273-9599	This AQR includes additional drilling days each year for contingency purposes. Number of days included in AQR will not match Form 137.																	
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR									ESTIMATED TONS								
	Diesel Engines	HP	GAL/HR	GAL/D	HR/D	D/YR**	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	
	Nat. Gas Engines	HP	SCF/HR	SCF/D																					
	Burners	MMBTU/HR	SCF/HR	SCF/D																					
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel	DS-18*	64,368	3,311.48	79,475.43	24	365	45.41	27.40	26.58	0.66	1,087.99	31.28	0.00	170.65	0.32	198.90	120.00	116.40	2.89	4,765.41	137.02	0.01	747.44	1.39
	VESSELS- Drilling - Propulsion Engine - Diesel		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS- Drilling - Propulsion Engine - Diesel		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS- Drilling - Propulsion Engine - Diesel		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Vessels - Diesel Boiler		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Vessels - Drilling Prime Engine, Auxiliary		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/Derrick Barge Diesel		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	BPD		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
DRILLING	Liquid Flaring		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WELL TEST	COMBUSTION FLARE - no smoke		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	COMBUSTION FLARE - light smoke		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	COMBUSTION FLARE - medium smoke		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	COMBUSTION FLARE - heavy smoke		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ALASKA-SPECIFIC SOURCES	VESSELS					HR/D	D/YR																		
	VESSELS - Ice Management Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2026-2035	Facility Total Emissions							45.41	27.40	26.58	0.66	1,087.99	31.28	0.00	170.65	0.32	198.90	120.00	116.40	2.89	4,765.41	137.02	0.01	747.44	1.39
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																								
	185.0																								
DRILLING	VESSELS- Crew Diesel	Crew Vessel	10,800	555.62	13,334.80	7	122	7.62	4.60	4.46	0.11	182.55	5.25	0.00	28.63	0.05	3.24	1.96	1.90	0.05	77.74	2.24	0.00	12.19	0.02
	VESSELS - Supply Diesel	Supply Vessel	6,600	339.54	8,149.05	19	183	4.66	2.81	2.72	0.07	111.56	3.21	0.00	17.50	0.03	8.07	4.87	4.72	0.12	193.41	5.56	0.00	30.34	0.06
	VESSELS - Tugs Diesel		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Material Tug Diesel		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY INSTALLATION	VESSELS - Crew Diesel		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Supply Diesel		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRODUCTION	VESSELS - Support Diesel		0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																				
	Man Camp - Operation (maximum people per day)			PEOPLE/DAY																					
	VESSELS			KW		HR/D	D/YR																		
	On-Ice - Loader			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Other Construction Equipment			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Other Survey Equipment			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Tractor			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Truck (for gravel island)			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	On-Ice - Truck (for surveys)			0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2026-2035	Non-Facility Total Emissions							12.28	7.41	7.18	0.18	294.11	8.46	0.00	46.13	0.09	11.32	6.83	6.62	0.16	271.15	7.80	0.00	42.53	0.08

NOTES:
 * Chosen for conservatism. A smaller vessel of lesser HP may be used to complete the work.
 ** This AQR includes additional drilling days each year for contingency purposes. Number of days included in AQR will not match Form 137.

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL				
Chevron U.S.A.	Walker Ridge	677	OCS-G 18753	N/A	IS002D, IS002E, IS002F, IS002G				
Year	Facility Emitted Substance								
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
2026-2035	198.90	120.00	116.40	2.89	4,765.41	137.02	0.01	747.44	1.39
Allowable	6,160.50			6,160.50	6,160.50	6,160.50		110,389.24	

SECTION H OIL SPILLS INFORMATION

REGIONAL OSRP INFORMATION

All the proposed activities in this plan will be covered by Chevron's Gulf of America Regional Oil Spill Response Plan (OSRP), approved by BSEE on March 22, 2016; Chevron submitted a Biennial Review update on June 13, 2025 and was deemed in compliance by BSEE on July 29, 2025. The plan with revisions was submitted to BSEE on August 27, 2025 which BSEE acknowledged on August 29, 2025. Companies covered under this OSRP: Chevron Corporation (02335), Chevron U.S.A. Inc. (00078), Chevron Pipe Line Company (00400), Union Oil Company of California (00003), Chevron Midcontinent L.P. (23200), Noble Energy Inc. (02237), and Hess Corporation (00059).

SPILL RESPONSE SITES

In the table below, information is provided concerning the location of the primary spill response equipment and the location of the planned staging area(s) that would be used should an oil spill occur resulting from activities proposed in this plan.

Primary Response Equipment Locations	Preplanned Staging Location(s)
Ingleside, Galveston, and Port Arthur, TX; Lake Charles, Morgan City, Houma, Port Fourchon, Leeville, Venice, Fort Jackson, Harvey, Belle Chasse, and Baton Rouge, LA; Pascagoula, MS; Theodore, AL; Tampa, Miami, and Jacksonville, FL.	Ingleside, TX; Port Fourchon and Galliano, LA; Theodore, AL.

OIL SPILL REMOVAL ORGANIZATION (OSRO) INFORMATION

Clean Gulf Associates (CGA) and Marine Spill Response Corporation (MSRC) cooperatives are the primary surface response equipment providers for Chevron in the Gulf of Mexico Region. CGA & MSRC each maintain a dedicated fleet of vessels and other equipment strategically positioned along the Gulf Coast. CGA & MSRC each maintain a network of trained Oil Spill Removal Organizations (OSROs) to deploy and operate their equipment. CGA & MSRC have the capability to plan the mobilization and rapid deployment of spill response resources on a 24-hour, 7 days a week basis, year-round.

Marine Well Containment Company (MWCC) is the primary subsea containment service provider for Chevron. MWCC equipment is available on a 24-hour, 7 days a week basis, year-round.

Chevron's primary staging areas, marine transportation facilities and helicopter bases, are located in Port Fourchon and Galliano, Louisiana. Chevron has the capability to contract for additional staging areas throughout Gulf of Mexico coastal ports.

As per Chevron's Regional Oil Spill Response Plan, our primary Incident Command Post is located in Covington, LA. Chevron has the ability to set up and effectively manage spills at Chevron facilities located in Houma and Lafayette, LA and Houston, TX. Chevron has the capability to contract additional command posts facilities as necessary throughout Gulf Coast region.

WORST CASE DISCHARGE COMPARISON TABLE

The table below provides a comparison of the worst-case scenario from Chevron's Regional OSRP with the worst-case scenario from the proposed activities in this plan. The Regional OSRP calculations and assumptions used to calculate the WCD volume from a blowout in accordance with NTL No. 2015-N01 was submitted and accepted by the BOEM with Hess Corporation Exploration Plan, S-8107, Green Canyon 468, OCS-G 26313. The EP calculations and assumptions used to calculate WCD volume from a blowout in accordance were submitted within this Supplemental Exploration Plan, pending acceptance by BOEM.

Category	Regional OSRP "Drilling > 10 miles" Worst-Case Discharge Scenario	EP
Type of Activity (<i>Types of activities include pipeline, platform, caisson, subsea completion or manifold, and mobile drilling rig</i>)	Exploratory Drilling	Exploratory Drilling
Facility Location (area/block)	Green Canyon Block 468	Walker Ridge Block 678
Facility Designation (e.g., Well No. 2, Platform JA, Pipeline Segment No. 6373)	GC 468 "004"	WR 678 PTC-1
Distance to Nearest Shoreline	105 miles	185 miles
Volume Uncontrolled blowout (volume per day)	492,550 barrels	56,667 barrels
Type of Oil(s) - (<i>crude oil, condensate, diesel</i>)	Crude Oil	Crude Oil
Gravity(s) API - (<i>Provide API gravity of all oils given under "Type of Oil(s)" above. Estimate for EP's</i>)	33°	28°

Chevron has the capability to respond to the appropriate worst-case spill scenario included in its Regional OSRP. The worst-case scenario determined for this EP does not replace the appropriate worst-case scenario in our Regional OSRP. Therefore, Chevron hereby certifies that Chevron 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.¹

¹ This certification is provided as required by NTL No. 2008-G04 at page 19.
Chevron U.S.A. Inc.
Walker Ridge Block 677

(b) OIL SPILL RESPONSE DISCUSSION

Given below is a discussion of the response to an oil spill resulting from the activities proposed in this plan. All the applicable information described in 30 CFR 254.26(b), (c), (d), and (e) is included.

Oil spill response-related activities for facilities included in this document are governed by the Chevron regional Gulf of America Oil Spill Response Plan (OSRP). This OSRP meets all requirements contained in 30 CFR 250. The Chevron regional Gulf of America OSRP was approved by BSEE on March 22, 2016; Chevron submitted a Biennial Review update on June 13, 2025 and was deemed in compliance by BSEE on July 29, 2025. The Chevron regional Gulf of America OSRP encompasses all facilities operated by Chevron U.S.A. Inc. and, herein, the jurisdiction of the BOEM and BSEE.

Upon notification of a major oil release from a Chevron facility or operation in the Gulf of America, Chevron response personnel will make the initial notifications to all involved government agencies, Oil Spill Response Organizations (OSROs), and associated support services.

Chevron has a contract in effect with MWCC, MSRC and CGA, as well as other OSROs, to ensure availability of personnel, services, and equipment on a 24-hour-per-day basis. The OSROs can provide personnel, equipment, and materials in sufficient quantities and recovery capacity to respond effectively to oil spills from the facilities and leases covered by this plan, including the Worst Case Discharge scenarios. OSROs under contract with Chevron have oil spill response equipment located throughout the Gulf Coast area. Much of the equipment is in road-ready condition and is available to be transported on short notice to the nearest predetermined staging areas(s). The “road-ready condition” provides the shortest reasonable response times for transporting equipment to the staging areas.

These assets are listed in the Chevron Oil Spill Response Plan.

Trajectory Analysis

Land areas that could be potentially impacted by an oil spill were determined using the BOEM Oil Spill Risk Analysis Model (OSRAM) trajectory results. The OSRAM estimates the probability that oil spills from designated locations would contact shoreline and offshore natural resources. These probabilities indicate, in terms of percentage, the chance that an oil spill occurring in a particular launch area will contact a certain county or parish within 3, 10, and 30 days. OCS Launch Area C49 was used as the point of origin for the blocks in this plan. Land segments identified by the model are listed below:

Shoreline Segment	County or Parish, State	Conditional Probability of Contact (%)		
		3 Days	10 Days	30 Days
C07	Calhoun County, TX	-	-	1
C08	Matagorda County, TX	-	-	2
C09	Brazoria County, TX	-	-	1
C10	Galveston County, TX	-	-	1
C12	Jefferson County, TX	-	-	1
C13	Cameron Parish, LA	-	-	2
C14	Vermillion Parish, LA	-	-	1
C17	Terrebonne Parish, LA	-	-	1
C20	Plaquemines Parish, LA	-	-	1

Resource Identification

Resources of special economic or environmental importance found in land segments identified in the above paragraph can be found in the NOAA ESI Coastal Sensitivity Atlas (Maps). These maps can be accessed through NOAA and will be used during any spill occurring from the locations listed in this document.

Additionally, information on environmental sensitivities is contained in the U.S. Coast Guard's Area Contingency Plans listed below. These plans will be accessed and followed during an oil spill that threatens the Gulf of Mexico shoreline.

- South Texas Coastal Zone Area Contingency Plan
- Central Texas Coastal Area Contingency Plan
- Southeast Texas and Southwest Louisiana Area Contingency Plan
- Southcentral Louisiana Area Contingency Plan
- Southeast Louisiana Area Contingency Plan
- Alabama, Mississippi and NW Florida Area Contingency Plan
- Southeast Florida Area Contingency Plan
- Florida Keys Coastal Zone Area Contingency Plan

Response Discussion

Chevron maintains numerous resources, equipment and expertise to respond to an oil spill in the Gulf of Mexico. Chevron has oil spill response service contracts with both local and international companies and cooperatives and has a large corps of dedicated Chevron emergency responders that can work in the Gulf of Mexico. Chevron has contracts with the following oil spill response service providers.

Oil Spill Removal Organizations (OSRO). These companies have on-hand shoreline protection and cleanup equipment to respond to a spill in the Gulf of Mexico.

- Enhanced Environmental & Emergency Services dba E3
- Clean Gulf Associates Services
- U.S. Environmental Services
- ES&H Consulting
- American Pollution Control
- T&T Marine
- Oil Spill Response (OSRL)

Oil Spill Cooperatives (OSC). OSCs have equipment pre-staged in the Gulf of Mexico including Lake Charles, Intracoastal City, Houma, Fort Jackson and Venice, Louisiana; Galveston, Texas; and Pascagoula, Mississippi. OSCs provide resources to respond to offshore incidents including areas identified in this plan.

- Clean Gulf Associates (CGA) – This major cooperative strictly dedicated to Gulf of Mexico oil and gas developers and producers.
- Marine Spill Response Corporation (MSRC) – This national cooperative has extensive dedicated offshore resource located in the Gulf of Mexico

Well Control Emergency Response Companies

- Wild Well Control Inc.
- Boots & Coots
- IWC Services, Inc.
- Marine Well Containment Company (MWCC)

Oil Spill Management and Response Consultants

- The Response Group (TRG)

Chemical Dispersant Companies (capable of delivering air and vessel dispersants)

- Airborne Support, Inc
- MSRC
- MWCC
- OSRL

Chevron will use a layered approach to respond to a worst-case discharge from the area by conducting simultaneous response operations at the **well site**, in the **offshore environment** and in **nearshore and shoreline areas**. Plans will be implemented, resources deployed and response operations established within these environmental areas to accomplish the following objectives:

- Provide for the safety of responders and the general public
- Intervene at the well site to stop the flow of oil
- Minimize the spread of oil at the surface
- Minimize encroachment to the coastline environment
- Protect coastal and natural resources

Upon notification of a worst-case discharge oil spill at the locations listed in this plan, Chevron will mobilize resources listed in the attached enclosures. This information comes directly from the Chevron regional Gulf of Mexico Oil Spill Response Plan and applies to a worst-case discharge volume of 465,709 barrels per day that could occur at a Chevron facility located in Mississippi Canyon Block 122. These same assets would be mobilized to all sites contained in this plan.

- Aerial Surveillance Equipment
- Offshore Recovery Equipment
- Nearshore Recovery Equipment
- In-Situ Burn Equipment
- Aerial Dispersant Equipment
- Shoreline Protection Equipment
- Offshore Storage Equipment

Chevron will also take the following general actions to mobilize and coordinate response operations:

- Set up and staff its command center in Covington, LA
- Set up a source control group in Houston, TX or Covington, LA
- Mobilize well site resources to cap, contain and disperse oil at the well head
- Mobilize assets to drill relief wells
- Mobilize assets to contain and collect surface oil at the well site and in the offshore environment
- Mobilize assets to disperse and burn surface oil at the well site and in the offshore environment
- Establish a deepwater staging area from a LA port or location
- Deploy assets to track the movement of oil on the surface

Follow up actions will include the following:

- Locate, monitor, track and project the movement of the oil spill
- Mobilize nearshore skimming and booming vessels, barges and systems to shorebase locations for rapid deployment in the nearshore environment
- Mobilize oil spill removal organization (OSRO) resources and assets to staging areas for rapid deployment of shoreline protection resources
- Mobilize wildlife protection and rehabilitation resources to staging areas for rapid deployment of resources

- Determine Incident Command Post (ICP) locations based on intervention operations and results and surface oil spill trajectories
- Determine ICP Operations Branch locations based on intervention operations and results and surface oil spill trajectories
- Determine additional staging areas based on the spill trajectory

Spill Response Resources and Deployment Time

Offshore Response: Offshore response operations may include some or all of the following simultaneous activities: containment booming, mechanical recovery, aerial dispersants and in-situ burning. Response objectives within the offshore layer are to:

- Provide for the safety of responders and the general public
- Minimize wide scale spread of oil
- Minimize encroachment to coastline environment

The strategy for offshore response will be to:

- Station mechanical recovery vessels and barges that are outfitted with ocean boom systems closest to the source to contain and collect as much oil as possible.
- Station mechanical recovery vessels and barges that deploy skimming systems on vessels of opportunity close to the source to rapidly contain and collect oil that strays from the main oil slick.
- Station in-situ burn assets close to the source to burn as much oil as possible.
- Aerially disperse oil that cannot be mechanically recovered.

Simultaneous implementation of these strategies is designed to effectively contain and recover an oil spill significantly offshore in order to minimize the potential impacts to public health, wildlife and the environment. Separate and distinct resources will be assigned for each operation. Based on the anticipated worst case discharge scenario, Chevron 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 24 hours.

The following sections provide more information on each operation needed to contain a worst case discharge to the maximum extent possible.

(1) Mechanical Recovery and Slick Containment. Offshore skimming and booming vessels, barges and systems will be deployed to the source of the spill and stationed in the thickest parts of the spill to enhance the encounter rate, collect and contain the oil. VHF radio communications will be established between skimming vessels and barges and spotter aircraft and surveillance systems to direct vessels to coordinates of thickest oil to maximize the effectiveness and efficiency of on-water recovery resources. Vessels operating in oil will relay spill characteristics (thickness, trajectory) to the Forward Operating Branch and Incident Command Post in order to station additional vessels and barges that are equipped with night-sensing systems in areas of recoverable oil prior to nightfall. This will again maximize the oil recovery encounter rate. MSRC Responder Class vessels, the CGA Hoss barge, Production Support Vessels, Dual Purpose Vessels and vessels of opportunity outfitted with KOSEQ skimming systems will deploy J-boom or U-boom configurations that will maximize containment of oil to collect using skimmers. These vessels will work in tandem to cover as large of a geographic area as possible at the location of the surface spill where oil is thickest.

Vessels deployed with MSRC and CGA Fast Response Units and CGA Fast Response Vessels will be stationed to collect oil that moves past the front-line mechanical assets. These units will deploy a J-boom configuration because it only requires one support vessel. Oil that escapes the above assets and moves shoreward will be collected by vessels of opportunity that deploy sorbent boom, collection nets or other types of equipment that absorbs surface oil. These assets will be deployed as task forces that can rapidly respond to light oil.

(2) In-Situ Burning. Offshore in-situ burn assets will be deployed as primary response resources for all locations within federal waters. Vessels of opportunity that can operate near the spill site will be used to deploy fire boom and trained in-situ burn responders. Fire boom will be configured in a “U” shape or similar to the NOFI Ocean Buster design.

(3) Aerial Dispersants. Aerial dispersants will be deployed as primary response resources for all locations that fall within the FOSC pre-approval process. Dispersant aircraft that arrive on-scene before mechanical recovery or in-situ burn resources will apply dispersants to areas until relieved by a different asset.

Vessel radar systems and infrared cameras will be used to detect and mechanically collect oil at night. This will allow surveillance operations to continue both day and night and through inclement weather. These systems also will be used to track the movement of oil which will assist with shoreline response planning.

Louisiana and Texas resources potentially at risk may include but are not limited to the following: marine sensitivities, beaches, waterfowl, shoreline resources, marshes, marinas/piers, populated areas, and environmental sensitivities

The BOEM oil spill trajectory model indicates that Louisiana parishes and Mississippi, Alabama, and Florida counties could be impacted by an oil spill from areas listed in this plan. These areas are dominated by fine sand beaches, coarse sand beaches, swamps and saltwater marshes. The four subsections below summarize potential concerns with each environment. This information is taken from various Coast Guard Area Contingency Plans.

Fine Sand Beach Environment

- Sensitivity: Fine sand beaches have a low sensitivity to oil spill impacts and cleanup methods.
- Oil Behavior: Oil typically stains and covers the beach sands with low permeability.
- Cleanup: The penetration is low to moderate depending on the water table and the position of the oiling on the shoreline. A potential environmental issue during beach cleanup is the protection of the dune habitat from the cleanup operations. Fine sand beaches typically have poor access, but good transportation ability. Fine sand beaches are relatively easier to clean in contrast to marshes. Large volumes of stained sand and debris can be generated by beach cleanup.

Coarse Sand Beach Environment

- Sensitivity: The environmental sensitivity of coarse sand beaches is low due to the limited animal and vegetation population.
- Oil Behavior: Spilled oil typically stains and coats coarse grain beach sands with moderate to high permeability.
- Cleanup: Sediment penetration on coarse grain beaches is moderate/high depending on the water table and the location of oil deposition. A potential environmental issue is the protection of the dune habitat from cleanup operations. The transit ability of this shoreline type is less than fine sand beaches because the bearing strength is lower, and this type of sand builds steep beach faces. Access is typically poor.

Swamp Environment

- Sensitivity: The environmental sensitivity is high for swamps because of the presence of wetland habitat.
- Oil Behavior: Oil usually coats and covers the sediment and vegetation with low sediment penetration.
- Cleanup: The sediment penetration potential is low due to the high water table and the water content of the sediments. A potential environmental issue is that the cleanup may be more damaging than the oil itself. The access to swamps is poor due to the soft sediment and the presence of dense tree growth.

Salt Marsh Environment

- Sensitivity: The environmental sensitivity is high for salt marsh because of the presence of wetland habitat.
- Oil Behavior: Oil usually coats and covers the sediment and vegetation with low sediment penetration.

- Cleanup: The sediment penetration potential is low/moderate due to the high water table and water content of the sediment. A potential environmental issue is that the cleanup may be more damaging than the oil itself. Access is typically poor in Louisiana.

The protection of waterfowl and wildlife during the course of an oil release is an essential element in every spill response operation. Federal and state natural resource trustees will be notified in the event that a wildlife habitat may be affected by a spill event. Information concerning methods to protect waterfowl and wildlife are contained in the Chevron OSRP. For fish and wildlife resources, the emphasis is on habitats where:

- Large numbers of animals are concentrated in small areas, such as bays where waterfowl concentrate during migration or for overwintering
- Early life stages are present in somewhat restricted areas or in shallow water, such as anadromous fish streams and turtle nesting beaches
- Habitats are extremely important to specific life stages or migration patterns such as foraging or overwintering
- Specific areas are vital sources for seed or propagation
- The species are on Federal or state threatened or endangered lists
- A significant percentage of the population is likely to be exposed to oil

Human-use resources of concern are listed in the Chevron OSRP. Areas of economic importance, like waterfront hotels, should also be considered when establishing resource protection priorities. Human-use resources are most sensitive when:

- Archaeological and cultural sites are located in the intertidal zones
- Oiling can result in potential significant commercial losses through fouling, tainting, or avoidance because of public perception of a problem
- The resource is unique, such as a historical site
- Oiling can result in potential human health concerns, such as tainting of water intakes and/or subsistence fisheries

Response Capability

Chevron is a member of both Clean Gulf Associates (CGA) and Marine Spill Response Corporation (MSRC) cooperatives. CGA & MSRC are the primary surface response equipment providers for Chevron in the Gulf of Mexico Region. CGA & MSRC each maintain a dedicated fleet of vessels and other equipment strategically positioned along the Gulf Coast. CGA & MSRC each maintain a network of trained Oil Spill Removal Organizations (OSROs) deploy and operate their equipment. CGA & MSRC have the capability to plan the mobilization and rapid deployment of spill response resources on a 24-hour, 7 days a week basis, year-round.

Chevron maintains service contracts with several private OSROs including American Pollution Control Corporation (AmPol), U.S. Environmental Services (USES), OMI Environmental Services, ES&H Environmental Services and Airborne Support Inc.

Chevron's Aviation Group operates and maintains a private fleet of helicopters servicing our operation in the Gulf of Mexico. Chevron pilots and helicopters provide aerial surveillance. The Chevron Chief Pilot fills the Air Operations Branch Director role during an emergency.

Marine Well Containment Company (MWCC) is the designated subsea containment service provider for Chevron. MWCC equipment is available on a 24-hour, 7 days a week basis, year-round. MWCC equipment locations are Ingleside, TX and Theodore, AL.

Chevron's primary staging areas are located in Fourchon and Galliano, Louisiana. Chevron has the capability to contract for additional staging areas throughout Gulf of Mexico coastal ports.

Chevron's primary command post for an oil spill is located in Covington, LA; however, Chevron has the ability to set up and effectively manage spills at Chevron facilities located in Houma and Lafayette, LA and Houston, TX. Chevron has the capability to contract for additional command posts facilities as necessary throughout Gulf Coast region.

Estimated Initial Equipment Response Times

Capability	Equipment ¹	ETA	Source
Aerial Surveillance	Manned Aircraft (Helicopters and Fixed-wing)	~1 to 2 hours	Chevron Aviation (Galliano, LA & Picayune, MS)
On-water Containment, Skimming, & Storage	Response Vessels (w/ boom, skimmer and storage and surveillance technology)	~10 to 14 hours	CGA & MSRC: Venice, Fort Jackson, Harvey, Belle Chasse, Fourchon
Aerial Dispersant	Spotter and Spray aircraft	~4 to 6 hours	MSRC (Stennis) and/or CGA Airborne Support (Houma)
In-Situ Burn	Vessels, Boom and support equipment	~12 to 24 hours	CGA (Harvey) & MSRC (Fort Jackson)
Sub-sea Surveillance	Remote Operated Vehicles (ROVs)	~18 to 24 hours	Chouest Offshore (Fourchon)
Additional resources will continue to be deployed over subsequent days, weeks, and/or months as necessary			

(¹This includes supervisors and response technicians trained to operate all equipment listed.)

New or Unusual Response Technology

Chevron, through our cooperative response organizations (Clean Gulf Associates (CGA) and Marine Spill Response Corporation (MSRC) with other oil and gas operators), has developed high-tech surveillance capabilities with the primary objective of positioning on-water assets in the thickest parts of the spill by detection and classification of potential oil targets as recoverable, tracking moving oil, and expanding the operating window of skimming operations to low-light conditions.

This technology includes high-definition (HD) cameras, optical and thermal infrared imaging systems, and X-band radar oil detection. These systems are integrated into an electronic chart system that provides an exact geographic position and can project the image onto the electronic map for oil spill recovery.

This capability can be leveraged across the response zones and enables the on-water recovery task force strategy where multiple skimming vessels may be directed by a command and control vessel.

The above information is taken from the Chevron GOM Regional Oil Spill Response Plan (OSRP), submitted to BSEE in accordance with 30 CFR 254.

Suitability of Resources

All response equipment, materials, support vessels and strategies listed in this document and in the Chevron regional Gulf of Mexico Oil Spill Response Plan have proven suitable for the many environmental conditions existing at the locations listed in this plan. Chevron additionally conducts annual oil spill response training, drills and exercises and validates the content of the Oil Spill Response Plan. The Chevron regional Gulf of Mexico Oil Spill Response Plan is maintained by the Chevron Gulf of Mexico Emergency Management Advisor.

SECTION I ENVIRONMENTAL MONITORING INFORMATION

(a) MONITORING SYSTEMS

Moon Pool Monitoring and Reporting Operations

Chevron will document visual observation of the moon pool to confirm whether sea turtles or marine mammals are present. A log of observations will be maintained, including Vessel Identification, Vessel Location (Area, Block), Date of Observation, Time of Observation, Sea Turtle/Marine Mammal Observed, Type of Activity Occurring in Moonpool, Initials of Observer.

If sea turtle or marine mammals are observed in the moon pool, BSEE and NMFS will be contacted for additional guidance.

Moon Pool Requirements Before Transit

Document that the observation was made prior to closure of the hull door and no animals were present.

(b) INCIDENTAL TAKES

Chevron does not expect any “takes” of protected species as a result of the operations proposed under this Plan.

Chevron will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations conducted herein:

- NTL No. 2016-BOEM-G01, “Vessel Strike Avoidance and Injured/Dead Protected Species Reporting”
- NTL No. 2016-BOEM-G02, “Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program” (Note: there are no seismic surveys proposed in this Plan)
- NTL No. 2015-BSEE-G03, “Marine Trash and Debris Awareness and Elimination”
- “Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program”, Appendices A, B, C, and J

(c) FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY

No activities proposed in this plan will be conducted within the Protective Zones of the Flower Garden Banks and Stetson Bank.

SECTION J LEASE STIPULATIONS INFORMATION

There are no stipulations assigned to the lease in this plan. Although the Protected Species Stipulation is not assigned, Chevron will follow all guidelines to implement these mitigation measures to reduce the potential taking of Federally protected species.

The Endangered Species Act (16 U.S.C. 1531-1544) and the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1361-1423h) are designed to protect threatened and endangered species and marine mammals and apply to activities on the Outer Continental Shelf (OCS). The OCS Lands Act (43 U.S.C. 1331-1356a) provides that the OCS should be made available for expeditious and orderly development subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs (see 43 U.S.C. 1332).

Chevron will follow all guidelines:

- 1) Collect and remove flotsam resulting from activities related to exploration, development, and production of this lease;
- 2) Post signs in prominent places on all vessels and platforms used as a result of activities related to exploration, development, and production of this lease detailing the reasons (legal and ecological) why release of debris must be eliminated;
- 3) Observe for marine mammals and sea turtles while on vessels, reduce vessel speed to 10 knots or less when assemblages of cetaceans are observed, and maintain a distance of 90 meters or greater from whales, and a distance of 45 meters or greater from small cetaceans and sea turtles;
- 4) Employ mitigation measures prescribed by BOEM/BSEE or the National Marine Fisheries Service (NMFS) for all seismic surveys, including the use of an "exclusion zone" based upon the appropriate water depth, ramp-up and shutdown procedures, visual monitoring, and reporting; (Note: there are no seismic surveys proposed in this Plan)
- 5) Identify important habitats, including designated critical habitat, used by listed species (e.g., sea turtle nesting beaches, piping plover critical habitat), in oil spill contingency planning and require the strategic placement of spill cleanup equipment to be used only by personnel trained in less-intrusive cleanup techniques on beaches and bay shores; and
- 6) Immediately report all sightings and locations of injured or dead protected species (e.g., marine mammals and sea turtles) to the appropriate stranding network. If oil and gas industry activity is responsible for the injured or dead animal (e.g., because of a vessel strike), the responsible parties should remain available to assist the stranding network. If the injury or death was caused by a collision with the lessee's vessel, the lessee must notify BOEM within 24 hours of the strike.

BOEM and BSEE issue NTLs, which more fully describe measures implemented in support of the above-mentioned implementing statutes and regulations, as well as measures identified by the U.S. Fish and Wildlife Service and NMFS arising from, among others, conservation recommendations, rulemakings pursuant to the MMPA, or consultation. Chevron and its operators, personnel, and subcontractors, while undertaking activities authorized under these leases, will implement and comply with the specific mitigation measures outlined in BOEM NTL No. 2016-G01 (Vessel Strike Avoidance and Injured/Dead Protected Species Reporting), BOEM NTL No. 2016-G02 (Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program) (Note: there are no seismic surveys proposed in this Plan) and BSEE NTL No. 2015-G03 (Marine Trash and Debris Awareness and Elimination). Chevron, its operators, personnel, and contractors may comply with the most current measures to protect species in place at the time an activity is undertaken under these leases, including, but not limited to, new or updated versions of the NTLs identified in this paragraph. Chevron and its operators, personnel, and subcontractors will be required to comply with the mitigation measures, identified in the above referenced NTLs, and additional measures in the conditions of approvals for plans or permits.

SECTION K ENVIRONMENTAL MITIGATION MEASURES INFORMATION

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

This plan does not propose activities for which the state of Florida is an affected state; however, Chevron 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:

- NTL No. 2016-BOEM-G01, "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting"
- NTL No. 2016-BOEM-G02, "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program" (Note: there are no seismic surveys proposed in this Plan)
- NTL No. 2015-BSEE-G03, "Marine Trash and Debris Awareness and Elimination"
- "Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program", Appendices A, B, C, and J

Entanglement/Entrainment Reduction Measures

Chevron will ensure that all underwater lines will be stiff, taut, and non-looping, and no excess underwater line will be used.

Sea Turtle Resuscitation Guidelines

Chevron will follow the procedures provided under Appendix J. Sea Turtle Handling and Resuscitation Guidelines found in the Biological Opinion issued by the National Marine Fisheries Service on March 13, 2020.

If a turtle becomes trapped in the moon pool, no attempt to remove the turtle will be made without explicit direction to do so from BOEM/BSEE or NMFS.

Appendix J. Sea Turtle Handling and Resuscitation Guidelines

Any sea turtles taken incidentally during the course of fishing or scientific research activities must be handled with due care to prevent injury to live specimens, observed for activity, and returned to the water according to the following procedures:

- I. Sea turtles that are actively moving or determined to be dead (as described in paragraph (B)(4) below) must be released over the stern of the boat. In addition, they must be released only when fishing or scientific collection gear is not in use, when the engine gears are in neutral position, and in areas where they are unlikely to be recaptured or injured by vessels.
- II. Resuscitation must be attempted on sea turtles that are comatose or inactive by:
 - i. Placing the turtle on its bottom shell (plastron) so that the turtle is right side up and elevating its hindquarters at least 6 inches (15.2 cm) for a period of 4 to 24 hours. The amount of elevation depends on the size of the turtle; greater elevations are needed for larger turtles. Periodically, rock the turtle gently left to right and right to left by holding the outer edge of the shell (carapace) and lifting one side about 3 inches (7.6 cm) then alternate to the other side. Gently touch the eye and pinch the tail (reflex test) periodically to see if there is a response.
 - ii. Sea turtles being resuscitated must be shaded and kept damp or moist but under no circumstance be placed into a container holding water. A water-soaked towel placed over the head, carapace, and flippers is the most effective method in keeping a turtle moist.
 - iii. Sea turtles that revive and become active must be released over the stern of the boat only when fishing or scientific collection gear is not in use, when the engine gears are in neutral position, and in areas where they are unlikely to be recaptured or injured by vessels. Sea turtles that fail to respond to the reflex test or fail to move within 4 hours (up to 24, if possible) must be returned to the water in the same manner as that for actively moving turtles.
 - iv. A turtle is determined to be dead if the muscles are stiff (rigor mortis) and/or the flesh has begun to rot; otherwise, the turtle is determined to be comatose or inactive and resuscitation attempts are necessary.

Any sea turtle so taken must not be consumed, sold, landed, offloaded, transshipped, or kept below deck.

These requirements are excerpted from 50 CFR 223.206(d)(1). Failure to follow these procedures is therefore a punishable offense under the Endangered Species Act.

(b) Incidental Takes

Chevron does not expect any “takes” of protected species as a result of the operations proposed under this Plan.

Chevron will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations conducted herein:

- NTL No. 2016-BOEM-G01, “Vessel Strike Avoidance and Injured/Dead Protected Species Reporting”
- NTL No. 2016-BOEM-G02, “Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program” (Note: there are no seismic surveys proposed in this Plan)
- NTL No. 2015-BSEE-G03, “Marine Trash and Debris Awareness and Elimination”
- “Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, Appendices to the Programmatic Biological Opinion on the Gulf of Mexico Oil and Gas Program”, Appendices A, B, C, and J

See SECTION E BIOLOGICAL, PHYSICAL, AND SOCIOECONOMIC INFORMATION for a list of Threatened and Endangered Species, Critical Habitat and Marine Mammal Information.

SECTION L SUPPORT VESSELS AND AIRCRAFT INFORMATION

(a) GENERAL

In the table below, information is provided regarding the vessels (e.g., tug boats, anchor-handling vessels, construction barges, lay barges, supply boats, crew boats) and aircraft you will use to support your proposed activities. If specific vessels have not yet been determined, use the maximum capacities, numbers, and trip frequencies for the types of vessels you will use.

Type	Maximum Fuel Tank Storage Capacity	Maximum No. in Area at Any Time	Trip Frequency or Duration
Crew Boat	47,382 gals.	One	Once per week
Supply Boat	303,093 gals.	Two	Every 2 to 3 days
Helicopter	2,800 lbs. / 430 gals.	One	7 trips per week

(b) DIESEL OIL SUPPLY VESSELS

Information on the vessels used to supply diesel oil. Any vessels that will transfer diesel oil you will use for purposes other than fuel.

Size of Fuel Supply Vessel	Capacity of Fuel Supply Vessel	Frequency of Fuel Transfers	Route Fuel Supply Vessel Will Take
280 foot	860,000 gals	quarterly	From shore base to block
280 foot	275,000 gals	4-6 weeks	From shore base to block

(d) SOLID AND LIQUID WASTES TRANSPORTATION

Water Quality Spreadsheets replace the Solid and Liquid Wastes Transportation Table.

(e) VICINITY MAP

A map showing the location of the proposed activities relative to the shoreline, the distance of the proposed activities from the shoreline, and the primary route(s) of the support vessels and aircraft you will use when traveling between the onshore support facilities and the drilling unit is provided as attachment L-1 at the end of this section.

The drilling unit, vessels, crew boats and supply boats associated with the operations proposed in this plan will not transit the Bryde's whale area.

ATTACHMENTS TO SECTION L

- L-1 – Vicinity Map

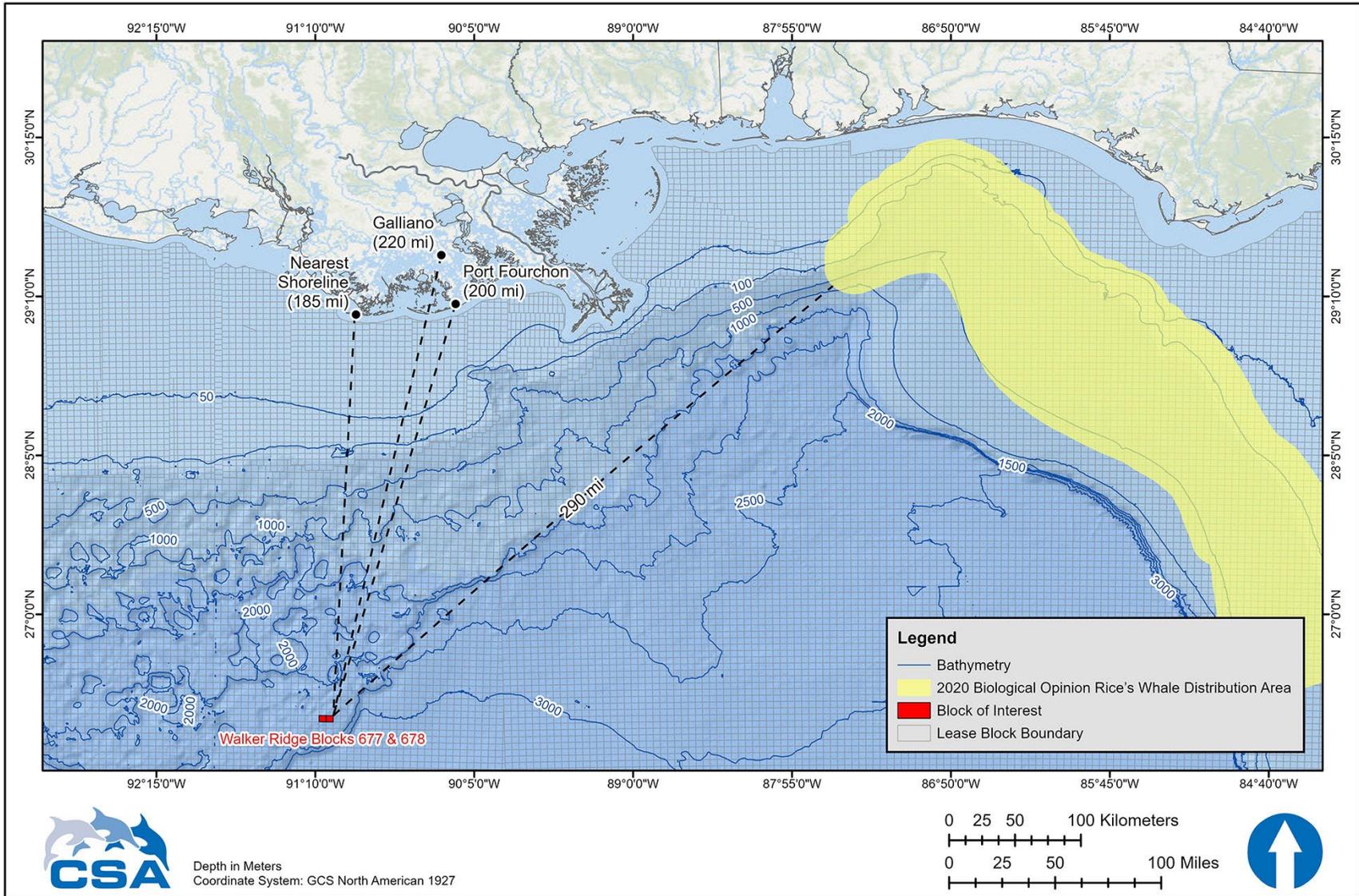


Figure 1. Location of Walker Ridge blocks 677 and 678 relative to the northern Gulf of America shoreline and offshore bathymetric contours.

SECTION M ONSHORE SUPPORT FACILITIES INFORMATION

(a) GENERAL

The table below provides a listing of the onshore facilities that will be used to provide supply and service support for the proposed activities.

Name	Location	Existing/New/Modified
C-Port Shorebase- Port Fourchon	Port Fourchon, Louisiana	Existing
Chevron Galliano Airbase	Galliano, Louisiana	Existing

(b) SUPPORT BASE CONSTRUCTION OR EXPANSION

Chevron will use its existing onshore base facilities located in Port Fourchon and Galliano, Louisiana. The bases have adequate facilities for marine and air transportation to accommodate the activities proposed in this plan. The proposed operations do not require expansion or modifications to the bases.

(d) WASTE DISPOSAL

Water Quality Spreadsheets replace the Waste Disposal Table.

SECTION N COASTAL ZONE MANAGEMENT ACT (CZMA) INFORMATION

(a) CONSISTENCY CERTIFICATION

A Coastal Zone Management Act consistency certification was approved in the initial plan. A Louisiana CZM review is not required for supplemental plans.

(b) OTHER INFORMATION

To the best of our knowledge, the set of findings included in the Environmental Impact Analysis and this Exploration Plan indicate that the proposed activity and its associated facilities and effects are all consistent with, and comply with, the provisions and guidelines of the Louisiana Coastal Resources Program (LCRP). The proposed activity will be conducted in a manner consistent with such program.

SECTION O ENVIRONMENTAL IMPACT ANALYSIS (EIA)

The project-specific EIA is included at the end of this plan as Appendix A.

SECTION P ADMINISTRATIVE INFORMATION

(a) EXEMPTED INFORMATION

Proprietary information included in the proprietary copy of this EP:

- BHL, TVD, and MD on Form BOEM-0137 (OCS Plan Information Form)
- Correlative well names in H₂S Classification
- All items and enclosures under Geological and Geophysical Information
- All Illustrations in the Wellsite Clearance Letter containing proprietary 3-D seismic data and AUV data

(b) BIBLIOGRAPHY

Any previously submitted EP, DPP, or DOCD; study report; survey report; or other material referenced in this EP or its accompanying information, is listed below:

- Chevron's Regional Oil Spill Response Plan (Regional OSRP)
- Initial EP, N-09930, MC 122 and 166, Approved May 4, 2016
- Initial EP, N-06630, WR 678, Approved November 29, 1999
- Initial EP, N-06869, WR 633, 634, and 677, Approved September 14, 2000
- Supplemental EP, S-06420, WR 677, and 678, Approved May 19, 2004
- Revised EP, R-04686, WR 677, Approved June 12, 2008
- Revised EP, R-04893, WR 634, Approved December 30, 2008
- Revised EP, R-05109, WR 633, 634, 677, and 678, Approved June 24, 2011
- Initial DOCD, N-09584, WR 633, 634, 677, and 678, Approved January 27, 2012
- Revised DOCD, R-05625, WR 633, 634, 677, and 678, Approved June 29, 2012
- Supplemental EP, S-07962, WR 634, 677, and 678, Approved August 9, 2019
- Revised DOCD, R-06870, WR 633, 634, 677, and 678, Approved October 11, 2019
- Revised DOCD, R-06985, WR 633, 634, 677, and 678, Approved August 14, 2020
- "Geologic Stratigraphic Assessment, Blocks 633, 634, and 677, Walker Ridge Area, Gulf of Mexico", GEMS Project No. 0400-252, 2000
- "Preliminary Geologic Site Assessment, St. Malo Prospect, Blocks 633, 634, 677, and 678, Walker Ridge Area, Gulf of Mexico", GEMS Project No. 0906-1237a, 2006
- "Geologic and Stratigraphic Assessment, St. Malo Development Project, Blocks 677 and 678, Walker Ridge Area, Gulf of Mexico", GEMS Project No. 0308-1467c, 2008
- "Geologic Assessment for Planned Flowlines (block 634 to 677-678) and umbilical (Block 718 to 634) St. Malo North, Walker Ridge Area, Gulf of Mexico", GEMS Project No. 0311-1960c, 2011
- "Jack-St. Malo Development Area Archaeological Assessment, Blocks 631-634, 671, 674-678, 714-721, 758-764, 802-805, Walker Ridge Area, Gulf of Mexico", GEMS Project No. 0311-1903, July 14, 2011
- Revised EP, R-7382, WR 677, and 678, Approved July 18, 2025

Environmental Impact Analysis

for a

Supplemental Exploration Plan (EP)

for

Walker Ridge Blocks 677, 678

OCS-G-18753, OCS-G-21245

Offshore Louisiana

September 2025

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Acronyms and Abbreviations

§	section	NMFS	National Marine Fisheries Service
μPa	micropascal	NOAA	National Oceanic and Atmospheric Administration
ac	acre	NO _x	nitrogen oxides
bbl	barrel	NPDES	National Pollutant Discharge Elimination System
BOEM	Bureau of Ocean Energy Management	NTL	Notice to Lessees and Operators
BOEMRE	Bureau of Ocean Energy Management, Regulation and Enforcement	NWR	National Wildlife Refuge
BOP	blowout preventer	OCS	Outer Continental Shelf
BOPD	barrels of oil per day	OSRA	Oil Spill Risk Analysis
BSEE	Bureau of Safety and Environmental Enforcement	PAH	polycyclic aromatic hydrocarbons
CFR	Code of Federal Regulations	Pb	lead
CH ₄	methane	PBR	potential biological removal
Chevron	Chevron U.S.A. Inc.	PM	particulate matter
CO	carbon monoxide	PSO	protected species observer
CO ₂	carbon dioxide	PTS	permanent threshold shift
dB	decibel	RWA	Right Whale Area
DP	dynamically positioned	re	referenced to
DPS	distinct population segment	ROSRP	Regional Oil Spill Response Plan
EEZ	Exclusive Economic Zone	SBM	synthetic-based drilling muds
EFH	Essential Fish Habitat	SEL _{24h}	sound exposure level over 24 hours
EIA	Environmental Impact Analysis	SO _x	sulfur oxides
EIS	Environmental Impact Statement	SPL	root-mean-square sound pressure level
EP	Exploration Plan	SWSS	Sperm Whale Seismic Study
ESA	Endangered Species Act	TTS	temporary threshold shift
FAD	fish aggregating device	USCG	U.S. Coast Guard
FR	<i>Federal Register</i>	USEPA	U.S. Environmental Protection Agency
GPS	global positioning system	USFWS	U.S. Fish and Wildlife Service
GMFMC	Gulf of Mexico Fishery Management Council	VOC	volatile organic compound
H ₂ S	hydrogen sulfide	WBM	water-based drilling muds
ha	hectare	WCD	worst case discharge
HAPC	Habitat Area of Particular Concern	WR	Walker Ridge
Hz	hertz		
IMT	Incident Management Team		
IPF	impact-producing factor		
kHz	kilohertz		
MARPOL	International Convention for the Prevention of Pollution from Ships		
MMC	Marine Mammal Commission		
MMPA	Marine Mammal Protection Act		
MMS	Minerals Management Service		
NAAQS	National Ambient Air Quality Standards		
NH ₃	ammonia		

Introduction

Chevron U.S.A. Inc. (Chevron) is submitting a Supplemental Exploration Plan (EP) for Walker Ridge (WR) Blocks 677 and 678, Gulf of America,¹ Outer Continental Shelf (OCS)-G-18753, and OCS-G-21245. Under this EP, Chevron proposes to drill eight wells (PTC-1, PTC-2, PTC-3, PTC-4, IS002D, IS002E, IS002F, IS002G) from two surface hole locations.

The project area is located within the Central Gulf of America OCS Planning Area, approximately 185 statute miles (298 km) from the nearest shoreline (Terrebonne Parish, Louisiana), 200 statute miles (322 km) from the regional onshore support base (Port Fourchon, Louisiana), and 220 statute miles (354 km) from the helicopter base at Galliano Louisiana (**Figure 1**). The water depth at the proposed project location is approximately 2,145 m (7,036 ft).

A dynamically positioned (DP) drillship is anticipated to be on site for approximately 200 days per well for well drilling and temporary abandonment.

The Environmental Impact Analysis (EIA) for this EP was prepared for submittal to the Bureau of Ocean Energy Management (BOEM) in accordance with applicable regulations, including Title 30 Code of Federal Regulations (CFR) section (§) 550.211 and § 550.227. The EIA is a project- and site-specific analysis of the potential environmental impacts of Chevron's planned activities. The EIA complies with guidance provided in existing Notices to Lessees and Operators (NLTs) issued by BOEM and its predecessors, Minerals Management Service (MMS) and Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), including NLTs 2008-G04 (extended by 2015-N02) and 2015-N01. Potential impacts have been analyzed at a broader level in the 2024–2029 Programmatic Environmental Impact Statement (EIS) for the OCS Oil and Gas Leasing Program (BOEM, 2023a, 2025)² and in multisale EISs for the Western and Central Gulf of America Planning Areas (BOEM, 2012a,b; 2013; 2014a; 2015; 2016b; 2017; 2023b). The most recent multisale EIS contains updated environmental baseline information in light of the Macondo (*Deepwater Horizon*) incident and addresses potential impacts of a catastrophic spill (BOEM, 2012a,b; 2013; 2014a; 2015; 2016b; 2017). The National Marine Fisheries Service (NMFS) Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of America assesses impacts and requires additional mitigation measures for protected species (NMFS, 2025a). The analyses and relevant information from those documents are incorporated in this EIA by reference.

¹ On 20 January 2025, President Trump signed Executive Order 14172 ("Restoring Names That Honor American Greatness") renaming the Gulf of Mexico as the Gulf of America. Usage of Gulf of America in this EIA refers to the water body formerly known as the Gulf of Mexico.

² The National OCS oil and gas leasing program Final Programmatic EIS was ordered to be rescinded by Executive Order 3418, issued 3 February 2025. In August 2025, the EIS was formally updated to reflect the name change of the Gulf.

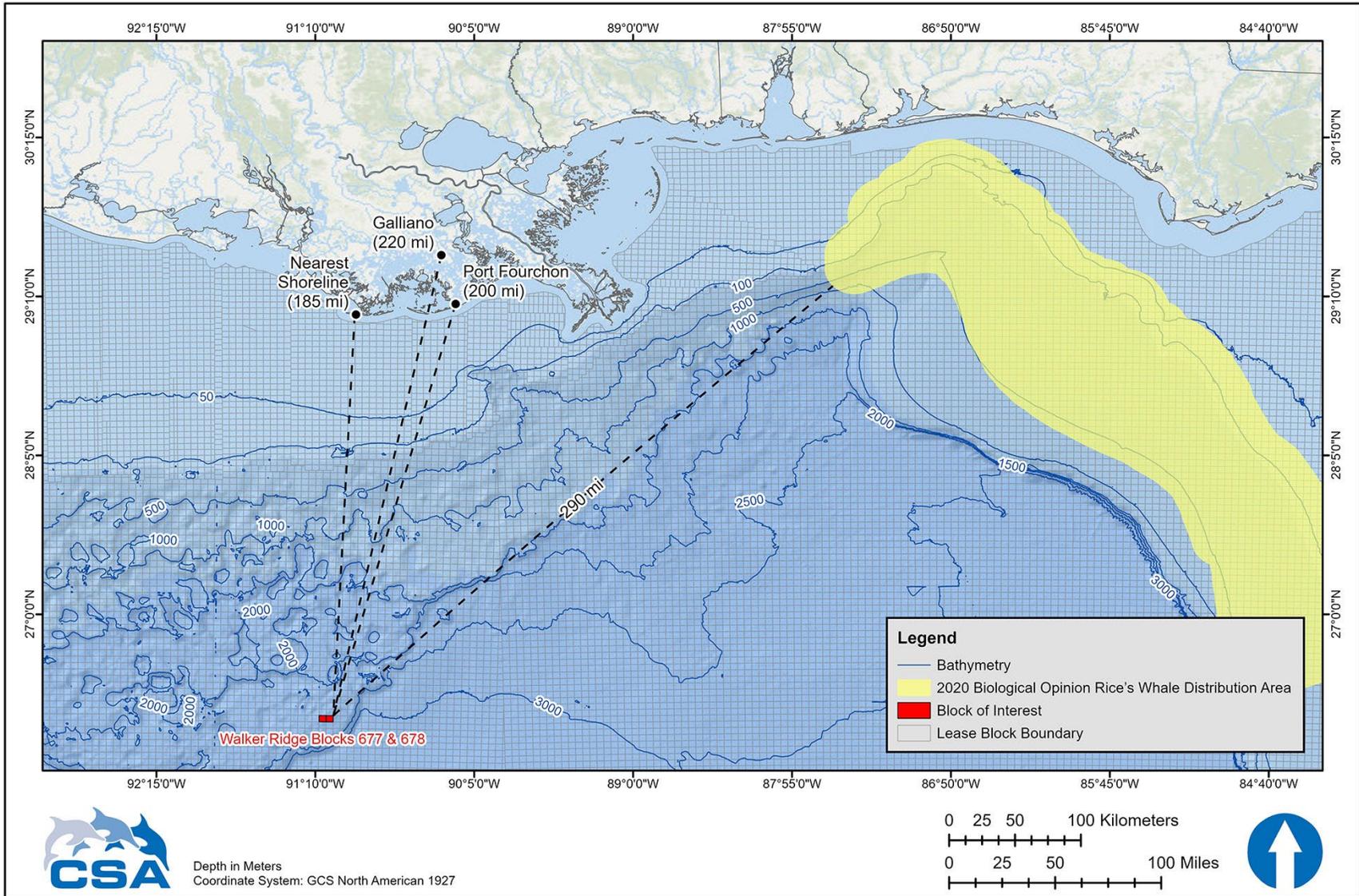


Figure 1. Location of Walker Ridge blocks 677 and 678 relative to the northern Gulf of America shoreline and offshore bathymetric contours.

Oil spill response-related activities for the well to be drilled under this EP are governed by the Chevron Regional Oil Spill Response Plan (ROSRP), as approved on 22 March 2016. Chevron submitted a biennial review update on 13 June 2025 and was deemed in compliance by BSEE on 29 July 2025.

The ROSRP should meet the requirements contained in 30 CFR Part 254 and as operator, Chevron has demonstrated oil spill financial responsibility for the facilities proposed in this EP, according to 30 CFR Part 553 and NTL No. 2008-N05, “Guidelines for Oil Spill Financial Responsibility for Covered Facilities.” The ROSRP details the plan for response to manage oil spills that may result from drilling and production operations with a designed response program based on regional capabilities to address spills ranging from small operations-related spills to a worst-case discharge (WCD) from a well blowout. The program, as detailed in Chevron’s OSRP is intended to meet requirements of the relevant coastal states and applicable federal oil spill planning regulations. It also includes information regarding Chevron’s incident management team (IMT) and dedicated response assets, potential spill risks, and local environmentally sensitive areas. The ROSRP describes personnel and equipment mobilization, the IMT organization, and an overview of strategies, actions and notifications to be taken in the event of a spill.

The EIA is organized into **Sections A** through **I** corresponding to the information required by NTLs 2008-G04 and 2015-N01. The main impact-related discussions are in **Section A** (Impact-Producing Factors) and **Section C** (Impact Analysis). **Table 1** lists and summarizes the NTLs applicable to the EIA.

Table 1. Notices to Lessees and Operators (NTLs) applicable to the Environmental Impact Analysis (EIA).

NTL	Title	Summary
BOEM-2020-G01	Air Quality Information Requirements for Exploration Plans, Development Operations Coordination Documents, and Development and Production Plans in the Gulf of Mexico Region	Cancels and supersedes the air emission information portion of NTL 2008-G04, Information Requirement for Exploration Plans and Development Operations Coordination Documents, effective date May 5, 2008.
BOEM-2016-G01 or Attachment 3 (NMFS, 2025a)	Vessel Strike Avoidance and Injured/Dead Protected Species Reporting	Recommends protected species identification training; recommends that vessel operators and crews maintain a vigilant watch for marine mammals and slow down or stop their vessel movement to avoid colliding with protected species; and requires operators to report sightings of any injured or dead protected species. Reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) replaces compliance with this NTL; a new NTL has not been reissued in response to the 2025 Biological Opinion.
BOEM-2016-G02 or Attachment 3 (NMFS, 2025a)	Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program	Summarizes seismic survey mitigation measures, updates regulatory citations, and provides clarification on how the measures identified in the NTL will be used by BOEM, BSEE, and operators in order to comply with the Endangered Species Act and the Marine Mammal Protection Act. Reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) replaces compliance with this NTL; a new NTL has not been reissued in response to the 2025 Biological Opinion.
2015-G03 or Attachment 2 (NMFS 2025a)	Marine Trash and Debris Awareness and Elimination	Instructs operators to exercise caution in the handling and disposal of small items and packaging materials; requires the posting of instructional placards at prominent locations on offshore vessels and structures; and mandates a yearly marine trash and debris awareness training and certification process.
BOEM 2015-N02	Elimination of Expiration Dates on Certain Notices to Lessees and Operators Pending Review and Reissuance	Eliminates expiration dates (past or upcoming) of all NTLs currently posted on the BOEM website.
BOEM 2015-N01	Information Requirements for Exploration Plans, Development and Production Plans, and Development Operations Coordination Documents on the OCS for Worst-Case Discharge (WCD) and Blowout Scenarios	Provides guidance regarding information required in WCD descriptions and blowout scenarios.
BOEM 2014-G04	Military Warning and Water Test Areas	Provides contact links to individual command headquarters for the military warning and water test areas in the Gulf of America.

Table 1. (Continued).

NTL	Title	Summary
BSEE 2014-N01	Elimination of Expiration Dates on Certain Notices to Lessees and Operators Pending Review and Reissuance	Eliminates expiration dates (past or upcoming) of all NTLs currently posted on the BSEE website.
BSEE-2012-N06	Guidance to Owners and Operators of Offshore Facilities Seaward of the Coast Line Concerning Regional Oil Spill Response Plans	Provides clarification, guidance, and information for preparation of regional Oil Spill Response Plans. Recommends description of response strategy for WCD scenarios to ensure capability to respond to oil spills is both efficient and effective.
2010-N10	Statement of Compliance with Applicable Regulations and Evaluation of Information Demonstrating Adequate Spill Response and Well Containment Resources	Informs operators using subsea blowout preventers (BOPs) or surface BOPs on floating facilities that applications for well permits must include a statement signed by an authorized company official stating that the operator will conduct all activities in compliance with all applicable regulations, including the increased safety measures regulations (75 <i>Federal Register</i> [FR] 63346). Informs operators that BOEM will be evaluating whether each operator has submitted adequate information demonstrating that it has access to and can deploy containment resources to respond promptly to a blowout or other loss of well control.
2009-G40	Deepwater Benthic Communities	Provides guidance for avoiding and protecting high-density deepwater benthic communities (including chemosynthetic and deepwater coral communities) from damage caused by OCS oil and gas activities in water depths >300 m (984 ft). Prescribes separation distances of 610 m (2,000 ft) from each mud and cuttings discharge location and 76 m (250 ft) from all other seafloor disturbances.
2009-G39	Biologically Sensitive Underwater Features and Areas	Provides guidance for avoiding and protecting biologically sensitive features and areas (i.e., topographic features, pinnacles, low relief live bottom areas, and other potentially sensitive biological features) when conducting OCS operations in water depths <300 m (984 ft) in the Gulf of America.
2008-G04	Information Requirements for Exploration Plans and Development Operations Coordination Documents	Provides guidance on information requirements for OCS plans, including EIA requirements and information regarding compliance with the provisions of the Endangered Species Act and Marine Mammal Protection Act.
2008-N05	Guidelines for Oil Spill Financial Responsibility (OSFR) for Covered Facilities	Provides clarification and guidance to operators/lessees on policies for submitting required OSFR documents to the Gulf of America OCS Region as required under 30 CFR Part 253.

BOEM = Bureau of Ocean Energy Management; BSEE = Bureau of Safety and Environmental Enforcement; NMFS = National Marine Fisheries Service; OCS = Outer Continental Shelf.

A. Impact-Producing Factors

Based on the description of Chevron’s proposed activities, a series of impact-producing factors (IPFs) have been identified as presented in **Table 2**. **Table 2** provides a matrix of environmental resources that may be affected in the left column and sources of impacts (i.e., IPFs) associated with the proposed project across the top. **Table 2**, adapted from Form BOEM-0142, has been developed a priori to focus the impact analysis on those environmental resources that may be impacted as a result of one or more IPFs. The tabular matrix indicates which of the routine activities and accidental events could affect specific resources. An “X” indicates that an IPF could reasonably be expected to affect a certain resource, and a dash (–) indicates no impact or negligible impact (**Table 2**). Where there may be an effect, an impact analysis by resource is provided in **Section C**. Potential IPFs for the proposed activities are listed below and briefly discussed in the following sections:

- Drilling rig presence (including sound and lights);
- Physical disturbance to the seafloor;
- Air pollutant emissions;
- Effluent discharges;
- Water intake;
- Onshore waste disposal;
- Marine debris;
- Support vessel and helicopter traffic (includes vessel collisions with resources and marine sound); and
- Accidents.

A.1 Drilling Rig Presence, Marine Sound, and Lights

The activities proposed in this EP will be completed using DP vessels. DP vessels use a global positioning system (GPS), specific computer software, and sensors in conjunction with a series of thrusters to maintain position. Through satellite navigation and position reference sensors, the location of the associated project vessels is precisely monitored while thrusters, positioned at various locations about the rig pontoons, are activated to maintain position. This allows operations at sea in areas where mooring or anchoring may not be best suited or feasible. The selected drilling rig is expected to be on site for up to 200 days per well. The drilling rig will maintain exterior lighting in accordance with applicable federal navigation and aviation safety regulations (International Regulations for Preventing Collisions at Sea, 1972 [72 COLREGS], Part C).

Potential impacts to marine resources from the drilling rig include the physical presence of the vessel in the ocean, entanglement and entrapment from moon pools and equipment in the water, working and safety lighting on the rig, and underwater sound produced during drilling operations.

During the physical presence of the vessel activities there may be occasions where equipment may be suspended in the water column. Entanglement and entrapment of protected species can occur from equipment or mooring lines with slack or looping lines and cables in the water. Marine mammals and sea turtles can become entangled in vessel lines in the water with loops or sufficient looping to trap the animals if they come into contact with them. Entanglement and entrapment can be minimized with proper maintenance of equipment or mooring lines in the water by encasing flexible lines, removing excess lines, and keeping lines taught to remove slack and line loops.

Table 2. Matrix of impact-producing factors (IPF) and affected environmental resources.

Environmental Resources	Impact-Producing Factors									
	Drilling Rig Presence (incl. sound & lights)	Physical Disturbance to Seafloor	Air Pollutant Emissions	Effluent Discharges	Water Intake	Onshore Waste Disposal	Marine Debris	Support Vessel/ Helicopter Traffic	Accidents	
									Small Fuel Spill	Large Oil Spill
Physical/Chemical Environment										
Air quality	--	--	X	--	--	--	--	--	X(6)	X(6)
Water quality	--	--	--	X	--	--	--	--	X(6)	X(6)
Seafloor Habitats and Biota										
Soft bottom benthic communities	--	X	--	X	--	--	--	--	--	X(6)
High-density deepwater benthic communities	--	--(4)	--	--(4)	--	--	--	--	--	X(6)
Designated topographic features	--	--(1)	--	--(1)	--	--	--	--	--	--
Pinnacle trend area live bottoms	--	--(2)	--	--(2)	--	--	--	--	--	--
Eastern Gulf live bottoms	--	--(3)	--	--(3)	--	--	--	--	--	--
Threatened, Endangered, and Protected Species and Critical Habitat										
Sperm whale (Endangered)	X(8)	--	--	--	--	--	--	X(8)	X(6,8)	X(6,8)
Rice's whale (Endangered)	X(8)	--	--	--	--	--	--	X(8)	X(6,8)	X(6,8)
West Indian manatee (Threatened)	--	--	--	--	--	--	--	X(8)	--	X(6,8)
Non-endangered marine mammals (protected)	X	--	--	--	--	--	--	X	X(6)	X(6)
Sea turtles (Endangered/Threatened)	X(8)	--	--	--	--	--	--	X(8)	X(6,8)	X(6,8)
Piping Plover (Threatened)	--	--	--	--	--	--	--	--	--	X(6)
Whooping Crane (Endangered)	--	--	--	--	--	--	--	--	--	X(6)
Black-capped Petrel (Endangered)	X	--	--	--	--	--	--	X(8)	X(6,8)	X(6,8)
Rufa Red Knot (Threatened)	--	--	--	--	--	--	--	X(8)	X(6,8)	X(6,8)
Oceanic whitetip shark (Threatened)	X	--	--	--	--	--	--	--	--	X(6)
Giant manta ray (Threatened)	X	--	--	--	--	--	--	--	--	X(6)
Gulf sturgeon (Threatened)	--	--	--	--	--	--	--	--	--	X(6)
Nassau grouper (Threatened)	--	--	--	--	--	--	--	--	--	X(6)
Smalltooth sawfish (Endangered)	--	--	--	--	--	--	--	--	--	X(6)
Beach mice (Endangered)	--	--	--	--	--	--	--	--	--	X(6)
Florida salt marsh vole (Endangered)	--	--	--	--	--	--	--	--	--	X(6)
Panama City crayfish (Threatened)	--	--	--	--	--	--	--	--	--	X(6)

Table 2. (Continued).

Environmental Resources	Impact-Producing Factors									
	Drilling Rig Presence (incl. sound & lights)	Physical Disturbance to Seafloor	Air Pollutant Emissions	Effluent Discharges	Water Intake	Onshore Waste Disposal	Marine Debris	Support Vessel/ Helicopter Traffic	Accidents	
									Small Fuel Spill	Large Oil Spill
Threatened coral	--	--	--	--	--	--	--	--	--	X(6)
Queen conch	--	--	--	--	--	--	--	--	--	X(6)
Coastal and Marine Birds										
Marine birds	X	--	--	--	--	--	--	X	X(6)	X(6)
Coastal birds	--	--	--	--	--	--	--	X	--	X(6)
Fisheries Resources										
Pelagic communities and ichthyoplankton	X	--	--	X	X	--	--	--	X(6)	X(6)
Essential fish habitat	X	--	--	X	X	--	--	--	X(6)	X(6)
Archaeological Resources										
Shipwreck sites	--	--(7)	--	--	--	--	--	--	--	X(6)
Prehistoric archaeological sites	--	--(7)	--	--	--	--	--	--	--	X(6)
Coastal Habitats and Protected Areas										
Coastal habitats and protected areas	--	--	--	--	--	--	--	X	--	X(6)
Socioeconomic and Other Resources										
Recreational and commercial fishing	X	--	--	--	--	--	--	--	X(6)	X(6)
Public health and safety	--	--	--	--	--	--	--	--	--	X(5,6)
Employment and infrastructure	--	--	--	--	--	--	--	--	--	X(6)
Recreation and tourism	--	--	--	--	--	--	--	--	--	X(6)
Land use	--	--	--	--	--	--	--	--	--	X(6)
Other marine uses	--	--	--	--	--	--	--	--	--	X(6)

(1-8) See table footnotes on the following page.

X = potential impact; dash (--) = no impact or negligible impact.

Table 2 Footnotes and Applicability to this Program:

Footnotes are numbered to correspond to entries in **Table 2**; project applicability to each case is specified in a bullet point following the respective footnote.

- (1) *Activities that may affect a marine sanctuary or topographic feature. Specifically, if the well, rig site, or any anchors will be on the seafloor within the following:*
 - (a) *3-mile zone of the Flower Garden Banks, or the 4-mile zone of East and West Flower Garden Bank;*
 - (b) *1,000-m, 1-mile, or 3-mile zone of any topographic feature (submarine bank) protected by the Topographic Features Stipulation attached to an Outer Continental Shelf (OCS) lease;*
 - (c) *Essential Fish Habitat (EFH) criteria of 152 m (500 ft) from any no-activity zone; or*
 - (d) *Proximity of any submarine bank (152-m [500-ft] buffer zone) with relief greater than 2 m (7 ft) that is not protected by the Topographic Features Stipulation attached to an OCS lease.*
 - None of these conditions (a through d) are applicable. The project area is not within or near any marine sanctuary, topographic feature, submarine bank, or no-activity zone.
- (2) *Activities with any bottom disturbance within an OCS lease block protected through the Live Bottom (Pinnacle Trend) Stipulation attached to an OCS lease.*
 - The Live Bottom (Pinnacle Trend) Stipulation is not applicable to the project area.
- (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.*
 - The Live Bottom (Low-Relief) Stipulation is not applicable to the project area.
- (4) *Activities on blocks designated by the BOEM as being in water depths 400 m or greater.*
 - No impacts on high-density deepwater benthic communities are anticipated. There are no features indicative of seafloor hard bottom that could support high-density chemosynthetic communities or coral communities within 610 m (2,000 ft) of the proposed project activities (GEMS Inc, 2025a,b).
- (5) *Exploration or production activities where Hydrogen Sulfide (H₂S) concentrations greater than 500 ppm might be encountered.*
 - WR 677 and 678 are classified as H₂S Absent. See EP Section D for H₂S management information.
- (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.*
 - Accidental hydrocarbon spills could affect the resources marked (X) in the matrix, and impacts are analyzed in **Section C**.
- (7) *All activities that involve seafloor disturbances, including anchor emplacements, in any OCS block designated by the BOEM as having high probability for the occurrence of shipwrecks or prehistoric sites, including such blocks that will be affected that are adjacent to the lease block in which your planned activity will occur. If the proposed activities are located a sufficient distance from a shipwreck or prehistoric site that no impact would occur, the EIA can note that in a sentence or two.*
 - No impacts to archaeological resources are expected. No archaeological avoidances or known shipwrecks exist near the proposed wellsites (GEMS, 2025a,b).
- (8) *All activities that you determine might have an adverse effect on endangered or threatened marine mammals or sea turtles or their critical habitats.*
 - IPFs that may affect marine mammals, sea turtles, or their critical habitats include drilling rig presence, support vessel and helicopter traffic, and accidents. See **Section C**.
- (9) *Production activities that involve transportation of produced fluids to shore using shuttle tankers or barges.*
 - Not applicable.

The physical presence of the drilling rig in the ocean can attract and potentially impact pelagic marine resources, as discussed in **Section C.5.1**. Offshore vessels maintain exterior lighting for working at night and for navigational and aviation safety in accordance with applicable federal safety regulations. This artificial lighting may also attract and directly or indirectly impact natural resources. Drilling operations produce underwater sounds that may impact certain marine resources. Sources of drilling-related sounds include, for example, riser rotation, DP thrusters, remotely operated vehicle (ROV) operations, and seabed mounted active acoustics (such as ultra-short baseline systems) for positioning. Of the aforementioned sources, only DP thruster activity is expected to produce sound at levels which could result in potential impacts on marine life.

Drilling operations can be expected to produce sound associated with propulsion machinery that transmits directly to the water during station keeping, drilling, and maintenance operations. Additional sound and vibration are transmitted through the hull to the water from auxiliary machinery, such as generators, pumps, and compressors onboard the drilling rig (Richardson et al., 1995). The sound levels produced by DP vessels for station keeping are largely dependent on the level of thruster activity required to keep position and, therefore, vary based on local ocean currents, vessel thruster specifications, and operational requirements. Representative root-mean-square sound pressure levels (SPL) source levels for vessels in DP mode range from 184 to 190 decibels (dB) referenced to (re) 1 micropascal (μPa) m, with a primary frequency below 600 hertz (Hz) (Blackwell and Greene Jr., 2003; McKenna et al., 2012; Kyhn et al., 2014). Zykov (2016) characterized a noisier drillship thruster with SPL source levels ranging from 190 to 195 dB re 1 μPa m. Estimated source levels from a drillship or semisubmersible using thrusters can reach approximately 188 dB re 1 μPa m (Nedwell and Howell, 2004). Nedwell and Edwards (2004) reported that the majority of noise from a semi-submersible drilling rig occurred below 600 Hz, and the SPLs increased by 10 to 20 dB when drilling was active.

Drilling operations produce sound that includes strong tonal components at low frequencies. When drilling, the drill string represents a long vertical sound source (McCauley, 1998). Source levels associated with drilling activities have a maximum broadband (10 Hz to 10 kilohertz [kHz]) energy of approximately 190 dB re 1 μPa m (Hildebrand, 2005). Based on available data, source levels generated from drillships during drilling and in the absence of thrusters can be expected to range between 154 and 176 dB re 1 μPa m (Nedwell et al., 2001). The use of thrusters, whether drilling or not, can elevate SPL source levels from a drillship or semisubmersible to approximately 188 dB re 1 μPa m (Nedwell and Howell, 2004).

Positioning of the drilling rig requires the use of a vessel-mounted transducer and a series of transceivers placed on the seafloor. The transducer employs a high-frequency acoustic signal (i.e., main energy between 21 and 31 kHz) throughout the operation. While the acoustic signal emitted by the transducer is similar to that emitted by a commercial echosounder, its source level will vary depending upon water depth (i.e., higher source levels required in deeper water). SPL source levels for the vessel-mounted transceiver are estimated to be >200 dB re 1 μPa m, with the energy focused towards the seafloor (Equinor, 2019). The directionality and frequency of the source results in minimal propagation outside the main beam of the pulse.

The response of marine mammals, sea turtles, and fishes to a perceived marine sound depends on a range of factors, including 1) SPL, frequency, duration, novelty of the sound, nature of the sound (i.e., continuous vs. intermittent and impulsive vs. non-impulsive); 2) the physical and

behavioral state of the animal at the time of perception; and 3) the ambient acoustic features of the environment (Hildebrand, 2009). Additionally, the sound detection capabilities of a particular species or group of species can make them more or less susceptible to potential impacts from sound sources (BOEM, 2014b).

A.2 Physical Disturbance to the Seafloor

In water depths of 600 m (1,969 ft) or greater, DP drilling rigs disturb only a very small area of the seafloor around the wellbore where the bottom template and blowout preventer (BOP) are located. Depending on the specific well configuration, the total disturbed area is estimated to be 0.25 hectares (ha) (0.62 acres [ac]) per well (BOEM, 2012a).

There will be minimal disturbance to the seafloor and soft bottom communities during positioning drilling operations. Physical disturbance of the seafloor will be limited to the proximal area near the drill sites.

A.3 Air Pollutant Emissions

The air pollutant emissions are calculated in accordance with BOEM requirements for screening air impacts and summarized in the Air Quality Emissions Report in EP Section G. The primary air pollutants typically associated with OCS activities are suspended particulate matter (PM_{2.5} and PM₁₀), sulfur oxides (SO_x), nitrogen oxides (NO_x), volatile organic compounds (VOCs), and carbon monoxide (CO) (Reşitoğlu et al., 2015), as well as ammonia (NH₃) and lead (Pb) per NTL BOEM-2020-G01. These emissions occur mainly from combustion diesel and aviation fuel, also known as Jet-A.

The Air Quality Emissions Report demonstrates that the projected emissions are below exemption levels set by the applicable regulations in 30 CFR 550.303. Based on this and the distance from shore, it can be concluded that project emissions will not significantly affect the air quality of the onshore area for any of the criteria pollutants. No further analysis or control measures are required.

A.4 Effluent Discharges

Effluent discharges are summarized in EP Section F. All offshore discharges are expected to meet the requirements of the National Pollutant Discharge Elimination System (NPDES) General Permit issued by the U.S. Environmental Protection Agency (USEPA) Region 6 and any applicable U.S. Coast Guard (USCG) regulations such as International Sewage Pollution Prevention Certificates and maintenance logs/records for marine sanitation devices.

Water-based drilling muds (WBM) and cuttings are expected to be released at the seafloor during the initial well-drilling intervals before the marine riser that enables the return of drilling muds and cuttings to the surface is installed and set. Excess cement slurry will also be released at the seafloor during casing installation for the riserless portion of the drilling operations. Blowout prevention fluids also are expected to be discharged during the setting of the BOP, diverter systems testing after drilling fluids displacement, and at regular testing intervals at NPDES allowable de minimis levels. Drill cuttings generated during synthetic-based drilling mud Synthetic based drilling mud (SBM) operations will be collected on the rig in dry cuttings boxes. SBM will either be reused by the vendor on the rig or transported via bulk tank containers to Port Fourchon, Louisiana, for recycling and/or disposal at an approved facility. Drill cuttings

wetted with some residual SBMs will be discharged at the surface in accordance with the Base Fluids Retained on Cuttings (RoC %) percentage as listed in NPDES permit conditions averaged over all well sections. Dry cuttings are sent ashore in cutting boxes for disposal at approved facilities. Well treatment fluids, well completion fluids, well workover fluids, residual drilling fluids adhered to marine risers and minor drips/splatters around mud and solids control equipment also are expected to be contained, handled or discharged in accordance with the specified conditions, terms, or limitations in the NPDES permit. Drilling fluids or cuttings will not be discharged if they fail the static sheen test defined in Appendix 1 of 40 CFR 435, Subpart A.

Other marine vessel effluent discharges are expected from drilling activities and are expected to be discharged in accordance with the conditions in the NPDES permit or USCG regulations (33 CFR 151.51-151.79 and 33 CFR 159) that pertain to the International Convention for the Prevention for Pollution from Ships (MARPOL) 73/78 Annex IV & V. These marine operations effluents include miscellaneous discharges that are untreated, effluents that are treated before discharge, and substances removed during wastewater control. Miscellaneous discharges will consist of uncontaminated seawater/freshwater, such as uncontaminated ballast/bilge water, fire water, cooling water, potable water, graywater from dishwater, shower, laundry, bath, and washbasin drains, off-specification potable water and desalination unit discharge. Chemically treated effluents include seawater/freshwater to which treatment chemicals such as biocides or corrosion inhibitors have been added, sewage processed through a marine sanitation device, and deck drainage effluents passed through the drillship oil-water separator. Removed substances include, but are not limited to, solids, sewage sludges, filter backwash, and other pollutants removed from wastewater removed in the course of treatment or wastewater control shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

Waste streams that contain free oil will not be discharged as evidenced by the monitoring method specified for that particular stream (e.g., deck drainage) or miscellaneous discharges will not be discharged when they would cause a film or sheen upon or discoloration of the surface of the receiving water.

Under certain circumstances, the drilling rig may relocate to a safe zone which is not located within the leased area to avoid severe weather, loop currents, or to conduct routine maintenance while idled from drilling activities. During these limited times of safe zone harboring, incidental vessel discharges may occur. These discharges are expected to be within the limits represented in the waste and water discharge table estimates submitted as part of this EP.

A.5 Water Intake

Seawater will be drawn from the ocean for once-through, non-contact cooling of machinery on project vessels, including the drilling rig. Section 316(b) of the Clean Water Act requires NPDES permits to ensure that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available to minimize adverse environmental impact from impingement and entrainment of aquatic organisms. The General NPDES Permit specifies design requirements for facilities for which construction commenced after 17 July 2006 with a cooling water intake structure having a design intake capacity of greater than 2 million gallons of water per day, of which at least 25% is used for cooling purposes. It is expected that the drilling rig and support vessels ultimately selected for this project will be in compliance with all applicable

cooling water intake structure design requirements, monitoring, and limitations. Where applicable, the drilling rig operator takes responsibility for obtaining necessary NPDES permit coverage for its cooling water intake structure and associated permit compliance.

A.6 Onshore Waste Disposal

A list of the solid and liquid wastes generated during this project to be disposed of onshore are tabulated in EP Section F. Waste generated during the proposed project are expected to be properly stored and segregated on the drilling rig and support vessels. Wastes are expected to be packaged in appropriate non-hazardous or hazardous waste containers for transportation to shore for disposal in an appropriately permitted facility. All other wastes generated by Chevron and its contractors are managed by their respective waste management procedures. Compliance with established waste management practices and procedures is expected to result in either no impacts or negligible impacts.

A.7 Marine Debris

All activities of Chevron and its contractors relating to solid waste handling, transportation, and disposal will intend to comply with all applicable regulations, including MARPOL 73/78 Annex V requirements, and USEPA, USCG, BSEE, and BOEM regulations. These regulations include prohibitions and compliance requirements regarding the deliberate discharging of containers and other similar materials (i.e., trash and debris) into the marine environment as well as the protective measures to be implemented to prevent the accidental loss of solid material into the marine environment. For example, BSEE regulations 30 CFR § 250.300(a) and (b)(6) prohibit operators from deliberately discharging containers and other similar materials (i.e., trash and debris) into the marine environment, and 30 CFR § 250.300(c) requires durable identification markings on equipment, tools, containers (especially drums), and other materials. The USEPA and USCG regulations require operators to be proactive in avoiding accidental loss of solid materials by developing waste management plans, posting informational placards, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Additionally, the debris awareness training, instruction, and placards required by the Protected Species Lease Stipulation should minimize the amount of debris that is accidentally lost overboard by offshore personnel (NMFS, 2025a). In compliance with NTL BSEE-2015-G03, Chevron and its contractors intend to exercise caution in the handling and disposal of small items and packaging materials, require the posting of informational placards at prominent locations on offshore vessels and structures, and mandate a yearly marine trash and debris awareness training and certification process. Compliance with these requirements is expected to result in minimal and only accidental loss of solid waste. Consequently, there will be either no impacts or negligible impacts from this factor.

A.8 Support Vessel and Helicopter Traffic

A.8.1 Physical Presence

IPFs associated with support vessel and helicopter traffic include their physical presence and operational sound. The existing shorebase facilities at Port Fourchon, Louisiana, will be used by Chevron for support vessel activities. Support helicopters are expected to be based at heliport facilities in Galliano, Louisiana. No terminal expansion or construction is planned at either location.

NMFS (2025a) has found that support vessel traffic has the potential to disturb protected species (e.g., marine mammals, sea turtles, fishes) and creates a risk of vessel collisions. The probability of a vessel collision depends on the number, size, and speed of vessels as well as the distribution, abundance, and behavior of the species (Laist et al., 2001; Jensen and Silber, 2004; Hazel et al., 2007; Vanderlaan and Taggart, 2007; Conn and Silber, 2013; NMFS, 2025a). To reduce the potential for vessel collisions, BOEM issued NTL BOEM-2016-G01 which recommends protected species identification training, that vessel operators and crews maintain a vigilant watch for marine mammals and slow down or stop their vessel to avoid striking protected species and requires operators to report sightings of any injured or dead protected species. This NTL was reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) replaces compliance with the NTL. In April 2021 (NMFS, 2021a), the 2 NMFS Biological Opinion Appendix C Vessel Strike Avoidance and Dead/Injured Protected Species Reporting Protocols (NMFS, 2020a) was amended. Operators should follow the mitigation measures summarized in Table 4.8-2 of the 2025 Programmatic Environmental Impact Statement (PEIS) (BOEM, 2025) and those presented in Attachment 3 of the 2025 Biological Opinion (NMFS, 2025a); a new NTL has not yet been issued in response to this Biological Opinion.

The project will be supported by onshore crew boats and supply vessels making trips two to three days per week, as well as a diesel oil supply vessel making weekly trips as needed. The boats typically move to the project area via the most direct route from the shorebase.

A helicopter will make approximately four round trips per week between the drilling rig and the heliport. The helicopter will be used to transport personnel and small supplies and will normally take the most direct route of travel between the shorebase and the project area when air traffic and weather conditions permit. Offshore support helicopters typically maintain a minimum altitude of 213 m (700 ft) while in transit offshore, 305 m (1,000 ft) over unpopulated areas or across coastlines, and 610 m (2,000 ft) over populated areas and sensitive habitats such as wildlife refuges and park properties.

Table 3 summarizes generalized and estimated fuel capacity and trip frequency of the support vessels and aircraft.

Table 3. Estimated support vessel and aircraft fuel capacity and trip frequency or duration in Walker Ridge Blocks 677 and 678 during the proposed project.

Vessel/Aircraft Type	Estimated Fuel Tank Storage Capacity	Estimated Trip Frequency or Duration
Helicopter	730 gal	4 flights per week
Crew boats	1,000 bbl	1 per week
Supply boats	5,000 bbl	Every 2 to 3 days

bbl = barrels; gal = gallons.

A.8.2 Operational Sound

Offshore support vessels associated with the proposed project will contribute to the overall acoustic environment by transmitting sound through both air and water. The support vessels will use conventional diesel-powered screw propulsion. Vessel sound is a combination of narrow band (tonal) and broadband sound (Richardson et al., 1995; Hildebrand, 2009; McKenna et al., 2012). Tones typically dominate frequencies up to approximately 60 Hz, whereas broadband sounds may extend to 100 kHz. The primary sources of vessel sound are propeller cavitation, propeller singing, and main population thrust bearing rhythmic pulses; other sources include engine sound, flow sound from water dragging along the hull, and bubbles breaking in the vessel's wake (Richardson et al., 1995). The intensity of sound from support vessels is roughly related to ship size, weight, and speed. Broadband SPL source levels for smaller boats (a category that includes supply and other service vessels) are in the range of 150 to 180 dB re 1 μ Pa m (Richardson et al., 1995; Hildebrand, 2009; McKenna et al., 2012).

Dominant tones for helicopters are generally below 500 Hz with SPL source levels ranging from approximately 149 to 151 dB re 1 μ Pa m (for a Bell 212 helicopter) (Richardson et al., 1995). However, underwater sound levels received from passing aircraft depend on the aircraft's altitude, the aspect (direction and angle) of the aircraft relative to the receiver, receiver depth, water depth, and seafloor type (Richardson et al., 1995). The received level diminishes with increasing receiver depth when an aircraft is directly overhead, but may be stronger at mid-water than at shallow depths when an aircraft is not directly overhead (Richardson et al., 1995). Penetration of aircraft sound below the sea surface is greatest directly below the aircraft. Aircraft sound produced at angles >13 degrees from vertical is mostly reflected from the sea surface and does not propagate into the water (Richardson et al., 1995). The duration of underwater sound from passing aircraft is much shorter in water than air; for example, a helicopter passing at an altitude of 152 m (500 ft) that is audible in air for 4 minutes may be detectable under water for only 38 seconds at 3 m (10 ft) depth and for 11 seconds at 18 m (59 ft) depth (Richardson et al., 1995).

Because of the relatively high expected airspeeds during transits and these physical variables, aircraft-related sound (including both airborne and underwater sound) is expected to be very brief in duration.

A.9 Accidents

The accidents addressed in the EIA focus on the following two potential types:

- a small fuel spill, which is the most likely type of spill during OCS exploration activities; and
- a large oil spill, up to and including the WCD for this EP, which is an oil spill resulting from an uncontrolled blowout.

The following subsections summarize assumptions about the sizes and fates of these spills as well as Chevron's spill response plans. Impacts from these accidents are analyzed in **Section C**.

Recent EISs (BOEM, 2012a,b; 2013; 2014a; 2015; 2016b; 2017) analyzed three types of accidents relevant to drilling operations that could lead to potential impacts to the marine environment: loss of well control, vessel collision, and chemical and drilling fluid spills. These types of accidents, along with dropped objects and an H₂S release, are discussed briefly below.

Loss of Well Control. A loss of well control is the uncontrolled flow of a reservoir fluid that may result in the release of gas, condensate, oil, drilling fluids, sand, and/or water. Loss of well control includes incidents from the very minor up to the most serious well control incidents, while blowouts are considered to be a subset of more serious incidents with greater risk of oil spill or human injury (BOEM, 2016a; 2017). Loss of well control may result in the release of drilling fluid and/or loss of oil. Not all loss of well control events result in blowouts (BOEM, 2012a). In addition to the potential release of gas, condensate, oil, sand, and/or water, the loss of well control can also resuspend and disperse bottom sediments (BOEM, 2012a; 2017). BOEM (2016a) noted that most OCS blowouts have resulted in the release of gas.

The robust system Chevron has in place to prevent loss of well control includes measures to prevent a blowout, reduce the likelihood of a blowout, and conduct effective and early blowout intervention as described in the NTL 2015-N01 package submitted with this EP, as required by BOEM (as discussed in **Section A.9.2**). The potential for a loss of well control event will be minimized by adhering to the requirements of applicable regulations and NTL 2010-N10, which specifies additional safety measures for OCS activities.

Vessel Collisions. BSEE data show that there were 205 OCS-related collisions between 2007 and 2023 (BSEE, 2024a). Most collision mishaps are the result of service vessels colliding with platforms or vessel collisions with pipeline risers. Approximately 10% of vessel collisions with platforms in the OCS resulted in diesel spills, and during several collision incidents fires resulted from hydrocarbon releases. To date, the largest diesel spill associated with a collision occurred in 1979 when an anchor-handling boat collided with a drilling platform in the Main Pass Lease Area, spilling 1,500 barrels (bbl). Diesel fuel is the product most frequently spilled, but oil, natural gas, corrosion inhibitor, hydraulic fluid, and lube oil have also been released as the result of vessel collisions. Human error accounted for approximately half of all reported vessel collisions from 2006 to 2009. As summarized by BOEM (2017), vessel collisions occasionally occur during routine operations. Some of these collisions have caused spills of diesel fuel or chemicals. Chevron and its contractors intend to comply with all applicable USCG and BOEM safety requirements to minimize the potential for vessel collisions.

Dropped Objects. Objects dropped overboard could potentially pose a risk to existing live subsea pipelines or other infrastructure. If a dropped pipe or other subsea equipment landed on existing seafloor infrastructure, loss of integrity of seafloor pipelines, umbilicals, etc. could result in a spill. Dropped objects could also result in seafloor disturbance and potential impacts to benthic communities. Chevron and its contractors intend to comply with all BOEM and BSEE safety requirements to minimize the potential for objects dropped overboard.

Chemical Spills. Chemicals are stored and used for pipeline hydrostatic testing, leak and pressure testing of subsea equipment and during drilling and in well completion operations. The relative quantities of their use is reflected in the largest volumes spilled (BOEM, 2017) with completion, workover, and treatment fluids comprising the largest releases. Any potential leak due to pressure testing failure will be limited to a single line leak and would be limited to <1 bbl. Between 2007 and 2014, an average of two chemical spills <50 bbl in volume and three chemical spills >50 bbl in volume occurred each year (BOEM, 2017).

Drilling Fluid Spills. There is the potential for drilling fluids, specifically SBMs, to be spilled due to an accidental riser disconnect (BOEM, 2017). SBMs are relatively nontoxic to the marine environment and have the potential to biodegrade (BOEM, 2014a). The majority of SBM releases are <50 bbl in size, but accidental riser disconnects may result in the release of medium (238 to 2,380 bbl) to large (>2,381 bbl) quantities of drilling fluids. In the event of an SBM spill, there could be short-term localized impacts on water quality and the potential for localized benthic impacts due to SBM deposition on the seafloor. Benthic impacts would be similar to those described in **Section C.2.1**. The potential for riser disconnect and subsequent SBM spills will be minimized by adhering to the requirements of applicable regulations.

H₂S Release. WR Blocks 677 and 678 are classified as H₂S Absent. See EP Section D for H₂S management information.

A.9.1 Small Fuel Spill

Spill Size. According to the analysis by BOEM (2017), the most likely type of small spill (<1,000 bbl) resulting from OCS activities is a failure related to the storage of oil or diesel fuel. Historically, most diesel spills have been ≤1 bbl, and this is predicted to be the most common spill volume in ongoing and future OCS activities in the Western and Central Gulf of America Planning Areas (Anderson et al., 2012). As the spill volume increases, the incident rate declines dramatically (BOEM, 2017). The median size for spills ≤1 bbl is 0.024 bbl, and the median volume for spills of 1 to 10 bbl is 3 bbl (Anderson et al., 2012). For the EIA, a small diesel fuel spill of 3 bbl is used. Operational experience suggests that the most likely cause of such a spill would be a rupture of the fuel transfer hose resulting in a loss of contents (3 bbl of fuel) (BOEM, 2012a).

Spill Fate. The fate of a small fuel spill in the project area would depend on meteorological and oceanographic conditions at the time of the spill as well as the effectiveness of spill response activities. However, given the open ocean location of the project area and response actions, it is expected that impacts from a small spill would be minimal (BOEM, 2016a).

The water-soluble fractions of diesel are dominated by two- and three-ringed polycyclic aromatic hydrocarbons (PAHs), which are moderately volatile (National Research Council, 2003a). The constituents of these oils are light to intermediate in molecular weight and can be readily degraded by aerobic microbial oxidation. Due to its light density, diesel will not sink to the seafloor. Diesel dispersed in the water column can adhere to suspended sediments, but this generally occurs only in coastal areas with high amounts of suspended solids (National Research Council, 2003a) and would not be expected to occur to any appreciable degree in offshore waters of the Gulf of America. Diesel fuel is readily and completely degraded by naturally occurring microbes (National Oceanic and Atmospheric Administration [NOAA], 2006).

Sheens from small fuel spills are expected to persist for relatively short periods of time, ranging from minutes (<1 bbl) to hours (<10 bbl) to a few days (10 to 1,000 bbl), and rapidly spread out, evaporate, and disperse into the water column (BOEM, 2012a).

For purposes of the EIA, the fate of a small diesel fuel spill of 3 bbl was estimated using WebGNOME, a publicly available oil spill trajectory and fate model developed by NOAA (NOAA, 2022). This model uses the physical properties of oils in its database to predict the rate of evaporation and dispersion over time as well as changes in the density, viscosity, and water content of the product spilled. It is estimated that over 90% of a small diesel spill would be evaporated or dispersed within 24 hours (NOAA, 2022). The area of the sea surface with diesel fuel on it during this 24-hour period would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions.

The WebGNOME results, coupled with spill trajectory information discussed below for a large spill, indicate that a small fuel spill would not impact coastal or shoreline resources. The project area is 192 statute miles (309 km) from the nearest shoreline (Louisiana). Slicks from small fuel spills are expected to persist for relatively short periods of time ranging from minutes (<1 bbl) to hours (<10 bbl) to a few days (10 to 1,000 bbl) and rapidly spread out, evaporate, and disperse into the water column (BOEM, 2012a). Because of the distance from shore of these potential spills on the OCS and their lack of persistence, it is unlikely that a spill would make landfall prior to dissipation (BOEM, 2012a).

Spill Response. In the unlikely event the shipboard procedures fail to prevent a fuel spill, response equipment and trained personnel would be activated so that any spill effects would be localized and would result only in short-term environmental consequences. A discussion of Chevron's response efforts if a spill were to occur during operational activities is provided in EP Section H.

Weathering. Following a diesel fuel spill several physical, chemical, and biological processes, collectively called weathering, interact to change the physical and chemical properties of the diesel, and thereby influence its harmful effects on marine organisms and ecosystems. The most important weathering processes include spreading, evaporation, dissolution, dispersion into the water column, formation of water-in-oil emulsions, photochemical oxidation, microbial degradation, adsorption to suspended particulate matter, and stranding on shore or sedimentation to the seafloor (National Research Council, 2003a; International Tanker Owners Pollution Federation Limited, 2018).

Weathering decreases the concentration of diesel fuel and produces changes in its chemical composition, physical properties, and toxicity. The more toxic, light aromatic and aliphatic hydrocarbons are lost rapidly by evaporation and dissolution from the slick on the water

surface. Evaporated hydrocarbons are degraded rapidly by sunlight. Biodegradation of diesel fuel on the water surface and in the water column by marine bacteria removes first the n-alkanes and then the light aromatics. Other petroleum components are biodegraded more slowly (National Research Council, 2003a). Diesel fuel spill response-related activities for facilities included in this EP are governed by Chevron's ROSRP, which meets the requirements contained in 30 CFR Part 254.

A.9.2 Large Oil Spill (Worst Case Discharge)

Under this EP, Chevron proposes to drill eight wells from two surface hole locations. The uncontrolled blowout scenario is for a potential blowout of the well which Chevron calculates has the highest liquid hydrocarbons rate potential in the area.

Spill Size. Day 1 WCD is estimated to be 40,987 of oil per day (BOPD). The maximum duration of the blowout is estimated at 128 days. The rate profile associated with the well blowout over this 128-day scenario results in a potential worst case spill volume estimated at 4.245 million bbl.

Spill Probability. Statistics from offshore drilling in the U.S. Gulf of America provide a reasonable basis for evaluating oil spill risk during exploratory drilling. Historically, blowouts are rare events, and most do not result in oil spills. A 2010 analysis using the SINTEF³ database estimates a blowout frequency of 0.0017 per exploratory well for non-North Sea locations (International Association of Oil & Gas Producers, 2010). BOEM has updated spill frequencies to include the *Deepwater Horizon* incident and found that spill rates (bbl spilled per bbl produced) for OCS platform spills were unchanged for spills >1,000 bbl when compared with previously published data (Anderson et al., 2012). According to the BSEE analysis conducted for the Final Drilling Safety Rule issued in 2010, the baseline risk of a catastrophic blowout is estimated to be once every 26 years (75 *Federal Register* [FR] 63365).

Chevron is expected to comply with NTL 2010-N10 and the drilling safety regulations in 30 CFR Part 250, Subparts D and G, which specify additional safety measures for OCS activities.

Spill Trajectory. The fate of a large oil spill in the project area would depend on meteorological and oceanographic conditions at the time of and during the spill. The Oil Spill Risk Analysis (OSRA) model is a computer simulation of oil spill transport that uses realistic data for winds and currents to predict spill trajectory. The OSRA report by Ji et al. (2004) provides conditional contact probabilities for shoreline segments in the Gulf of America.

The results for Launch Area C049 (where WR 677 and 678 are located) are presented in **Table 4**. No shoreline contact is predicted within 3 or 10 days for shorelines from Texas to Louisiana. Predicted shoreline contact within 30 days of a spill ranges from Calhoun County, Texas, to Plaquemines Parish, Louisiana. The conditional probability of shoreline contact is low (1 to 2%) for all shorelines with predicted contact within 30 days.

³ Stiftelsen for industriell og teknisk forskning (Foundation for Scientific and Industrial Research, Norwegian Institute of Technology).

Table 4. Conditional probabilities of a spill in the lease area contacting shoreline segments (From: Ji et al., 2004). Values are conditional probabilities that a hypothetical spill in the lease area (represented by Oil Spill Risk Analysis Launch Area C049) could contact shoreline segments within 3, 10, or 30 days.

Shoreline Segment	County or Parish, State	Conditional Probability of Contact ¹ (%)		
		3 Days	10 Days	30 Days
C07	Calhoun County, TX	--	--	1
C08	Matagorda County, TX	--	---	2
C09	Brazoria County, TX	--	--	1
C10	Galveston County, TX	--	--	1
C12	Jefferson County, TX	--	--	1
C13	Cameron Parish, Louisiana	--	--	2
C14	Vermilion Parish, Louisiana	--	--	1
C17	Terrebonne Parish, Louisiana	--	--	1
C20	Plaquemines Parish, Louisiana	--	--	1

¹ Conditional probability refers to the probability of contact within the stated time period, assuming that a spill has occurred (-- indicates <0.5%).

The original OSRA modeling runs reported by Ji et al. (2004) did not evaluate the fate of a spill over time periods exceeding 30 days, nor did they estimate the fate of a release that continues over a period of weeks or months. As noted by Ji et al. (2004), the OSRA model does not consider the chemical composition or biological weathering of oil spills, the spreading and splitting of oil spills, or spill response activities. The model does not specify a particular spill size but has been used by BOEM to evaluate contact probabilities for spills >1,000 bbl.

OSRA is a preliminary risk assessment model. In the event of an actual oil spill, real-time monitoring and trajectory modeling would be conducted using current and wind data available from the rigs and permanent production structures in the area. Satellite and aerial monitoring of the plume and real-time deterministic trajectory modeling using wind and current data would continue on a daily basis to help position equipment and human resources throughout the duration of any major spill or uncontrolled release.

Weathering. In the event of a diesel fuel spill, it is expected that weathering and evaporation will occur quickly. The constituents of diesel fuel are light to intermediate in molecular weight and can be readily degraded by aerobic microbial oxidation. NOAA has reported that diesel fuel is readily and completely degraded by naturally occurring microbes (NOAA, 2006).

Weathering decreases the concentration of oil and produces changes in its chemical composition, physical properties, and toxicity. The more toxic, light aromatic and aliphatic hydrocarbons are lost rapidly by evaporation and dissolution from a slick on the water surface. For example, the light, paraffinic crude oil spilled during the *Deepwater Horizon* incident lost approximately 55 wt. % to evaporation during the first 3 to 5 days while floating on the sea surface (Daling et al., 2014). Evaporated hydrocarbons are degraded rapidly by sunlight. Biodegradation of oil on the water surface and in the water column by marine bacteria removes first the n-alkanes and then the light aromatics from the oil. Other petroleum components are biodegraded more slowly (National Research Council, 2003a). Photo-oxidation attacks mainly the medium and high molecular weight PAHs in the oil on the water surface (Prince, 2014).

Spill Response. All proposed activities and facilities in this EP will be covered by the Gulf of Mexico ROSRP approved by BSEE on 22 March 2016. Chevron submitted a biennial review update on 13 June 2025 and was deemed in compliance by BSEE on 29 July 2025. Chevron has certified that it has the capability to respond to the maximum extent practical to a WCD from all Chevron facilities in the Gulf of America.

B. Affected Environment

The project area is in the central Gulf of America, approximately 185 statute miles (298 km) from the nearest shoreline (Terrebonne Parish, Louisiana), 200 statute miles (322 km) from the onshore support base at Port Fourchon, Louisiana, and 220 statute miles (354 km) from the helicopter base at Galliano, Louisiana (**Figure 1**). The water depth at the location of the proposed activities is approximately 2,145 m (7,036 ft) (**Figure 2**). Additional information of seafloor conditions at the proposed surface hole locations are presented by GEMS (2025a,b).

A detailed description of the regional affected environment, including meteorology, oceanography, geology, air and water quality, benthic communities, Threatened and endangered species, biologically sensitive resources, archaeological resources, socioeconomic conditions, and other marine uses is provided in previously developed EISs (BOEM, 2012a; 2013; 2014a; 2015; 2016b; 2017, 2023a,b, 2025). These regional descriptions, applicable to MC 522, remain valid and are incorporated by reference. General background information is presented in the following sections, and brief descriptions of each potentially affected resource, including site-specific and new information if available, are presented in **Section C**.

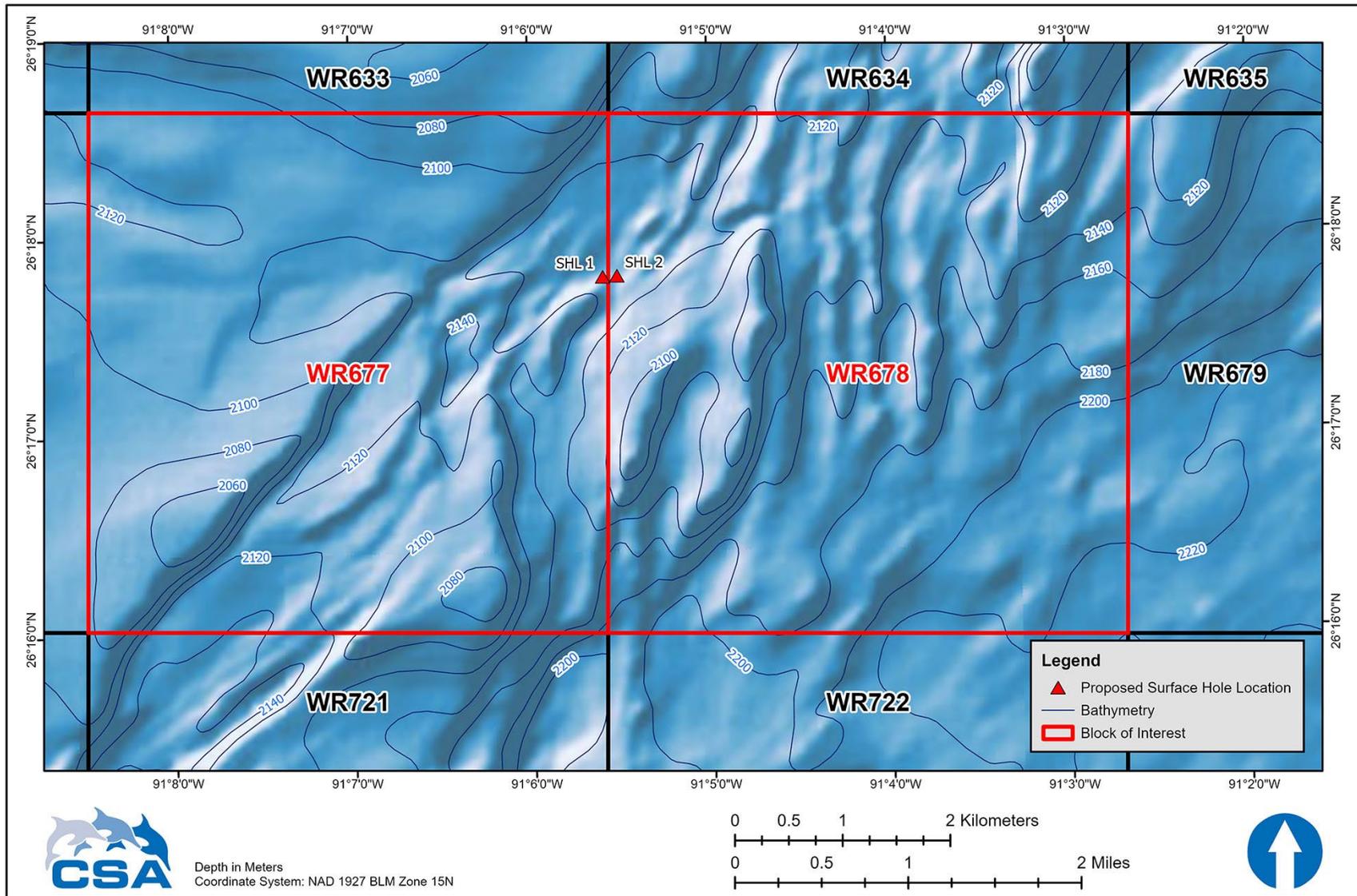


Figure 2. Bathymetric map of the project area showing in the location of the proposed wellsites in Walker Ridge Blocks 677 and 678.

C. Impact Analysis

This section analyzes the potential direct and indirect impacts of routine activities and accidents. Impacts have been analyzed extensively in lease sale EISs for the Central and Western Gulf of America Planning Areas (BOEM, 2013; 2014a; 2015; 2016a,b; 2017; 2023b, 2025) and this information in these documents is incorporated by reference. This section is organized by the environmental resources identified in **Table 2** and addresses each IPF potentially affecting the resource.

C.1 Physical/Chemical Environment

C.1.1 Air Quality

There are no site-specific air quality data for the project area due to the distance from shore. Because of the distance from shore-based pollution sources and the minimally dispersed sources offshore, air quality at the wellsite is expected to be good. The attainment status, (i.e., meeting air quality standards set by the USEPA) of federal OCS waters is unclassified because there is no provision in the Clean Air Act for classification of areas outside state waters (BOEM, 2012a).

In general, ambient air quality of coastal counties along the Gulf of America is relatively good (BOEM, 2012a). As of August 2025, Mississippi, Alabama, and Florida coastal counties in proximity to the project area are in attainment of the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants (USEPA, 2025). St. Bernard Parish in Louisiana is a nonattainment area for sulfur dioxide based on the 2010 standard. One coastal metropolitan area in Texas (Houston-Galveston-Brazoria) is a nonattainment area for 8-hour ozone (2008 and 2015 Standards).

Winds in the region are driven by the anticyclonic (clockwise) atmospheric circulation around the Bermuda High, a semi-permanent, subtropical area of high pressure in the North Atlantic Ocean off the East Coast of North America that migrates east and west with varying central pressure (BOEM, 2017). The Gulf of America is located to the southwest of this circulation center, resulting in a prevailing southeasterly to southerly flow, which is conducive to transporting emissions toward shore. However, circulation is also affected by tropical cyclones (hurricanes) during summer and fall and by extratropical cyclones (cold fronts) during winter.

The project is not expected to cause an exceedance of NAAQS at any receptor. Therefore, the only potential effects to air quality would be from air pollutant emissions associated with routine operations and accidental spills (a small fuel spill or a large oil spill). These IPFs with potential impacts listed in **Table 2** are discussed below.

Impacts of Air Pollutant Emissions

Air pollutant emissions are the only routine IPF likely to affect air quality. Offshore air pollutant emissions will result primarily from drilling operations and service vessels. These emissions occur mainly from combustion or burning of diesel and Jet-A aircraft fuel. The combustion of fuels occurs primarily in generators, pumps, or motors and from lighter fuel motors. Primary air pollutants typically associated with OCS activities are suspended PM, SO_x, NO_x, VOCs, CO, NH₃, and Pb. As noted by BOEM (2017), emissions from routine activities are projected to have minimal impacts on onshore air quality because of the prevailing atmospheric conditions, anticipated emission rates, anticipated heights of emission sources, and the distance to shore of the proposed activities. However, support vessel and helicopter traffic entering or departing coastal facilities will release air pollutants in these areas during the project period. The incremental contribution to cumulative impacts from activities described in Chevron's EP is minimal and is not expected to cause or contribute to a violation of NAAQS.

Greenhouse gas emissions may contribute to climate change, with important effects on temperature, rainfall, frequency of severe weather, ocean acidification, and sea level rise (Intergovernmental Panel on Climate Change, 2014). Greenhouse gas emissions from this proposed project represent a negligible contribution to the total greenhouse gas emissions from reasonably foreseeable activities in the Gulf of America and are not expected to significantly alter or exceed any of the climate change impacts evaluated in the Programmatic EIS (BOEM, 2016a). Carbon dioxide (CO₂) and methane (CH₄) emissions from the project would constitute a small incremental contribution to greenhouse gas emissions from all OCS activities. According to Programmatic and OCS lease sale EISs (BOEM, 2016a; 2017), estimated CO₂ emissions from OCS oil and gas sources are 0.4% of the U.S. total. Although estimated air emissions from the project will exceed BOEM thresholds, modeling has shown that project emissions are not expected to result in the exceedance of NAAQS for any receptor.

As noted in the lease sale EIS (BOEM, 2017), emissions of air pollutants from routine activities in the Central Gulf of America Planning Area are projected to have minimal impacts to onshore air quality because of the prevailing atmospheric conditions, emission rates, and the distance of these emissions from the coastline. The Air Quality Emissions Report indicates that the projected project emissions are below exemption levels set by the applicable regulations in 30 CFR § 550.303. Based on this and the distance from shore, it can be concluded that emissions will not significantly affect the air quality of the onshore area for any of the criteria pollutants.

The Breton Wilderness Area, which is part of the Breton National Wildlife Refuge (NWR), is designated under the Clean Air Act as a Prevention of Significant Deterioration Class I air quality area. BOEM is required to notify the National Park Service and U.S. Fish and Wildlife Service (USFWS) if emissions from proposed projects may affect the Breton Class I area. The project area is approximately 244 statute miles⁴ (393 km) from the Breton Wilderness Area. Chevron and its contractors intend to comply with all BOEM requirements regarding air emissions.

⁴ Distance calculated based on the nearest point of Walker Ridge Blocks 677 and 678.

There are three Class I air quality areas on the west coast of Florida: St. Marks NWR in Wakulla County, Chassahowitzka NWR in Hernando County, and Everglades National Park in Monroe, Miami-Dade, and Collier counties. The project area is approximately 475 statute miles (764 km) from the closest Florida Class I air quality area (St. Marks NWR Class I Air Quality Area). Chevron expects to comply with emissions requirements as directed by BOEM.

Impacts of a Small Fuel Spill

Potential impacts of a small spill on air quality are expected to be consistent with those analyzed and discussed by (BOEM, 2012a; 2015; 2016b; 2017, 2023a,b, 2025). The probability of a small spill would be minimized by Chevron's preventative measures during routine operations, including fuel transfer. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to reduce the potential impacts. EP Section H includes a detailed discussion of the spill response measures that would be employed.

The EIA small spill scenario is proposed to occur in offshore waters at or near the drilling rig. A small fuel spill would affect air quality near the spill site by introducing VOCs into the atmosphere through evaporation. The WebGNOME model (see **Section A.9.1**) indicates that over 90% of a small diesel spill would be evaporated or dispersed within 24 hours (NOAA, 2022). The area of the sea surface with diesel fuel on it would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions.

Because of the offshore location of the proposed small fuel spill, coastal air quality would not be affected because the spill would be expected to be degraded by weathering processes and dissipate prior to making landfall or reaching coastal waters (see **Section A.9.1**).

Impacts of a Large Oil Spill

Potential impacts of a large oil spill on air quality are expected to be consistent with those analyzed and discussed by BOEM (2012a; 2015; 2016b; 2017; 2023a,b, 2025). A large oil spill could potentially affect air quality by introducing VOCs into the atmosphere through evaporation. The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time of the spill and the effectiveness of spill response measures. Real-time wind and current data from the project area would be available at the time of a spill and would be used to assess the fate and effects of VOCs released. Additional air quality impacts could occur if response measures included in situ burning of floating oil. Burning would generate a plume of black smoke and result in emissions of NO_x, SO_x, CO, and PM as well as greenhouse gases. However, in situ burning would occur only after authorization from the USCG Federal On-Scene Coordinator. This approval would also be based upon consultation with the regional response team, including the USEPA.

Because of the project area's location (185 statute miles [298 km]) from the nearest shoreline, most air quality impacts would occur in offshore waters with minimal chance to affect onshore air quality. However, depending on the spill trajectory and the effectiveness of spill response measures, coastal air quality could be affected if oil on the sea surface approaches or contacts the coast.

C.1.2 Water Quality

There are no site-specific baseline water quality data for the project area. Deepwater areas in the northern Gulf of America are relatively similar with respect to patterns of water column temperature, salinity, and oxygen (BOEM, 2017), with the exception of the hypoxic zone off the coast of the Atchafalaya River and Mississippi River basin. Kennicutt (2000) noted that the deepwater region has little evidence of contaminants in the dissolved or particulate phases of the water column. Within the northern Gulf of America, there are localized areas (termed natural seeps) that release oil, gas, and brines from subsurface deposits into near surface sediments and up through the water column. No natural seeps were noted within 610 m (2,000 ft) of the proposed project activities (GEMS, 2025a,b).

The only IPFs that may affect water quality are effluent discharges associated with routine operations and two types of accidents (a small fuel spill and a large oil spill) as discussed below.

Impacts of Effluent Discharges

Discharges of treated cuttings with some limited amount of residual SBM may produce temporary, localized increases in suspended solids in the water column around the drilling rig. In general, turbid water can be expected to extend between a few hundred meters and several kilometers down current from the discharge point for WBM and cuttings (Neff, 1987). SBMs will be collected on the rig and either reused by the vendor or transported to Port Fourchon, Louisiana, for recycling and disposal at an approved facility. Cuttings wetted with SBMs and SBM discharges associated with weekly safety diverter valve testing on the drillship are expected to be treated to reduce SBM levels at or below NPDES requirements and discharged overboard at the drillsite in accordance with all NPDES permit limitations and requirements. After discharge, SBMs retained on cuttings would be expected to adhere tightly to the cuttings particles and, consequently, would not produce substantial turbidity in the water column (Neff et al., 2000). No persistent impacts on water quality in the project area are expected from drill cutting discharges.

WBM and cuttings will be released at the seafloor during the initial well intervals before the marine riser, which allows returns to the surface, is set. Excess cement slurry also will be released at the seafloor during casing installation for the riserless portion of the drilling operations. The seafloor discharges of WBM and associated drill cuttings will result in seafloor disturbances that will produce locally turbid conditions in the water column near the seafloor. The turbidity plume will be carried away from the well by near-bottom currents and, based on current speed(s), may be detectable within tens to hundreds of meters of the wellbore. As suspended WBM and resuspended sediments settle to the seafloor, the water clarity will return to background conditions within minutes to a few hours after drilling of these well intervals ceases (Neff, 1987). Discharges of WBM and cuttings are likely to have little or no impact on water quality due to the low toxicity and rapid dispersion of these discharges (National Research Council, 1983; Neff, 1987; Hinwood et al., 1994).

Treated sanitary and domestic wastes, including those from support vessels, may have a transient effect on water quality in the immediate vicinity of the discharge at the sea surface. Treated sanitary and domestic wastes may have elevated levels of nutrients, organic matter, and chlorine but should dilute rapidly to undetectable levels within tens to hundreds of meters from the source. All NPDES permit limitations and requirements as well as USCG regulations (as applicable) are expected to be met during proposed activities; therefore, little or no impact

on water quality from the overboard releases of treated sanitary and domestic wastes is anticipated.

Deck drainage includes all effluents resulting from rain, deck washings, and runoff from curbs, gutters, and drains (including drip pans) in work areas. Rainwater that falls on uncontaminated areas of the drilling rig and support vessels will flow overboard without treatment. However, rainwater that falls on the drilling rig deck and other areas such as chemical storage areas and places where equipment is exposed (such as drip or containment pans) will be collected, and oil and water will be separated to meet NPDES permit requirements. Based on expected adherence to permit limits and applicable regulations, little or no impact on water quality from deck drainage is anticipated.

Other discharges in accordance with the NPDES permit, such as desalination unit brine; BOP water-based hydraulic fluids; and uncontaminated cooling water, firewater, ballast water, bilge water, and other discharges of seawater and freshwater to which treatment chemicals have been added are expected to dilute rapidly and have little or no impact on offshore water quality.

The drilling rig and support vessels will discharge treated sanitary and domestic wastes. These are not expected to have a significant impact on water quality in the vicinity of the discharges. Support vessel discharges are expected to be in accordance with USCG and MARPOL 73/78 regulations and, as applicable, the NPDES Vessel General Permit, and therefore are not expected to cause significant impacts on water quality.

Impacts of a Small Fuel Spill

Potential impacts of a small spill on water quality are expected to be consistent with those analyzed and discussed by BOEM (2012a; 2015; 2016b; 2017, 2023a,b; 2025). The EIA small spill scenario is proposed to occur in offshore waters at or near the drilling rig. The probability of a small spill would be minimized by Chevron's preventative measures during routine operations, including fuel transfer. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to potentially help mitigate and reduce the impacts. EP Section H provides details on spill response measures.

The water-soluble fractions of diesel are dominated by two- and three-ringed PAHs, which are moderately volatile (National Research Council, 2003a). The molecular weight of diesel fuel (i.e., ultra-low-sulfur marine diesel fuel) constituents is light to intermediate and can be readily degraded by physiochemical weathering processes (e.g., evaporation, dissolution, dispersion, photochemical oxidation) and biological processes (microbial degradation). Diesel fuel is much lighter than water (specific gravity is between 0.83 and 0.88, compared to 1.03 for seawater). When spilled on water, diesel fuel spreads very quickly to a thin film of rainbow and silver sheens, except for marine diesel, which may form a thicker film of dull or dark colors. However, because diesel fuel has a very low viscosity, it is readily dispersed into the water column when winds reach 5 to 7 knots or with breaking waves (NOAA, 2023). It is possible for the diesel fuel that is dispersed by wave action to form droplets that are small enough to be kept in suspension and moved by the currents.

Diesel dispersed in the water column can adhere to suspended sediments, but this generally occurs only in coastal areas with high levels of suspended solids (National Research Council,

2003a) and would not be expected to occur to any appreciable degree in offshore waters of the Gulf of America.

Some vessels may contain heavy fuel oil (i.e., No. 6 Fuel Oil, Bunker C) that may sink or be suspended in the water column. This fuel can stick to surfaces and does not readily disperse or breakdown from weathering. However, encounters with these vessels are considered rare and not further discussed.

The extent and persistence of water quality impacts from a small diesel fuel spill would depend on the meteorological and oceanographic conditions at the time of the spill and the effectiveness of spill response measures. It is estimated that more than 90% of a small diesel spill would evaporate or disperse within 24 hours (NOAA, 2022) (see **Section A.9.1**). The sea surface area covered with a very thin layer of diesel fuel would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions. In addition to removal by evaporation, constituents of diesel fuel are readily and completely degraded by naturally occurring microbes (NOAA, 2006; 2023). Given the open ocean location of the project area, the extent and duration of water quality impacts from a small spill would not be significant.

Impacts of a Large Oil Spill

Potential impacts of a large oil spill on water quality are expected to be consistent with those analyzed and discussed by BOEM (2012a; 2015; 2016b; 2017, 2023a,b, 2025). Most of the spilled oil would be expected to form a slick at the surface, although information from the *Deepwater Horizon* incident indicates that submerged oil droplets can be produced when subsea dispersants are applied at the wellhead (Camilli et al., 2010; Hazen et al., 2010; NOAA, 2011a,b,c). Dispersants would be applied only after approval from the Federal On-Scene Coordinator with collaboration from the USEPA and Regional Response Team Region 6.

The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time of the release and the effectiveness of spill response measures. Real-time wind and current data from the project area would be available at the time of a spill and would be used to assess the fate and effects of released hydrocarbons. Weathering processes that affect spilled oil on the sea include adsorption (sedimentation), biodegradation, dispersion, dissolution, emulsification, evaporation, and photo oxidation. Most crude oil blends will emulsify quickly when spilled, creating a stable mousse that presents a more persistent cleanup and removal challenge (NOAA, 2017).

Hazen et al. (2010) studied the impacts and fate of oil released in the deepwater environment after the 2010 *Deepwater Horizon* incident. Initial studies suggested that the potential exists for rapid intrinsic bioremediation (bacterial degradation) of subsea dispersed oil in the water column by deep-sea indigenous microbial activity without significant oxygen depletion (Hazen et al., 2010), although other studies showed that oil bioremediation caused oxygen drawdown in deep waters (Kessler et al., 2011; Dubinsky et al., 2013). Additional studies investigated the effects of deepwater dissolved hydrocarbon gases (e.g., methane, propane, ethane) and the microbial response to a deepwater oil spill suggest dissolved hydrocarbon gases may promote rapid hydrocarbon respiration by low-diversity bacterial blooms, thus priming indigenous bacterial populations for rapid hydrocarbon degradation of subsea oil (Kessler et al., 2011; Du and Kessler, 2012; Valentine et al., 2014). A 2017 study identified water temperature,

taxonomic composition of initial bacterial community, and dissolved nutrient levels as factors that may regulate oil degradation rates by deep-sea indigenous microbes (Liu et al., 2017).

Due to the project area being located approximately 72 statute miles (116 km) from the nearest shoreline, it is expected that most water quality impacts would occur in offshore waters before low molecular weight alkanes and volatiles are weathered (Operational Science Advisory Team, 2011), especially in the event of a spill lasting <30 days. The results for Launch Area C049 (where WC 677 and 678 are located) are presented in **Table 4**. No shoreline contact is predicted within 3 or 10 days for shorelines from Texas to Louisiana. Predicted shoreline contact within 30 days of a spill ranges from Calhoun County, Texas, to Plaquemines Parish, Louisiana. The conditional probability of shoreline contact is low (1 to 2%) for all shorelines with predicted contact within 30 days.

C.2 Seafloor Habitats and Biota

The water depth at the location of the proposed wellsite is approximately 2,145 m (7,036 ft). According to BOEM (2016a), existing information for the deepwater Gulf of America indicates that the seafloor is composed primarily of soft sediments; exposed hard substrate habitats and associated biological communities are rare. The site clearance letters did not note the presence of hard bottom communities or potential seepage locations within 610 m (2,000 ft) of the proposed project activities (GEMS Inc, 2025a,b). The IPFs with potential impacts listed in **Table 2** are discussed below.

C.2.1 Soft Bottom Benthic Communities

There are no site-specific benthic community data from the project area. However, data from the Northern Gulf of Mexico Continental Slope Habitats and Benthic Ecology Study (Wei, 2006; Rowe and Kennicutt, 2009; Wei et al., 2010; Carvalho et al., 2013; Spies et al., 2016) can be used to describe typical baseline benthic communities in the area. **Table 5** summarizes data collected at two stations in water depths similar to that in the proposed project area.

Table 5. Baseline benthic community data from stations near the project area in similar depths sampled during the Northern Gulf of Mexico Continental Slope Habitats and Benthic Ecology Study (Adapted from: Wei, 2006; Rowe and Kennicutt, 2009).

Station	Water Depth (m)	Abundance		
		Meiofauna (>63 μm; individuals m ⁻²)	Macroinfauna (>300 mm; individuals m ⁻²)	Megafauna (>1 cm; individuals ha ⁻¹)
B3	2,618	155,817	814	362
NB5	2,063	117,263	706	1,600

Meiofaunal and megafaunal abundances from Rowe and Kennicutt (2009); macroinfaunal abundance from Wei (2006). ha = hectare.

Densities of meiofauna (animals passing through a 0.5-mm sieve but retained on a 0.062-mm sieve) at stations in the vicinity of the project area ranged from approximately 117,000 to 156,000 individuals m⁻² (**Table 5**) (Rowe and Kennicutt, 2009). Nematodes, nauplii, and harpacticoid copepods were the three dominant meiofaunal groups, accounting for about 90% of total abundance.

The benthic macroinfauna is characterized by small mean individual sizes and low densities, both of which reflect the meager primary production in surface waters of the Gulf of America continental slope (Wei, 2006). Densities decrease exponentially with water depth. Based on the Wei (2006) equation, the macroinfauna density in the project area is expected to be approximately 1,388 individuals m⁻²; however, actual densities at the proposed project area are unknown.

Polychaetes are typically the most abundant macroinfaunal group on the northern Gulf of America continental slope, followed by amphipods, tanaids, bivalves, and isopods. Carvalho et al. (2013) found polychaete abundance to be higher in the central region of the northern Gulf of America when compared to the eastern and western regions. Wei (2006) recognized four depth-dependent faunal zones (1 through 4), two of which are divided horizontally. The project area is within Zone 3W. Zone 3W extends along the northern Gulf of America, including Alaminos Canyon, and the base of the Sigsbee Escarpment (Wei, 2006). The most abundant species in this zone were the polychaetes *Tachytrypa* sp., *Levinsenia uncinata*, and *Paraonella monilaris*; and the bivalve *Heterodonta* spp. (Wei, 2006).

Common megafauna observed during the Northern Gulf of Mexico Continental Slope Habitats and Benthic Ecology Study included motile taxa such as echinoderms, cnidarians (sessile sea anemones, pens and whips), decapod crustaceans, and demersal fish (Rowe and Kennicutt, 2009).

Bacteria also are an important component in terms of biomass and cycling of organic carbon (Cruz-Kaegi, 1998). For example, in deep-sea sediments, Main et al. (2015) observed that microbial oxygen consumption rates increased and bacterial biomass decreased with hydrocarbon contamination. Bacterial biomass at the depth range of the project area typically is about 1 to 2 g C m⁻² in the top 15 cm of sediments (Rowe and Kennicutt, 2009).

IPFs that potentially may affect benthic communities are physical disturbance to the seafloor, effluent discharges (drilling muds and cuttings), and potential effects from large oil spill resulting from a well blowout at the seafloor. A small fuel spill would not affect benthic communities because the diesel fuel is expected to float and dissipate on the sea surface.

Impacts of Physical Disturbance to the Seafloor

In water depths such as those in the project area, DP drilling rigs disturb the seafloor only around the wellbore (surface hole location) where the bottom template and BOP are located. Depending upon the specific well configuration, this area of disturbance is generally about 0.25 ha (0.62 ac) per well (BOEM, 2012a).

The areal extent of these impacts from the proposed project are expected to be small compared to the lease area itself, and these types of soft bottom communities are ubiquitous along the northern Gulf of America continental slope (Gallaway, 1988; Gallaway et al., 2003; Rowe and Kennicutt, 2009). Impacts from the physical disturbance of the seafloor during this project are expected to be spatially localized and temporally short term. Therefore, these disturbances will not likely have a significant impact on soft bottom benthic communities in the region.

Impacts of Effluent Discharges

Drilling mud and cuttings are the only effluents that could be present in vicinity of the wellsite that are likely to affect local soft bottom benthic communities. During initial well drilling interval(s) before the marine riser is set, cuttings and WBM will be released at the seafloor. Excess cement slurry will also be released at the seafloor during casing installation for the riserless portion of the drilling operations. Cement slurry components typically include cement mix and some of the same chemicals used in WBM (Boehm et al., 2001; Fink, 2015). The main impacts will be burial and smothering of benthic organisms within several meters to tens of meters around the wellbore where cuttings and WBM physically contact the seafloor. Soft bottom sediments disturbed by cuttings, drilling muds, and cement slurry will eventually be recolonized through larval settlement and migration from adjacent areas. Because some deep-sea biota grow and reproduce slowly, recovery may require several years for the affected area within meters to tens of meters of the wellbore.

Discharges of treated SBM cuttings from the rig may affect benthic communities, primarily within several hundred meters of the wellsite. The fate and effects of SBM cuttings have been reviewed by Neff et al. (2000), and monitoring studies have been conducted in the Gulf of America by Continental Shelf Associates (2004; 2006). In general, treated cuttings with adhering SBMs tend to clump together and form piles close to the drillsite. Areas of SBM cuttings deposition may develop elevated organic carbon concentrations and anoxic conditions (Continental Shelf Associates, 2006). Where SBM cuttings accumulate in concentrations of approximately 1,000 mg kg⁻¹ or higher, benthic infaunal communities may be adversely affected due to both the toxicity of the base fluid and organic enrichment (with resulting anoxia) (Neff et al., 2000). Infauna numbers may increase and diversity may decrease as opportunistic species that tolerate low oxygen and high H₂S levels predominate (Continental Shelf Associates, 2006). As the base synthetic fluid is decomposed by microbes, the area will gradually return to pre-drilling conditions. Disturbed sediments will be recolonized through larval settlement and migration from adjacent areas.

The areal extent of impacts from drilling discharges will be small. Assuming a typical effect radius of 500 m (1,640 ft), the affected area around the wellsite would represent about 3% of the seafloor within a lease block. Impacts from drilling discharges are expected to have no significant impact on these ubiquitous soft bottom benthic communities in the region. It is expected that the rig will move to safe zones for short periods of time to perform maintenance on critical equipment. All discharges during these times are expected to meet NPDES permit requirements.

Impacts of a Large Oil Spill

The most likely effects of a subsea blowout on benthic communities would be within a few hundred meters of the wellsite. BOEM (2012a) estimated that a severe subsurface blowout could resuspend and disperse sediments within a 300 m (984 ft) radius. While coarse sediments (sands) would probably settle at a rapid rate within 400 m (1,312 ft) from the blowout site, fine sediments (silts and clays) could be resuspended for more than 30 days and dispersed over a wider area. Based on previous studies, surface sediments at the project area are assumed to largely be silt and clay (Rowe and Kennicutt, 2009).

While impacts from a large oil spill are anticipated to be confined to the immediate vicinity of the wellhead, depending on the specific circumstances of the incident, additional benthic

community impacts could extend beyond the immediate vicinity of the wellhead (BOEM, 2017). During the *Deepwater Horizon* incident, subsurface oil plumes were reported in water depths of approximately 1,100 m (3,600 ft), extending at least 22 miles (35 km) from the wellsite and persisting for more than a month (Camilli et al., 2010).

C.2.2 High-Density Deepwater Benthic Communities

As defined by NTL 2009-G40, high-density deepwater benthic communities are features or areas that could support high-density chemosynthetic communities or high-density hard bottom communities, including deepwater coral-dominated communities. Chemosynthetic communities were discovered in the central Gulf of America in 1984 and have been studied extensively (MacDonald, 2002). Deepwater coral communities are also known from numerous locations in the Gulf of America (Brooke and Schroeder, 2007; CSA International, 2007; Brooks et al., 2012). In the Gulf of America, deepwater coral communities occur almost exclusively on exposed authigenic carbonate rock created by a biogeochemical (microbial) process.

Monitoring programs on the Gulf of America continental slope have shown that benthic impacts from drilling discharges typically are concentrated within approximately 500 m (1,640 ft) of the wellsite, although detectable deposits may extend beyond this distance (Continental Shelf Associates, 2004; Neff et al., 2005; Continental Shelf Associates, 2006). In water depths such as those encountered in the project area, DP drilling vessels disturb the seafloor only around the wellbore where the bottom template and BOP are located. Depending on the specific well configuration, this area is approximately 0.25 ha (0.62 ac) per well (BOEM, 2012a).

The only IPF identified for this project that could affect high-density deepwater benthic communities is a large oil spill from a well blowout at the seafloor. A small fuel spill would not affect benthic communities because the diesel fuel would float and dissipate on the sea surface. Physical disturbance and effluent discharge are not considered IPFs for deepwater benthic communities because these communities are not expected to be present down current of the proposed wellsite.

Impacts of a Large Oil Spill

A large oil spill caused by a seafloor blowout could cause direct impacts (i.e., caused by the physical impacts of a blowout) on benthic communities within approximately 300 m (984 ft) of the wellhead (BOEM, 2012a; 2013). However, based on the wellsite clearance letters for the proposed wells (GEMS, 2025a,b), there are no seafloor features that could support high-density deepwater benthic communities within 610 m (2,000 ft) of the proposed wellsites. Therefore, this type of impact is not expected.

Additional benthic community impacts could extend beyond the immediate vicinity of the wellhead, depending on the specific circumstances (BOEM, 2017). During the *Deepwater Horizon* spill, subsurface plumes were reported at a water depth of approximately 1,100 m (3,600 ft), extending at least 55 miles (89 km) from the wellsite and persisting for more than a month (Camilli et al., 2010). Oil plumes that contact sensitive benthic communities before degrading could potentially impact the resource (BOEM, 2017). Potential impacts on sensitive resources would be an integral part of the decision and approval process for the use of dispersants, and such approval would be obtained from the Federal On-Scene Coordinator upon consultation with the regional response team, including USEPA, prior to the use of dispersants.

The biological effects and fate of the oil remaining in the Gulf of America from the *Deepwater Horizon* incident are still being studied, but numerous papers have been published discussing the nature of subsea oil plumes (e.g., Ramseur, 2011; Reddy et al., 2012; Valentine et al., 2014). Hazen et al. (2010) reported changes in plume hydrocarbon composition with distance from the source. Incubation experiments with environmental isolates demonstrated faster than expected hydrocarbon biodegradation rates at 5°C (41°F). Based on these results, Hazen et al. (2010) suggested the potential exists for intrinsic bioremediation of the oil plume in the deepwater column without substantial oxygen drawdown.

Potential impacts of oil on high-density deepwater benthic communities are discussed in recent EISs (BOEM, 2012a; 2015; 2016b; 2017, 2023a,b). Oil droplets or oiled sediment particles could come into contact with chemosynthetic organisms or deepwater corals in the vicinity of the spill site. Impacts could include loss of habitat, biodiversity, and live coral coverage; destruction of hard substrate; reduction or loss of one or more commercial and recreational fishery habitats; or changes in sediment characteristics (BOEM, 2023a).

C.2.3 Designated Topographic Features

WR 677 and 678 are not within or near a designated topographic feature or a no-activity zone as identified in NTL 2009-G39. The nearest designated Topographic Feature Stipulation Block is located approximately 112 statute miles (180 km) from the project area. There are no IPFs associated with routine operations that could cause impacts to designated topographic features.

Due to the distance from the project area, it is unlikely that designated topographic features could be affected by an accidental spill. A small fuel spill would float and dissipate on the surface and would not reach these seafloor features. In the event of an oil spill from a well blowout, a surface slick would not contact these seafloor features. If a subsurface plume were to occur, impacts on these features would be unlikely due to the distance and the difference in water depth from the source. Near-bottom currents in the region are predicted to flow along the isobaths (Nowlin et al., 2001) and typically would not carry a plume upward onto the continental shelf edge.

C.2.4 Pinnacle Trend Area Live Bottoms

The project area is not covered by the Live Bottom (Pinnacle Trend) Stipulation. As defined by NTL 2009-G39, the nearest Pinnacle Stipulation Block is located approximately 255 statute miles (410 km) from the project area. There are no IPFs associated with routine operations that could cause impacts to pinnacle trend area live bottoms due to the distance from the project area.

Due to the distance from the project area, it is unlikely that pinnacle trend live bottom areas would be affected by an accidental spill. A small fuel spill would float on the surface and would not reach these seafloor features. In the event of an oil spill from a well blowout, a surface slick would not contact these seafloor features. If a subsurface plume were to occur, impacts on these features would be unlikely due to the distance and the difference in water depth from the source. Near-bottom currents in the region are predicted to flow along the isobaths (Nowlin et al., 2001) and typically would not carry a plume upward onto the continental shelf edge.

C.2.5 Eastern Gulf Live Bottoms

The project area is not covered by the Live Bottom (Low-Relief) Stipulation, which applies to seagrass communities and low-relief hard bottom reef within the Eastern Gulf of America Planning Area leases in water depths of 100 m (328 ft) or less and portions of Pensacola and Destin Dome Area blocks in the Central Gulf of America Planning Area. The nearest block covered by the Live Bottom Stipulation, as defined by NTL 2009-G39, is located approximately 291 statute miles (469 km) from the project area. There are no IPFs associated with routine operations that could cause impacts to eastern Gulf live bottom areas due to the distance from the project area.

Because of the distance from the project area, it is unlikely that eastern Gulf live bottom areas would be affected by an accidental spill. A small fuel spill would float and dissipate on the surface and would not reach these seafloor features. In the event of an oil spill from a well blowout, a surface slick would not contact these seafloor features. If a subsurface plume were to occur, impacts on these features would be unlikely due to the distance and the difference in water depth from the source. Near-bottom currents in the region are predicted to flow along the isobaths (Nowlin et al., 2001) and typically would not carry a plume upward onto the continental shelf.

C.3 Threatened, Endangered, and Protected Species and Critical Habitat

This section discusses species listed as Endangered or Threatened under the Endangered Species Act (ESA). In addition, it includes all marine mammal species in the region, all of which are protected under the Marine Mammal Protection Act (MMPA).

Endangered or Threatened species that may occur in the project area and/or along the northern Gulf Coast are listed in **Table 6**. The table also indicates the location of critical habitat (if designated in the Gulf of America). Critical habitat is defined as (1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. The NMFS has jurisdiction for ESA-listed marine mammals (cetaceans), sea turtles, marine invertebrates, and fishes in the Gulf of America. The USFWS has jurisdiction for ESA-listed birds, terrestrial and freshwater species (e.g., beach mice, Florida salt marsh vole [*Microtus pennsylvanicus dukecampbelli*], Panama City crayfish [*Procambarus econfinae*]); the West Indian manatee (*Trichechus manatus*), and sea turtles while on their nesting beaches.

Table 6. Federally listed Endangered and Threatened species potentially occurring in the project area and along the northern Gulf Coast. Adapted from: U.S. Fish and Wildlife Service (2025a) and National Marine Fisheries Service (2025a).

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in Gulf of America
			Project Area	Coastal	
Marine Mammals					
Rice's whale ¹	<i>Balaenoptera ricei</i>	E	X	--	None
Sperm whale	<i>Physeter macrocephalus</i>	E	X	--	None
West Indian manatee	<i>Trichechus manatus</i> ²	T	--	X	Florida (Peninsular)
Sea Turtles					
Loggerhead turtle	<i>Caretta caretta</i>	T,E ³	X	X	Nesting beaches and nearshore reproductive habitat in Mississippi, Alabama, and Florida (Panhandle); <i>Sargassum</i> habitat including most of the central & western Gulf of America
Green turtle	<i>Chelonia mydas</i>	T	X	X	None
Leatherback turtle	<i>Dermochelys coriacea</i>	E	X	X	None
Hawksbill turtle	<i>Eretmochelys imbricata</i>	E	X	X	None
Kemp's ridley turtle	<i>Lepidochelys kempii</i>	E	X	X	None
Birds					
Piping Plover	<i>Charadrius melodus</i>	T	--	X	Coastal Texas, Louisiana, Mississippi, Alabama, and Florida (Panhandle)
Whooping Crane	<i>Grus americana</i>	E	--	X	Coastal Texas (Aransas National Wildlife Refuge)
Black-capped Petrel	<i>Pterodroma hasitata</i>	E	X	--	None
Rufa Red Knot	<i>Calidris canutus rufa</i>	T	--	X	None
Fishes					
Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	T	X	--	None
Giant manta ray	<i>Mobula birostris</i>	T	X	X	None
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	T	--	X	Coastal Louisiana, Mississippi, Alabama, and Florida (Panhandle)
Nassau grouper	<i>Epinephelus striatus</i>	T	--	X	None
Smalltooth sawfish	<i>Pristis pectinata</i>	E	--	X	Southwest Florida
Invertebrates					
Elkhorn coral	<i>Acropora palmata</i>	T	--	X	Florida Keys and the Dry Tortugas
Staghorn coral	<i>Acropora cervicornis</i>	T	--	X	Florida Keys and the Dry Tortugas
Pillar coral	<i>Dendrogyra cylindrus</i>	E	--	X	Southeast Florida and Florida Keys, Puerto Rico, St. Thomas, St. John, St. Croix, and Navassa Island

Table 6. (Continued).

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in Gulf of America
			Project Area	Coastal	
Rough cactus coral	<i>Mycetophyllia ferox</i>	T	--	X	Southeast Florida and Florida Keys, Puerto Rico, St. Thomas, St. John, St. Croix, and Navassa Island
Lobed star coral	<i>Orbicella annularis</i>	T	--	X	Southeast Florida and Florida Keys, Puerto Rico, St. Thomas, St. John, St. Croix, Navassa Island, East and West Flower Garden Banks, Rankin Bright Bank, Geyer Bank, and McGrail Bank
Mountainous star coral	<i>Orbicella faveolata</i>	T	--	X	Southeast Florida and Florida Keys, Puerto Rico, St. Thomas, St. John, St. Croix, Navassa Island, East and West Flower Garden Banks, Rankin Bright Bank, Geyer Bank, and McGrail Bank
Boulder star coral	<i>Orbicella franksi</i>	T	--	X	Southeast Florida and Florida Keys, Puerto Rico, St. Thomas, St. John, St. Croix, Navassa Island, East and West Flower Garden Banks, Rankin Bright Bank, Geyer Bank, and McGrail Bank
Panama City crayfish	<i>Procambarus econfinae</i>	T	--	X	South-central Bay County, Florida
Queen conch	<i>Aliger gigas</i>	T	--	X	None
Terrestrial Mammals					
Beach mice (Alabama, Choctawhatchee, Perdido Key, St. Andrew)	<i>Peromyscus polionotus</i> subsp. <i>Ammobates</i> , <i>allophrys</i> , <i>trissyllepsis</i> , and <i>peninsularis</i> , respectively	E	--	X	Alabama and Florida (Panhandle) beaches
Florida salt marsh vole	<i>Microtus pennsylvanicus dukecampbelli</i>	E	--	X	None

E = Endangered; T = Threatened; X = potentially present; -- = not present.

¹ In 2021, the National Marine Fisheries Service recognized that what had previously been accepted as a subspecies of the Bryde's whale is actually a separate species. The reclassification is formerly recognized under 86 *Federal Register* (FR) 47022 effective date 22 October 2021 as the Rice's whale (*Balaenoptera ricei*).

² There are two subspecies of West Indian manatee: the Florida manatee (*T. m. latirostris*), which ranges from the northern Gulf of America to Virginia, and the Antillean manatee (*T. m. manatus*), which ranges from northern Mexico to eastern Brazil. Only the Florida manatee subspecies is likely to be found in the northern Gulf of America.

³ The Northwest Atlantic Ocean Distinct Population Segment (DPS) of loggerhead turtles is designated as Threatened (76 FR 58868). The National Marine Fisheries Service and the U.S. Fish and Wildlife Service designated critical habitat for this DPS, including beaches and nearshore reproductive habitat in Mississippi, Alabama, and the Florida Panhandle as well as *Sargassum* spp. habitat throughout most of the central and western Gulf of America (79 FR 39756 and 79 FR 39856).

Coastal Endangered or Threatened species that may occur along the U.S. Gulf Coast include the West Indian manatee, Piping Plover (*Charadrius melodus*), Rufa Red Knot (*Calidris canutus rufa*) Florida salt marsh vole, Panama City crayfish, Whooping Crane (*Grus americana*), Gulf sturgeon (*Acipenser oxyrinchus desotoi*), smalltooth sawfish (*Pristis pectinata*), queen conch (*Aliger gigas*) and four subspecies of beach mouse. Critical habitat has been designated for all of these species (except the Florida salt marsh vole, Rufa Red Knot, and queen conch) as indicated in **Table 6** and discussed in individual sections. Two other coastal bird species (Bald Eagle [*Haliaeetus leucocephalus*] and Brown Pelican [*Pelecanus occidentalis*]) are no longer federally listed as Endangered or Threatened; these are discussed in **Section C.4.2**.

Five sea turtle species, the Rice's whale (*Balaenoptera ricei*), sperm whale (*Physeter macrocephalus*), oceanic whitetip shark (*Carcharhinus longimanus*), and giant manta ray (*Mobula birostris*), and the Black-capped Petrel (*Pterodroma hasitata*) are the only Endangered or Threatened species that could potentially occur within the project area. The listed sea turtles include the leatherback turtle (*Dermochelys coriacea*), Kemp's ridley turtle (*Lepidochelys kempii*), hawksbill turtle (*Eretmochelys imbricata*), loggerhead turtle (*Caretta caretta*), and green turtle (*Chelonia mydas*) (Pritchard, 1997). Effective 11 August 2014, NMFS has designated certain marine areas as critical habitat for the Northwest Atlantic Distinct Population Segment (DPS) of the loggerhead sea turtle (see **Section C.3.5**). No critical habitat has been designated in the Gulf of America for the leatherback turtle, Kemp's ridley turtle, hawksbill turtle, green turtle, or the sperm whale.

Four Endangered mysticetes (blue whale [*Balaenoptera musculus*], fin whale [*Balaenoptera physalus*], North Atlantic right whale [*Eubalaena glacialis*], and sei whale [*Balaenoptera borealis*]) have been reported in the Gulf of America, and are considered rare or extralimital (Würsig, 2017). These species are not included in the most recent NMFS stock assessment report (Hayes et al., 2022) nor in the most recent BOEM multisale EIS (BOEM, 2017); therefore, they are not considered further in the EIA.

The Rice's whale exists in the Gulf of America as a small, resident population. This species was formally known as a subspecies to the Bryde's whale (*Balaenoptera edeni brydei*) until a DNA study identified it as a separate species (Rosel et al., 2021). It is the only baleen whale known to be resident in the Gulf of America. The species is severely restricted in range, being found only in the northeastern Gulf in the waters of the DeSoto Canyon (Waring et al., 2016, Rosel et al., 2021). However, recent work by Soldevilla et al. (2022a) suggests the range may be broader than previously thought (see **Section C.3.2**).

In several recent acoustic studies in the Gulf of America (Soldevilla et al., 2022a,b; 2024), all Bryde's whale complex individuals are assumed to be Rice's whales. However, Bryde's whales have a global tropical and subtropical range that can include the Gulf of America. Moreover, in the latest NMFS Rice's whale Marine Mammal Stock Assessment Report (Hayes et al., 2023), all previous data of Gulf of America Bryde's whales from studies that pre-dated the Rosel et al. (2021) study that determined that Rice's whales are a distinct species were now assumed to all be Rice's whales. However, it is unclear on what percentage of Bryde's whale complex individuals that live or previously lived in Gulf of America are Rice's whales vs Bryde's whales due to having no DNA studies that analyzed a representative population of Gulf of America Bryde's whale complex individuals.

The giant manta ray could occur in the project area but is most commonly observed in the Gulf of America at the Flower Garden Banks. The Nassau grouper (*Epinephelus striatus*) has been observed in the Gulf of America at the Flower Garden Banks but is most commonly observed in shallow tropical reefs of the Caribbean and is not expected to occur in the project area. The smalltooth sawfish is a coastal species limited to shallow areas off the west coast of Florida and is not expected to occur in the project area. The Panama City crayfish is a coastal species in south-central Bay County, Florida and is not expected to occur in the project area.

Six Threatened coral species are known from the northern Gulf of America: elkhorn coral (*Acropora palmata*), staghorn coral (*Acropora cervicornis*), lobed star coral (*Orbicella annularis*), mountainous star coral (*Orbicella faveolata*), boulder star coral (*Orbicella franksi*) and rough cactus coral (*Mycetophyllia ferox*). Pillar coral (*Dendrogyra cylindrus*) is a known Endangered coral species from the northern Gulf of America. These seven coral species are shallow water, zooxanthellate species (containing symbiotic photosynthetic zooxanthellae which contribute to their nutritional needs) and are not present in the deepwater project area (see **Section C.3.18**).

There are no other Threatened or Endangered species in the Gulf of America that are likely to be adversely affected by either routine or accidental events. The IPFs with potential impacts listed in **Table 2** are discussed below.

C.3.1 Sperm Whale (Endangered)

The Endangered marine mammal likely to be present at or near the project area is the sperm whale. Resident populations of sperm whales occur within the Gulf of America; a species description is presented in the recovery plan for this species (NMFS, 2010b). Gulf of America sperm whales are classified as an Endangered species and a “strategic stock” (defined as a stock that may have unsustainable human-caused impacts) by NOAA Fisheries (Waring et al., 2016). A “strategic stock” is defined by the MMPA as a marine mammal stock that meets the following criteria:

- The level of direct human-caused mortality exceeds the potential biological removal level;
- Based on the best available scientific information, is in decline and is likely to be listed as a Threatened species under the ESA within the foreseeable future; or
- Is listed as a Threatened or Endangered species under the ESA or is designated as depleted under the MMPA.

Current threats to sperm whale populations are defined as “any factor that could represent an impediment to recovery.” Current threats to sperm whale populations worldwide include fisheries interactions, anthropogenic marine sound, vessel interactions, contaminants and pollutants, disease, injury from marine debris, research, predation and natural mortality, direct harvest, competition for resources, loss of prey base due to climate change and ecosystem change, and cable laying. In the Gulf of America, the impacts from many of these threats are identified as either low or unknown (BOEM, 2012a).

The distribution of sperm whales in the Gulf of America is correlated with mesoscale physical features such as eddies associated with the Loop Current (Jochens et al., 2008). Sperm whale populations in the north-central Gulf of America are present throughout the year (Davis et al., 2000). Results of a multi-year tracking study show female sperm whales are typically concentrated along the upper continental slope between the 200- and 1,000-m (656 and 3,280 ft) depth contours (Jochens et al., 2008). Male sperm whales were more variable in their

movements and were documented in water depths >3,000 m (9,843 ft). Generally, groups of sperm whales observed in the Gulf of America during the MMS-funded Sperm Whale Seismic Study (SWSS) consisted of mixed-sex groups comprising adult females with juveniles, and groups of bachelor males. Typical group size for mixed groups was 10 individuals (Jochens et al., 2008).

A review of protected species observer (PSO) sighting reports from seismic mitigation surveys in the Gulf of America conducted over a 6-year period found a mean group size for sperm whales of 2.5 individuals (Barkaszi et al., 2012). In these mitigation surveys, sperm whales were the most common large cetacean encountered. Tagging and observation data from the SWSS also showed that sperm whales' transit through the vicinity of the project area. Movements of satellite-tracked individuals suggest that this area of the continental slope is within the home range of the Gulf of America population (within the 95% utilization distribution) (Jochens et al., 2008).

IPFs that may potentially affect sperm whales include drilling rig presence, underwater sound, and lights; support vessel and helicopter marine sound; support vessel collisions; and two types of accidents (a small fuel spill and a large oil spill). Effluent discharges are likely to have negligible impacts on sperm whales due to rapid dilution, the small area of ocean affected, the intermittent nature of the discharges, and the mobility of these marine mammals. Compliance with NTL BSEE-2015-G03 is intended to minimize the potential for marine debris-related impacts on sperm whales.

Though NMFS (2025a) stated marine debris as an IPF, compliance with BSEE-NTL 2015-G03 will minimize the potential for marine debris-related impacts on sperm whales. NMFS (2025a) estimates that no more than three sperm whales will be non-lethally taken, with one sperm whale lethally taken through the ingestion of marine debris over 45 years of proposed action. Therefore, marine debris is likely to have negligible impacts on sperm whales and is not discussed further (See **Table 2**).

Impacts of Drilling Rig Presence, Marine Sound, and Lights

Sound from routine drilling activities (see **Section A.1**) has the potential to disturb individuals or groups of sperm whales or mask the sounds they would normally produce or hear. Behavioral responses to sound by marine mammals vary widely and overall, are short-term and include, temporary displacement or cessation of feeding, resting, or social interactions (NMFS, 2009a; Gomez et al., 2016; Southall et al., 2021). Additionally, behavioral changes resulting from auditory masking may induce an animal to produce more calls, longer calls, or shift the frequency of the calls. For example, masking caused by vessel sound was found to result in a reduced number of sperm whale calls in the Gulf of America (Azzara et al., 2013).

NMFS (2024) lists sperm whales in the same functional hearing group (i.e., high frequency cetaceans) as most dolphins and other toothed whales (i.e., odontocetes), with an estimated hearing sensitivity from 150 Hz to 160 kHz. Therefore, the frequencies of drilling and DP vessel-related sound overlap with the hearing sensitivity range of sperm whales. Frequencies <150 Hz produced by the drilling operations may be audible but are not likely to be perceived with any significance by high frequency cetaceans. The sperm whale may possess better low-frequency hearing than some of the other odontocetes, although not as low as many baleen whale species whose vocalizations between 12 Hz and 28 kHz (Wartzok and Ketten, 1999; Southall et al., 2019). Generally, most of the vocalizations produced by sperm whales

vocalizations occur at frequencies below 10 kHz, although diffuse energy up to and past 20 kHz is common, with SPL source levels up to 236 dB re1 μPa m (Møhl et al., 2003).

Observations of sperm whales near offshore oil and gas operations suggest an inconsistent response to anthropogenic marine sound (Jochens et al., 2008). Most observations of behavioral responses of marine mammals to non-impulsive sources such as drilling sound, in general, involve short-term behavioral responses, which included onset of avoidance behavior and the cessation of feeding, resting, or social interactions (NMFS, 2010b; Southall et al., 2021). Animals can determine the direction from which underwater sound arrives based on cues, such as differences in arrival times, sound levels, and phases at the two ears. Thus, an animal's directional hearing capabilities have a bearing on its ability to avoid sound sources (National Research Council, 2003b).

NMFS (2024) presents criteria that are used to determine auditory injury (i.e., permanent threshold shifts [PTS], temporary threshold shifts [TTS]) thresholds for marine mammals. Behavioral disturbance thresholds have not been updated in the most recent acoustic guidance (NMFS, 2024) and therefore, revert to thresholds established and published by NMFS in FR 70(7): 1871-1875 (NMFS and NOAA, 2005) and summarized in NMFS (2023a). For high frequency cetaceans exposed to non-impulsive sources (which include the proposed drilling operations), acoustic injury such as PTS estimated to occur when the animal has received a sound exposure level over 24 hours ($\text{SEL}_{24\text{h}}$) of 201 dB re 1 μPa^2 s. Similarly, TTS is estimated to occur when the animal has received an $\text{SEL}_{24\text{h}}$ of 181 dB re 1 μPa^2 s. Given the non-impulsive nature of drilling sound and the estimated source levels (**Section A.1**), sperm whales are unlikely to be exposed to sound above the PTS threshold. While sound during drilling rig operations may exceed the TTS threshold, it is expected that, due to the relatively stationary nature of these vessels, sperm whales would move away from the proposed operations area, reducing the duration that individuals are exposed to sound, further reducing the likelihood of TTS being realized. Therefore, due to transient nature of sperm whales and the stationary nature of drilling activities, it is not expected that any sperm whales will remain in proximity to the source for a full 24-hour period to receive an $\text{SEL}_{24\text{h}}$ necessary for the onset of auditory threshold shifts.

Noise associated with proposed drilling operations may cause behavioral disturbance effects to sperm whales. Behavioral disturbance thresholds for marine mammals are applied equally across all functional hearing groups. Received SPL of 120 dB re 1 μPa from a non-impulsive source is considered high enough to elicit the onset of a behavioral reaction in some marine mammal species. The 120-dB isopleth may extend tens to hundreds of kilometers from the source depending on the propagation environment. However, in the case of behavioral responses, exposure to above-threshold sound levels alone does not indicate a behavioral response and, more importantly, do not equate to biologically important responses (Southall et al., 2016; Ellison et al., 2012).

There are other OCS facilities and activities near the project area, and the region as a whole has a large number of similar marine sound sources (HDR [Athens, AL], 2022). Drilling-related marine sound associated with this project may contribute to increases in the marine sound environment within the region, but it is not expected to be at amplitudes above ambient sound conditions sufficient enough to result in long-term behavioral effects to sperm whales. The proposed activity may cause behavioral effects, primarily avoidance or temporary displacement from the project area, but are not expected to be biologically significant for the population.

Drilling rig lighting and presence are not expected to impact sperm whales (NMFS, 2007; BOEM, 2016a; 2017) and therefore, are not identified as IPFs.

Impacts of Support Vessel and Helicopter Traffic

Support vessel traffic has the potential to disturb sperm whales, and there is also a risk of vessel collisions, which are identified as a threat in the recovery plan for this species (NMFS, 2010b). To reduce the potential for vessel collisions, BOEM issued BOEM-2016-G01. This NTL recommends that vessel operators and crews receive protected species identification training. This NTL was reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) replaces compliance with the NTL as well as the amendment in April 2021 (NMFS, 2021a); a new NTL in response to the 2025 Biological Opinion has not yet been issued. Operators should follow the mitigation measures summarized in Table 4.8-2 of the 2025 PEIS (BOEM, 2025) and those presented in Attachment 3 of the 2025 Biological Opinion (NMFS, 2025a).

Vessel operators are required to reduce vessel speed to 10 knots or less, as safety permits, when mother/calf pairs, pods, or large assemblages of cetaceans are observed near an underway vessel (NTL BOEM-2016-G01). When sperm whales are sighted while a vessel is underway, the vessel should take action (e.g., attempt to remain parallel to the whale's course, avoid excessive speed or abrupt changes in direction until the whale has left the area) as necessary to avoid violating the relevant separation distance. However, if the sperm whale is sighted within this distance, the vessel should reduce speed and shift the engine to neutral and not re-engage until the whale is outside of the separation area. This does not apply to any vessel towing gear (NMFS [2025a] Attachment 1). Compliance with these mitigation measures will minimize the likelihood of vessel collisions as well as reduce the chance for disturbing sperm whales. However, this mitigation is effective only during daylight hours and during periods of adequate visibility.

NMFS (2025a) analyzed the potential for vessel collisions and harassment of sperm whales in its Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico. NMFS concluded that the observed avoidance of passing vessels by sperm whales is an advantageous response to avoid a potential threat and is not expected to result in any significant effect on migration, breathing, nursing, breeding, feeding, or sheltering to individuals, or have any consequences at the level of the population. With the implementation of the NMFS vessel collision protocols listed in Attachment 3 of NMFS (2025a) in addition to the NTL BOEM-2016-G01, NMFS (2025a) concluded that the likelihood of collisions between vessels and sperm whales would be reduced during daylight hours. During nighttime and during periods of poor visibility, it is assumed that vessel sound and sperm whale avoidance of moving vessels would reduce the chance of vessel collisions with this species. It is, however, likely that a collision between a sperm whale and a moving support vessel would result in severe injury or mortality of the stricken animal. The current Potential Biological Removal (PBR) level for the Gulf of America stock of sperm whales is 2.0 (Hayes et al., 2022). The PBR level is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. NMFS (2025a) estimated that there would be four non-lethal takes and 12 lethal vessel strikes over the course of 45 years. Mortality of a single sperm whale would constitute a significant impact to the local (Gulf of America) stock of sperm whales but would not likely be significant at the species level.

Helicopter traffic also has the potential to disturb sperm whales. Smultea et al. (2008) documented responses of sperm whales offshore Hawaii to fixed wing aircraft flying at an altitude of 245 m (800 ft). A reaction to the initial pass of the aircraft was observed during 3 (12%) of 24 sightings. All three responses consisted of a hasty dive and occurred at <360 m (1,180 ft) lateral distance from the aircraft. Additional reactions were seen when aircraft circled certain whales to make further observations. Based on other studies of cetacean responses to sound, the authors concluded that the observed reactions to brief overflights by the aircraft were short-term and limited to behavioral disturbances.

While flying offshore in the Gulf of America, support helicopters maintain altitudes above 213 m (700 ft) during transit to and from the working area. In the event that a whale is observed during transit, the helicopter will not approach or circle the animals. Although whales may respond to helicopters (Smultea et al., 2008), NMFS (2025a) concluded that this altitude would minimize the potential for disturbing sperm whales. Therefore, no significant impacts are expected.

Impacts of a Small Fuel Spill

Potential spill impacts on marine mammals, including sperm whales, are discussed by NMFS (2020a) and BOEM (2017). Oil impacts on marine mammals are discussed by Geraci and St. Aubin (1990) and by the Marine Mammal Commission (MMC) (2011) with discussions germane to the Gulf of America populations concerning composition and fate of petroleum and spill-treating agents in the marine environment, aspects of cetacean ecology, and physiological and toxic effects of oil on cetaceans. For this EP, there are no unique site-specific issues with respect to spill impacts on these animals that were not analyzed in the previous documents.

A small fuel spill in offshore waters would produce a thin sheen on the water surface and introduce concentrations of petroleum hydrocarbons and their degradation products. The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time of the spill and the effectiveness of spill response measures. **Section A.9.1** discusses the likely fate of a small fuel spill and indicates that over 90% would be evaporated or dispersed naturally within 24 hours (NOAA, 2022). The area of the sea surface with diesel fuel on it would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions.

Direct physical and physiological effects of exposure to diesel fuel could include skin irritation, inflammation, or necrosis; chemical burns of skin, eyes, and mucous membranes; inhalation of toxic fumes; ingestion of oil directly or via contaminated prey; and stress from the activities and marine sound of response vessels and aircraft (MMC, 2011). However, due to the limited areal extent and short duration of water quality impacts from a small fuel spill as well as the mobility of sperm whales, no significant impacts would be expected.

The probability of a fuel spill will be minimized by Chevron's preventative measures during routine operations, including fuel transfer. In the unlikely event of a spill, implementation of Chevron's ROSRP will mitigate and lessen the potential for impacts on sperm whales. Given the open ocean location of the project area, the duration of a small spill is expected to be brief and therefore potential for impacts to be minimal.

Impacts of a Large Oil Spill

Potential spill impacts on marine mammals, including sperm whales, are discussed by NMFS (2020a) and BOEM (2017, 2023a,b). Oil impacts on marine mammals are discussed by Geraci and St. Aubin (1990) and by the MMC (2011). For this EP, there are no unique site-specific issues with respect to spill impacts on sperm whales.

Impacts of oil spills on sperm whales can include direct impacts from oil exposure as well as indirect impacts due to response activities and materials (e.g., vessel traffic, marine sound, and dispersants) (MMC, 2011). Direct physical and physiological effects can include skin irritation, inflammation, or necrosis; chemical burns of skin, eyes, and mucous membranes; inhalation of toxic fumes; ingestion of oil (and dispersants) directly or via contaminated prey; and stress from the activities and marine sound of response vessels and aircraft. The level of impact of oil exposure depends on the amount, frequency, and duration of exposure; route of exposure; and type or condition of petroleum compounds or chemical dispersants (Hayes et al., 2020). Complications of the above may lead to dysfunction of immune and reproductive systems, physiological stress, declining physical condition, and death. Behavioral responses can include displacement of animals, including displacement from prime habitat, disruption of social structure, changing prey availability and foraging distribution and/or patterns, changing reproductive behavior/productivity, and changing movement patterns or migration (MMC, 2011).

In the event of a large spill, the level of vessel and aircraft activity associated with spill response could disturb sperm whales and potentially result in vessel collisions, entanglement, or other injury or stress. Response vessels are expected to operate in accordance with NTL BOEM-2016-G01 to reduce the potential for colliding with or disturbing these animals. This NTL was reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) and the amendment in April 2021 (NMFS, 2021a) replaces compliance with the NTL; a new NTL in response to the 2025 Biological Opinion has not yet been issued. Operators should follow the mitigation measures summarized in Table 4.8-2 of the 2025 PEIS (BOEM, 2025) and those presented in Attachment 3 of the 2025 Biological Opinion (NMFS, 2025a). Based on the current PBR level for the Gulf of America stock of sperm whales (2.0), mortality of a single sperm whale would constitute a significant impact to the local (Gulf of America) stock of sperm whales but would not likely be significant at the species level.

C.3.2 Rice's Whale (Endangered)

A study by Rosel et al. (2021), identified the genetically distinct northern Gulf of America Bryde's whale stock as a new species of baleen whale named the Rice's whale through DNA analysis. The reclassification was approved by NMFS under 86 FR 47022 and was effective 22 October 2021. The Rice's whale is the only year-round resident baleen whale in the northern Gulf of America. The Rice's whale is sighted most frequently in the waters over DeSoto Canyon between the 100 m (328 ft) and 1,000 m (3,280 ft) isobaths (**Figure 3** ; Rosel et al., 2016; Hayes et al., 2021). **Figure 3** also shows the Rice's whale Biologically Important Area defined in 2015 after ESA Section 7 consultations between NMFS and other agencies, as well as the Rice's Whale Core Distribution Area defined in 2019 by NMFS.

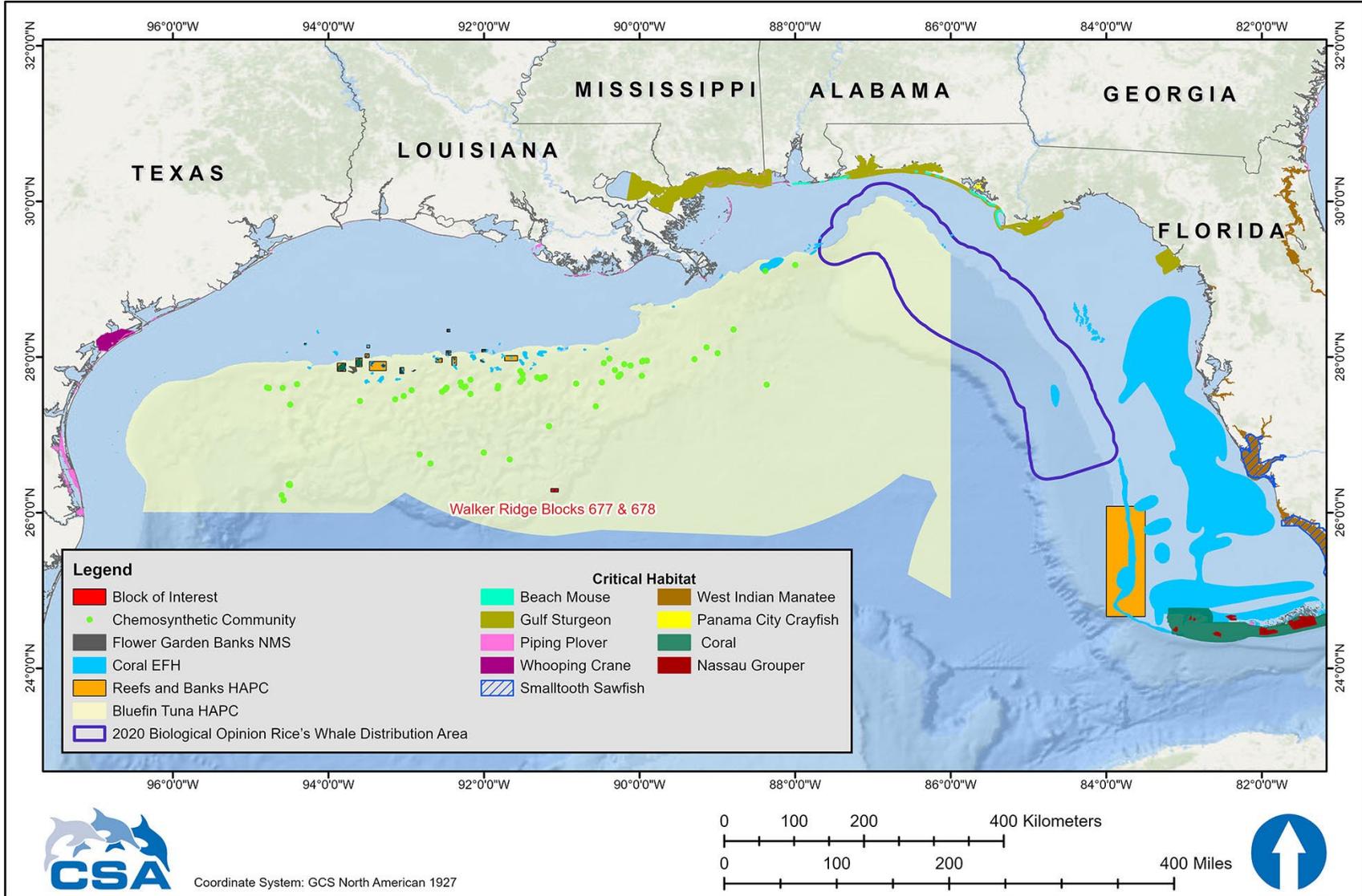


Figure 3. Location of selected environmental features in relation to the project area. EFH = Essential Fish Habitat; HAPC = Habitat Area of Particular Concern; NMS = National Marine Sanctuary.

Most sightings have been made in the DeSoto Canyon region and off western Florida, although there have been some in the west-central portion of the northeastern Gulf of America. Soldevilla et al. (2022a) identified new variants of long-moan calls along the northwestern Gulf of America shelf break that were determined to share distinctive features with typical eastern Gulf of America long-moan calls. A genetically confirmed sighting of a Rice's whale individual offshore Corpus Christi, Texas in 2017, along with the newly identified long-moan calls in the northwestern Gulf of America indicate that Rice's whales may occur in a broader range in the Gulf of America than previously known and this broader range should be considered when designating critical habitat. It is not currently possible to differentiate between Rice's whales and Bryde's whales without performing DNA sampling or by examining the skull from a deceased specimen. For the purposes of mitigation, any Bryde's whale complex individual detected would be treated as a possible Rice's whale.

Kiszka et al. (2023) studied the drivers of resource selection by Rice's whale in relation to prey availability and energy density. The study indicated that Rice's whales are selective predators consuming schooling prey with the highest energy content (i.e., silver rag [*Ariomma bondi*]). The silver rag is found at a depth range of 25 to 640 m (82 to 2,100 ft) primarily over muddy bottoms on the OCS though juveniles can be within the surficial waters (Smithsonian Tropical Research Institute, 2015). Therefore, it is unlikely that Rice's whales would occur in the project area. However, support vessels transiting through the 25 to 640 m (82 to 2,100 ft) water depths could encounter a Rice's whale, although unlikely given the rate of sightings of the whales.

In 2014, a petition was submitted to designate the northern Gulf of America population as a DPS and list it as Endangered under the ESA (Natural Resources Defense Council, 2014). This petition received a 90-day positive finding by NMFS in 2015 and a proposed rule to list was published in 2016 (Hayes et al., 2019). On 15 April 2019, NMFS issued a Final Rule to list the Gulf of America DPS of Bryde's whale as Endangered under the ESA. NMFS Final Rule on the reclassification (86 FR 47022) does not affect the ESA standing; thus, the Rice's whale is listed as an Endangered species. In 2023, the NMFS proposed designated critical habitat for the Rice's whale (NMFS, 2023b). This habitat included both the northwestern and northeastern Gulf of America, extending from the 100 m to 400 m isobaths (NMFS, 2023b); a formal decision on this designation has not yet been made (NMFS, 2025a).

Although it is unlikely that the Rice's whales would occur in the project area, IPFs that could affect the Rice's whales, if present, include drilling rig presence, marine sound, and lights; support vessel and helicopter traffic; and both types of spill accidents: a small fuel spill and a large oil spill. Effluent discharges are likely to have negligible impacts on Rice's whales due to rapid dispersion, the small area of ocean affected, the intermittent nature of the discharges, and the mobility and low abundance of Rice's whales in the Gulf of America.

Though NMFS (2025a) stated marine debris as an IPF, compliance with BSEE-NTL 2015-G03 and NMFS (2025a) Attachment 2 will minimize the potential for marine debris-related impacts on Rice's whales. NMFS (2025a) estimated no lethal takes of Rice's whale (previously referred to as Bryde's whales) from marine debris over 45 years of proposed action. Therefore, marine debris is likely to have negligible impacts on Rice's whales and is not further discussed (See **Table 2**).

Impacts of Drilling Rig Presence, Marine Sound, and Lights

NMFS (2024, 2025a) lists Rice's whales in the functional hearing group of low-frequency cetaceans (baleen whales), with an estimated hearing sensitivity from 7 Hz to 36 kHz. Noise produced by the drilling rig and project-associated vessels may be emitted at levels that could potentially disturb individual whales or mask the sounds animals would normally produce or hear. Sound associated with drilling activities are relatively weak in intensity relative to impulsive sources such as airgun sound, and an individual animal's sound exposure would be transient. As discussed in **Section A.1**, an actively drilling rig may produce broadband (10 Hz to 10 kHz) SPL source levels ranging from approximately 180 to 190 dB re 1 μPa m (Hildebrand, 2005). Frequencies <1,000 Hz produced by the drilling operations are more likely to be perceived by low-frequency cetaceans, such as the Rice's whale.

NMFS (2024) presents criteria that are used to determine physiological (i.e., auditory injury) thresholds for marine mammals. For low-frequency cetaceans, specifically the Rice's whale, permanent and temporary threshold shift onset from non-impulsive sources is estimated to occur at $\text{SEL}_{24\text{h}}$ of 197 dB re 1 $\mu\text{Pa}^2 \text{ s}$ and 177 re 1 $\mu\text{Pa}^2 \text{ s}$, respectively. Given the non-impulsive nature of drilling sound and the estimate source levels, Rice's whales are unlikely to be exposed to noise above the PTS threshold. While sound during drilling operations may exceed the TTS threshold, it is expected that, due to the relatively stationary nature of the drilling rig and support vessels, Rice's whales would move away from the proposed operations area, reducing the duration that individuals are exposed to project-related underwater sound, further reducing the likelihood of auditory injuries being realized. Additionally, the project area is in the Central Gulf of America OCS Planning Area, approximately 72 statute miles (116 kilometers [km]) from the nearest shoreline in Louisiana and outside the main distribution range identified for this species (88 FR 47453; NOAA Fisheries, 2023a) so it is unlikely this species will be exposed to drilling sound associated with the project. Therefore, due to the short propagation distance of above-threshold $\text{SEL}_{24\text{h}}$, the stationary nature of the proposed activities, and the low likelihood of encountering this species in the project area, it is not expected that any Rice's whales will receive exposure levels necessary for the onset of auditory threshold shifts.

Received SPL of 120 dB re 1 μPa from non-impulsive, continuous sources are considered high enough to elicit the onset of a behavioral reaction in some marine mammal species. The 120-dB isopleth may extend tens to hundreds of kilometers from the source depending on the propagation environment. However, exposure to SPL of 120 dB re 1 μPa does not alone equate to a behavioral response or a biological consequence; rather it represents the level at which onset of a behavioral response may occur that, more importantly, may not result in biologically significant responses (Southall et al., 2016; Ellison et al., 2012).

Drilling-related sound associated with this project may contribute to increases in the ambient sound environment of the region but are not expected to cause sound-related impacts to Rice's whales. Drilling rig lighting and presence are not expected to impact Rice's whales (BOEM, 2017).

Impacts of Support Vessel and Helicopter Traffic

Support vessel traffic has the potential to disturb Rice's whales and create the potential for vessel collisions. Kiszka et al. (2023) indicated through Bayesian stable isotope mixing models that Rice's whales primarily feed on silver rag found between 25 and 640 m (82 and 2,100 ft) water depths. Although it is unlikely support vessels will encounter Rice's whale given that they

are primarily found over DeSoto Canyon between the 100 m (328 ft) and 1,000 m (3,280 ft) isobaths (**Figure 2**; Rosel et al., 2016; Hayes et al., 2021).

To reduce the potential for vessel collisions, BOEM has issued NTL BOEM-2016-G01, which recommends protected species identification training, and that vessel operators and crews maintain a vigilant watch for marine mammals and slow down or stop their vessel to avoid colliding with protected species and requires operators to report sightings of any injured or dead protected species. This NTL was reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) and the amendment in April 2021 (NMFS, 2021) replaces compliance with the NTL; a new NTL has not yet been issued in response to the 2025 Biological Opinion.

Operators should follow the mitigation measures summarized in Table 4.8-2 of the 2025 PEIS (BOEM, 2025) and those presented in Attachment 3 of the 2025 Biological Opinion (NMFS, 2025a). Per the 2025 Biological Opinion, any transit through the Rice's Whale Area (RWA), as identified in the 2020 Biological Opinion, requires a visual observer, either third-party or crew with sufficient training, maintaining vigilant watch for Rice's whales and other marine mammals when within the RWA (NMFS, 2025a). Other requirements when transiting through the RWA include a 10-knot year-round speed restriction, no transit at night or during low visibility, and an operating AIS system onboard for vessel associated with oil and gas activity and 65 feet or greater (NMFS, 2025a). After the completion of transit, a post-transit report for any Rice's whales or other marine mammals must be submitted (NMFS, 2025a). Any deviation from these requirements (such as for an emergency regarding safety of the vessel or crew) requires reporting to BSEE and BOEM within 24 hours (NMFS, 2025a).

When whales are sighted, vessel operators and crews are required to maintain a distance of 500 m (1,640 ft) or greater whenever possible (NTL BOEM-2016-G01; NMFS, 2020a, 2021, 2025a). Vessel operators are required to reduce vessel speed to 10 knots or less, as safety permits, when mother/calf pairs, pods, or large assemblages of cetaceans are observed near an underway vessel (NTL BOEM-2016-G01). When a Rice's whale or potential Rice's whale (NMFS, 2025a) is sighted while a vessel is underway, the vessel should take action (e.g., attempt to remain parallel to the whale's course, avoid excessive speed or abrupt changes in direction until the whale has left the area) as necessary to avoid violating the relevant separation distance. However, if the whale is sighted within this distance, the vessel should reduce speed and shift the engine to neutral and not re-engage until the whale is outside of the separation area. This does not apply to any vessel towing gear (NMFS, 2025a Attachment 1).

The current PBR level for the Gulf of America stock of Rice's whale is 0.1 (Hayes et al., 2022). NMFS (2025a,c) estimated five nonlethal takes and six lethal vessel strikes over 45 years of proposed action. Mortality of a single Rice's whale would constitute a significant impact to the local (Gulf of America) stock of Rice's whales. However, it is very unlikely that Rice's whale occurs within the project area, including the transit corridor for support vessels; consequently, the probability of a vessel collision with this species is extremely low.

Helicopter traffic also has the potential to disturb Rice's whales and based on studies of cetacean responses to sound, the observed responses to brief overflights by aircraft were short-term and limited to behavioral disturbances (Smultea et al., 2008). Helicopters maintain altitudes above 213 m (700 ft) during transit to and from the offshore working area. In the event that a whale is observed during transit, the helicopter will not approach or circle the animal(s).

In addition, guidelines and regulations issued by NMFS under the authority of the MMPA specify that helicopters maintain an altitude of 305 m (1,000 ft) within 100 m (328 ft) of marine mammals (BOEM, 2016a; 2017; NMFS, 2020a). Due to the brief potential for disturbance the low density of Rice's whales in the Gulf of America, no significant impacts are expected.

Impacts of a Small Fuel Spill

Potential spill impacts on marine mammals are discussed by NMFS (2025a) and BOEM (2012a; 2015; 2016b; 2017; 2023a,b). Oil impacts on marine mammals are discussed by Geraci and St. Aubin (1990) and by the MMC (2011). In the unlikely event of a spill, implementation of Chevron's ROSRP will mitigate and reduce the potential for impacts on Rice's whales. Given the open ocean location of the project area and the brief duration of a small spill, any impacts are expected to be minimal.

A small fuel spill in offshore waters would produce a thin slick on the water surface and introduce concentrations of petroleum hydrocarbons and their degradation products. The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time of the spill as well as the effectiveness of spill response measures.

Section A.9.1 discusses the likely fate of a small fuel spill and indicates that more than 90% would evaporate or disperse naturally within 24 hours (NOAA, 2022). The area of diesel fuel on the sea surface would range from 1.2 to 12 ac (0.5 to 5 ha), depending on sea state and weather conditions at the time of a spill.

Direct physical and physiological effects of exposure to diesel fuel could include skin irritation, inflammation, or necrosis; chemical burns of skin, eyes, and mucous membranes; inhalation of toxic fumes; ingestion of oil directly or via contaminated prey; and stress from the activities and sound of response vessels and aircraft (MMC, 2011). However, due to the limited areal extent and short duration of water quality impacts from a small fuel spill, as well as the mobility of Rice's whales and the unlikelihood of occurrence in the project area, no significant impacts are expected.

Impacts of a Large Oil Spill

Potential spill impacts on marine mammals are discussed by BOEM (2012a; 2015; 2016b; 2017; 2023a,b), NMFS (2025a), Geraci and St. Aubin (1990), and the MMC (2011). Potential impacts of a large oil spill on Rice's whales could include direct impacts from oil exposure as well as indirect impacts due to response activities and materials (e.g., vessel traffic, sound, and dispersants) (MMC, 2011). Direct physical and physiological effects could include skin irritation, inflammation, or necrosis; chemical burns of skin, eyes, and mucous membranes; inhalation of toxic fumes; ingestion of oil (and dispersants) directly or via contaminated prey; and stress from the activities and sound of response vessels and aircraft. The level of impact of oil exposure depends on the amount, frequency, and duration of exposure; route of exposure; and type or condition of petroleum compounds or chemical dispersants (Hayes et al., 2019). Complications of the above may lead to dysfunction of immune and reproductive systems, physiological stress, declining physical condition, and death. Behavioral responses can include displacement of animals from prime habitat, disruption of social structure, changing prey availability and foraging distribution and/or patterns, changing reproductive behavior/productivity, and changing movement patterns or migration (MMC, 2011).

In the event of a large spill, the level of vessel and aircraft activity associated with spill response could disturb Rice's whales and potentially result in vessel collisions, entanglement, or other injury or stress.

Response vessels are expected to operate in accordance with NTL BOEM-2016-G01 and NMFS (2020a, 2021a, 2025a Attachment 3) (see **Table 1**) to reduce the potential for colliding with or disturbing these animals. In the event of oil from a large spill contacting Rice's whales, it is expected that impacts resulting in the injury or death of individual Rice's whales would be significant based on the current PBR level for the Gulf of America subspecies and stock (0.1). Mortality of a single Rice's whale would constitute a significant impact to the local (Gulf of America) stock of Rice's whales. The core distribution area for Rice's whales is within the eastern Gulf of America OCS Planning Area; therefore, it is unlikely that Rice's whales would occur within the project area. Consequently, the probability of spilled oil from a project-related well blowout reaching Rice's whales is extremely low.

C.3.3 West Indian Manatee (Threatened)

Most of the Gulf of America manatee population is located in peninsular Florida, but manatees have been seen as far west as Texas during the summer (USFWS, 2001a). A species description is presented in the West Indian manatee recovery plan (USFWS, 2001a). Critical habitat of the West Indian manatee has been designated in southwest Florida.

Manatee sightings in Louisiana have increased as the species extends its presence farther west of Florida in the warmer months (Wilson, 2003). Manatees are typically found in coastal and riverine habitats, but have been seen on rare occasions in deepwater areas, during colder months when they seek refuge from colder coastal waters (USFWS, 2001a; Fertl et al., 2005; Pabody et al., 2009). There have been three verified reports of Florida manatee sightings by PSOs on the OCS during seismic mitigation surveys in mean water depths of over 600 m (1,969 ft) (Barkaszi and Kelly, 2019).

IPFs that potentially may affect manatees include support vessel and helicopter traffic and a large oil spill. A small fuel spill in the project area would be unlikely to affect manatees, as the project area is approximately 185 statute miles (298 km) from the nearest shoreline (Louisiana).

As explained in **Section A.9.1**, a small fuel spill would not be expected to make landfall or reach coastal waters prior to dissipating. Compliance with BSEE-NTL 2015-G03 is intended to minimize the potential for marine debris-related impacts on manatees.

Impacts of Support Vessel and Helicopter Traffic

Support vessel traffic has the potential to disturb manatees, and there is also a risk of vessel collisions, which are identified as a threat in the recovery plan for this species (USFWS, 2001a). Manatees are expected to be limited to shelf and coastal waters, and impacts are expected to be limited to transits of these vessels and helicopters through these waters. To reduce the potential for vessel collisions, BOEM issued NTL 2016-G01, which recommends protected species identification training for vessel operators and that vessels slow down or stop their vessel to avoid colliding with protected species (NMFS, 2025a Attachment 1). NTL 2016-G01 was reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) replaces compliance with the NTL and in an amendment published in April 2021 (NMFS, 2021a); a new NTL in response to the 2025 Biological Opinion has not yet been issued.

Vessel collision avoidance measures described in NMFS (2020a, 2021, 2025a) for the marine mammal species managed by that agency may also provide some additional indirect protections to manatees. If a manatee is sighted, vessels associated with the operation should operate at no wake/idle speed within that area, follow routes in deep water whenever possible, and attempt to maintain a distance of 50 m (164 ft) if practical. This does not apply to any vessel towing gear (e.g., source towed array and site clearance trawling).

Compliance with these mitigation measures will minimize the likelihood of vessel collisions as well as reduce the chance of disturbing manatees during daylight hours. The current PBR level for the Florida subspecies of West Indian manatee is 14 (USFWS, 2014). In the event of a vessel collision during support vessel transits, the mortality of a single manatee would constitute an adverse but insignificant impact on the subspecies.

Helicopter traffic has the potential to disturb manatees and Rathbun (1988) reported that manatees were disturbed more by low-flying 20 to 160 m (66 to 525 ft) helicopters than by fixed-wing aircraft. Helicopters used in support operations maintain a minimum altitude of 213 m (700 ft) while in transit offshore, 305 m (1,000 ft) over unpopulated areas or across coastlines, and 610 m (2,000 ft) overpopulated areas and sensitive habitats such as wildlife refuges and park properties. This helicopter traffic mitigation measure will minimize the potential for disturbing manatees and results in no expected impacts.

Impacts of a Large Oil Spill

The potential for significant impacts to manatees from a large oil spill would be most likely associated with coastal oiling in areas of manatee habitats. The 30-day OSRA modeling (**Table 4**) indicates nearshore waters and embayments from Calhoun County, Texas, to Plaquemines Parish, Louisiana could be affected within 30 days (1 to 2% conditional probability).

In the event that manatees were exposed to oil, effects could include direct impacts from oil exposure as well as indirect impacts due to response activities and materials (e.g., vessel traffic, marine sound, dispersants) (MMC, 2011). Direct physical and physiological effects can include asphyxiation, acute poisoning, lowering of tolerance to other stress, nutritional stress, and inflammation from infection (BOEM, 2017). Indirect impacts include stress from the activities and sound of response vessels and aircraft. Complications of the above may lead to dysfunction of immune and reproductive systems, physiological stress, declining physical condition, and death. Behavioral responses can include displacement of animals from prime habitat, disruption of social structure, changing foraging distribution and/or patterns, changing reproductive behavior/productivity, and changing movement patterns or migration (MMC, 2011).

In the event that a large spill reached coastal waters where manatees were present, the level of vessel and aircraft activity associated with spill response could disturb manatees and potentially result in vessel collisions, entanglement, or other injury or stress. Response vessels would be expected to operate in accordance with NTL BOEM-2016-G01 and NMFS (2020a, 2021a, 2025a Attachment 3) (see **Table 1**) to reduce the potential for colliding with or disturbing these animals. The current PBR level for the Florida subspecies of West Indian manatee is 14 (USFWS, 2014). It is not anticipated that groups of manatees would occur in coastal waters of the north-central Gulf of America; therefore, in the event of mortality of individual manatees from a large oil spill would constitute an adverse but insignificant impact to the subspecies.

C.3.4 Non-Endangered Marine Mammals (Protected)

Excluding the three Endangered or Threatened species that have been discussed previously, there are 20 additional species of whales and dolphins (cetaceans) that may be found in the Gulf of America, including dwarf and pygmy sperm whales (*Kogia sima* and *K. breviceps*), four species of beaked whales, and 14 species of delphinid whales (dolphins). All marine mammals are protected species under the MMPA. The most common non-endangered cetaceans in the deepwater environment are small odontocetes such as the pantropical spotted dolphin (*Stenella attenuata*), spinner dolphin (*S. longirostris*), and bottlenose dolphin (*Tursiops truncatus*). A brief summary is presented below, and additional information on these groups is presented by BOEM (2017).

Dwarf and pygmy sperm whales. At sea, it is difficult to differentiate dwarf sperm whales from pygmy sperm whales, and sightings are often grouped together as *Kogia* spp. Both species have a worldwide distribution in temperate to tropical waters. In the Gulf of America, both species occur primarily along the continental shelf edge and in deeper waters off the continental shelf (Mullin et al., 1991; Mullin, 2007; Waring et al., 2016; Hayes et al., 2023). Either species could occur in the project area.

Beaked whales. Four species of beaked whales are known to occur in the Gulf of America: Blainville's beaked whale (*Mesoplodon densirostris*), Sowerby's beaked whale (*M. bidens*), Gervais' beaked whale (*M. europaeus*), and Cuvier's beaked whale (*Ziphius cavirostris*). Stranding records as well as passive acoustic monitoring in the Gulf of America (Hildebrand et al., 2015) suggest that Gervais' beaked whale and Cuvier's beaked whale are the most common species in the region. The Sowerby's beaked whale is considered extralimital, with one documented stranding reported in the Gulf of America by Bonde and O'Shea (1989). There are a number of extralimital strandings and sightings reported beyond the recognized range of Sowerby's beaked whale (e.g., Canary Islands, Mediterranean Sea), including from the eastern Gulf of America (Pitman and Brownell, 2020). Blainville's beaked whales are rare, with only four documented strandings in the northern Gulf of America (Würsig et al., 2000) and three sightings in the Gulf of America (Hayes et al., 2021).

Due to the difficulties of at-sea identification, beaked whales in the Gulf of America are identified either as Cuvier's beaked whales or are grouped into an undifferentiated species complex (*Mesoplodon* spp.). In the northern Gulf of America, they are broadly distributed in water depths >1,000 m (3,281 ft) over lower slope and abyssal landscapes (Davis et al., 2000; Hildebrand et al., 2015). Any of these species could occur in the project area (Hayes et al., 2023).

Delphinids. Fourteen species of delphinids are known from the Gulf of America, including Atlantic spotted dolphin (*Stenella frontalis*), bottlenose dolphin, Clymene dolphin (*Stenella clymene*), false killer whale (*Pseudorca crassidens*), Fraser's dolphin (*Lagenodelphis hosei*), killer whale (*Orcinus orca*), melon-headed whale (*Peponocephala electra*), pantropical spotted dolphin, pygmy killer whale (*Feresa attenuata*), short-finned pilot whale (*Globicephala macrorhynchus*), Risso's dolphin (*Grampus griseus*), rough-toothed dolphin (*Steno bredanensis*), spinner dolphin, and striped dolphin (*Stenella coeruleoalba*). Any of these species could occur in the project area (Hayes et al., 2023).

The bottlenose dolphin is a common inhabitant of the northern Gulf of America, particularly within continental shelf waters. There are two ecotypes of bottlenose dolphins, a coastal form

and an offshore form, which are genetically isolated from each other (Waring et al., 2016). The offshore form of the bottlenose dolphin may occur within the project area. Inshore populations of coastal bottlenose dolphins in the northern Gulf of America are separated into 31 geographically distinct population units, or stocks, for management purposes by NMFS (Hayes et al., 2023).

IPFs that potentially may affect non-endangered marine mammals include drilling rig presence, marine sound, and lights; support vessel and helicopter traffic; and two types of accidents (a small fuel spill and a large oil spill). Effluent discharges are likely to have negligible impacts on marine mammals due to rapid dispersion, the small area of ocean affected, the intermittent nature of the discharges, and the mobility of marine mammals. Compliance with NTL BSEE-2015-G03 is expected to minimize the potential for marine debris-related impacts on marine mammals.

Impacts of Drilling Rig Presence, Marine Sound, and Lights

The presence of the drilling rig presents an attraction to pelagic food sources that may attract cetaceans. Some odontocetes have shown increased feeding activity around lighted platforms at night (Todd et al., 2009). Therefore, prey congregation could pose an attraction to protected species that exposes them to higher levels or longer durations of sound that might otherwise be avoided. Drilling and support vessel presence and lighting are not considered as IPFs for marine mammals (BOEM, 2017).

If the vessel(s) are equipped with a moon pool, a trained crew member or company representative must monitor the moon pool area for marine mammals during operations. If a marine mammal is detected in the moon pool, immediate reporting to NMFS, BOEM, and BSEE is required (NMFS, 2020a, 2025a). Recovery may be required if a protected species is observed in a moon pool before the start of operations; a report must be made to BSEE upon observation and NMFS will determine the recovery need (NMFS, 2025a).

Sound from routine drilling operations has the potential to disturb marine mammals. As discussed in **Section A.1**, sound impacts would be expected at greater distances when DP thrusters are in use than with vessel and drilling sound alone and are dependent on variables relating to sea state conditions, thruster type and usage. Three functional hearing groups are represented in the 20 non-endangered cetaceans found in the Gulf of America. Eighteen of the 20 odontocete species are considered to be in the high-frequency functional hearing group and two species (*Kogia* spp.) are in the very high-frequency functional hearing group (NMFS, 2024). Thruster and drilling sound will affect each group differently depending on the frequency bandwidths produced by operations. Generally, sound produced by drilling rigs on DP is dominated by frequencies below 10 kHz. Thus, drilling rig DP sound sources are out of the audible range for the high frequency group.

For high-frequency cetaceans exposed to a non-impulsive source (like drilling operations), PTS is estimated to occur when the mammal has received a sound exposure level (SEL) of 201 dB re $1 \mu\text{Pa}^2 \text{ s}$ over a 24-hour period (SEL_{24}). Similarly, TTS is estimated to occur when the mammal has received an SEL of 181 dB re $1 \mu\text{Pa}^2 \text{ s}$ over a 24-hour period. Given the non-impulsive nature of drilling sound and the estimate source levels, marine mammals are unlikely to be exposed to noise above the PTS threshold. While sound originating from drilling operations may exceed the TTS threshold, it is expected that marine mammals would move away from the operations area, reducing the duration that individuals are exposed to project-related underwater sound, further

reducing the likelihood of auditory injuries being realized. Therefore, due to the short propagation distance of above-threshold SEL_{24h}, the transient nature of marine mammals and the stationary nature of the proposed activities, it is not expected that any marine mammals will receive exposure levels necessary for the onset of auditory threshold shifts.

NMFS (2024) presents criteria used to determine physiological (i.e., injury) thresholds for marine mammals but the behavioral disturbance thresholds were not updated in this most recent acoustic guidance; these behavioral disturbance thresholds are established and published by NMFS in 70 FR 1871 and summarized in NMFS (2023a). Received SPL of 120 dB re 1 µPa from a non-impulsive, continuous source is considered high enough to elicit a behavioral reaction in some marine mammal species. The 120-dB isopleth may extend tens to hundreds of kilometers from the source depending on the propagation environment. However, in the case of behavioral responses, received levels alone do not indicate a behavioral response and, more importantly, do not equate to biologically important responses (Southall et al., 2016; Ellison et al., 2012).

BOEM (2012a) stated the source level from oil and gas production platforms are low with a frequency range of 50 to 500 Hz. It is expected that marine mammals within or near the project area would be able to detect the presence of the drilling rig and avoid exposure to higher energy sounds, particularly within an open ocean environment.

There are other OCS facilities and activities near the project area, and the region as a whole has a large number of similar sources (HDR [Athens, AL], 2021). Marine mammal species in the northern Gulf of America have been exposed to sound from anthropogenic sources for a long period of time and over large geographic areas and likely do not represent a naïve population with regard to sound (National Research Council, 2003b). Due to the limited scope, timing, and geographic extent of drilling activities, this project would represent a small, temporary contribution to the overall soundscape, and any short-term behavioral impacts are not expected to be biologically significant to marine mammal populations. Drilling rig and support vessel lighting and presence are not identified as IPFs for marine mammals by BOEM (2017).

Impacts of Support Vessel and Helicopter Traffic

Support vessel traffic has the potential to disturb marine mammals, and there is also a risk of vessel collisions. Data concerning the frequency of vessel collisions are presented by BOEM (2012a). To reduce the potential for vessel collisions, BOEM issued NTL 2016-G01, which recommends protected species identification training for vessels operators and that vessels slow down or stop to avoid colliding with protected species. This NTL was reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) replaces compliance with the NTL; a new NTL in response to the 2025 Biological Opinion has not yet been issued. The NTL also requires that operators and crews maintain a vigilant watch for marine mammals and report sightings of any injured or dead protected species. Operators should follow the mitigation measures summarized in Table 4.8-2 of the 2025 PEIS (BOEM, 2025) and those presented in Attachment 3 of the 2025 Biological Opinion (NMFS, 2025a). Vessel operators and crews are required to attempt to maintain a distance of 100 m (328 ft) or greater when toothed whales are sighted and 50 m (164 ft) when small cetaceans are sighted (NMFS, 2020a, 2025a Attachment 3).

Vessel operators and crews are required to attempt to maintain a distance of 100 m (328 ft) or greater when toothed whales are sighted and 50 m (164 ft) when small cetaceans are sighted

(NMFS, 2020a, 2025a Attachment 3). When cetaceans are sighted while a vessel is underway, vessels must attempt to remain parallel to the animal's course and avoid excessive speed or abrupt changes in direction until the cetacean has left the area. Vessel operators are required to reduce vessel speed to 10 knots or less when mother/calf pairs, pods, or large assemblages of cetaceans are observed near an underway vessel, when safety permits. These mitigation measures are only effective during daylight hours, or in sea and weather conditions where cetaceans are sighted. All vessels must, to the maximum extent practicable, attempt to maintain a minimum separation distance of 50 m (164 ft) from all "other aquatic protected species" including sea turtles, with an exception made for those animals that approach the vessel. Vessel speeds must also be reduced to 10 knots or less when mother/calf pairs, pods, or large assemblages (greater than three) of any marine mammal are observed near a vessel. Although vessel strike avoidance measures described in NMFS (2020a, 2025a Attachment 3) are only applicable to ESA-listed species, complying with them may provide additional indirect protection to non-listed species as well.

When aquatic protected species are sighted while a vessel is underway, the vessel should take action as necessary to avoid violating the relevant separation distance (e.g., attempt to remain parallel to the animal's course, avoid excessive speed or abrupt changes in direction until the animal has left the area). If aquatic protected species are sighted within the relevant separation distance, the vessel should reduce speed and shift the engine to neutral, not engaging the engines until animals are clear of the area. This does not apply to any vessel towing gear (e.g., source towed array, site clearance trawling). Use of these measures will minimize the likelihood of vessel collisions as well as reduce the chance for disturbing marine mammals, and therefore no significant impacts are expected.

The current PBR level for several non-endangered cetacean species in the Gulf of America are less than three individuals (e.g., rough-toothed dolphin = undetermined, Clymene dolphin = 2.5, Fraser's dolphin = 1.0, killer whale = 1.5, pygmy and false killer whales = 2.8, dwarf and pygmy sperm whales = 2.5) (Hayes et al., 2022). Mortality of individuals equal to or in excess of their PBR level would constitute a significant impact at a population level on the local (Gulf of America) stocks of these species.

Helicopter traffic has the potential to disturb marine mammals (Würsig et al., 1998) but relatively high-altitude flying is conducted to minimize the potential for disturbances. While flying offshore, helicopters maintain altitudes above 213 m (700 ft) during transit to and from the working area. Maintaining these altitudes during helicopter operations will minimize the potential for disturbing marine mammals, and no significant impacts are expected (BOEM, 2017; NMFS, 2020a, 2025a).

Impacts of a Small Fuel Spill

Potential spill impacts on marine mammals are discussed by BOEM (2017; 2023a,b). Oil impacts on marine mammals in general are discussed by Geraci and St. Aubin (1990). For this EP, there are no unique site-specific issues with respect to spill impacts on these animals.

The probability of a fuel spill is expected to be minimized by Chevron's preventative measures during fuel transfer. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to lessen the potential for impacts on marine mammals. EP Section H provides details on spill response measures. Given the open ocean location of the project area, the limited

duration of a small spill, and response efforts, it is expected that any impacts would be brief and minimal.

A small fuel spill in offshore waters would produce a thin slick on the water surface and introduce the concentrations of petroleum hydrocarbons and their degradation products. Direct physical and physiological effects of exposure to diesel fuel could include skin irritation, inflammation, or necrosis; chemical burns of skin, eyes, and mucous membranes; inhalation of toxic fumes; ingestion of oil directly or via contaminated prey; and stress from the activities and sound of response vessels and aircraft (MMC, 2011). The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time and the effectiveness of spill response measures. A small fuel spill would not be expected to make landfall or reach coastal waters prior to dissipating (**Section A.9.1**). Therefore, due to the limited areal extent and short duration of water quality impacts from a small fuel spill as well as the mobility of marine mammals, no significant impacts would be expected.

Impacts of a Large Oil Spill

Potential spill impacts on marine mammals are discussed by BOEM (2017; 2023a,b). For this EP, there are no unique site-specific issues. Impacts of oil spills on marine mammals can include direct impacts from oil exposure as well as indirect impacts due to response activities and materials (e.g., vessel traffic, marine sound, dispersants) (MMC, 2011). Direct physical and physiological effects can include skin irritation, inflammation, or necrosis; chemical burns of skin, eyes, and mucous membranes; inhalation of toxic fumes; ingestion of oil (and dispersants) directly or via contaminated prey. Complications of the above may lead to dysfunction of immune and reproductive systems (De Guise et al., 2017), physiological stress, declining physical condition, and death. Indirect impacts could include stress from the activities and sound of response vessels and aircraft. Behavioral responses can include displacement of animals from prime habitat (McDonald et al., 2017), disruption of social structure, change in prey availability and foraging distribution or patterns, change in reproductive behavior/productivity, and change in movement patterns or migration (MMC, 2011).

In the event of a large spill, response activities that may impact marine mammals include increased vessel traffic and remediation activities (e.g., use of dispersants, controlled burns, skimmers, boom) (BOEM, 2017). The increased level of vessel and aircraft activity associated with spill response could disturb marine mammals, potentially resulting in behavioral changes. The large number of response vessels could result in vessel collisions, entanglement or other injury, or stress. Response vessels are expected to operate in accordance with NTL BOEM-2016-G01 to reduce the potential for colliding with or disturbing these animals, and therefore no significant impacts are expected.

This NTL was reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) and amendment in April 2021 (NMFS, 2021a) replaces compliance with the NTL; a new NTL has not yet been issued in response to the 2025 Biological Opinion. Operators should follow the mitigation measures summarized in Table 4.8-2 of the 2025 PEIS (BOEM, 2025) and those presented in Attachment 3 of the 2025 Biological Opinion (NMFS, 2025a). The application of dispersants greatly reduces exposure risks to marine mammals as the dispersants would remove oil from the surface thereby reducing the risk of contact and rendering it less likely to adhere to skin, baleen plates, or other body surfaces (BOEM, 2017). Based on the current PBR level for several non-endangered cetacean species in

the Gulf of America that are less than three individuals (e.g., rough-toothed dolphin = undetermined, Clymene dolphin = 2.5, Fraser's dolphin = 1.0, killer whale = 1.5, pygmy and false killer whales = 2.8, dwarf and pygmy sperm whales = 2.5) (Hayes et al., 2022), mortality of individuals equal to or in excess of their PBR level would constitute a significant impact at the population level to the local (Gulf of America) stocks of these species.

C.3.5 Sea Turtles (Endangered/Threatened)

Five species of Endangered or Threatened sea turtles may be found near the project area. Endangered species include the leatherback, Kemp's ridley, and hawksbill turtles. As of 6 May 2016, the entire North Atlantic DPS of the green turtle is listed as Threatened (81 FR 20057). The DPS of loggerhead turtles that occurs in the Gulf of America is listed as Threatened.

Critical habitat has been designated for the loggerhead turtle in the Gulf of America as shown in **Figure 4**. Loggerhead turtles in the Gulf of America are part of the Northwest Atlantic Ocean DPS (76 FR 58868). In July 2014, NMFS and the USFWS designated critical habitat for this DPS (NMFS, 2021b). The USFWS designation (79 FR 39756) includes nesting beaches in Jackson County, Mississippi; Baldwin County, Alabama; and Bay, Gulf, and Franklin Counties in the Florida Panhandle as well as several counties in southwest Florida and the Florida Keys (and other areas along the Atlantic coast). The NMFS designation (79 FR 39856) includes nearshore reproductive habitat within 0.99 miles (1.6 km) seaward of the mean high-water line along these same nesting beaches. NMFS also designated a large area of shelf and oceanic waters, termed *Sargassum* habitat, in the Gulf of America (and Atlantic Ocean) as critical habitat. *Sargassum* is a brown algae (Class Phaeophyceae) that takes on a planktonic, often epipelagic existence after being removed from reefs during rough weather. Rafts of *Sargassum* serve as important foraging and developmental habitat for numerous fishes, and young sea turtles, including loggerhead, green, hawksbill, and Kemp's ridley turtles (Witherington et al., 2012). NMFS designated three other categories of critical habitat; of these, two (migratory habitat and overwintering habitat) are along the Atlantic coast and the third (breeding habitat) is found in the Florida Keys and along the Florida east coast (NMFS, 2021b).

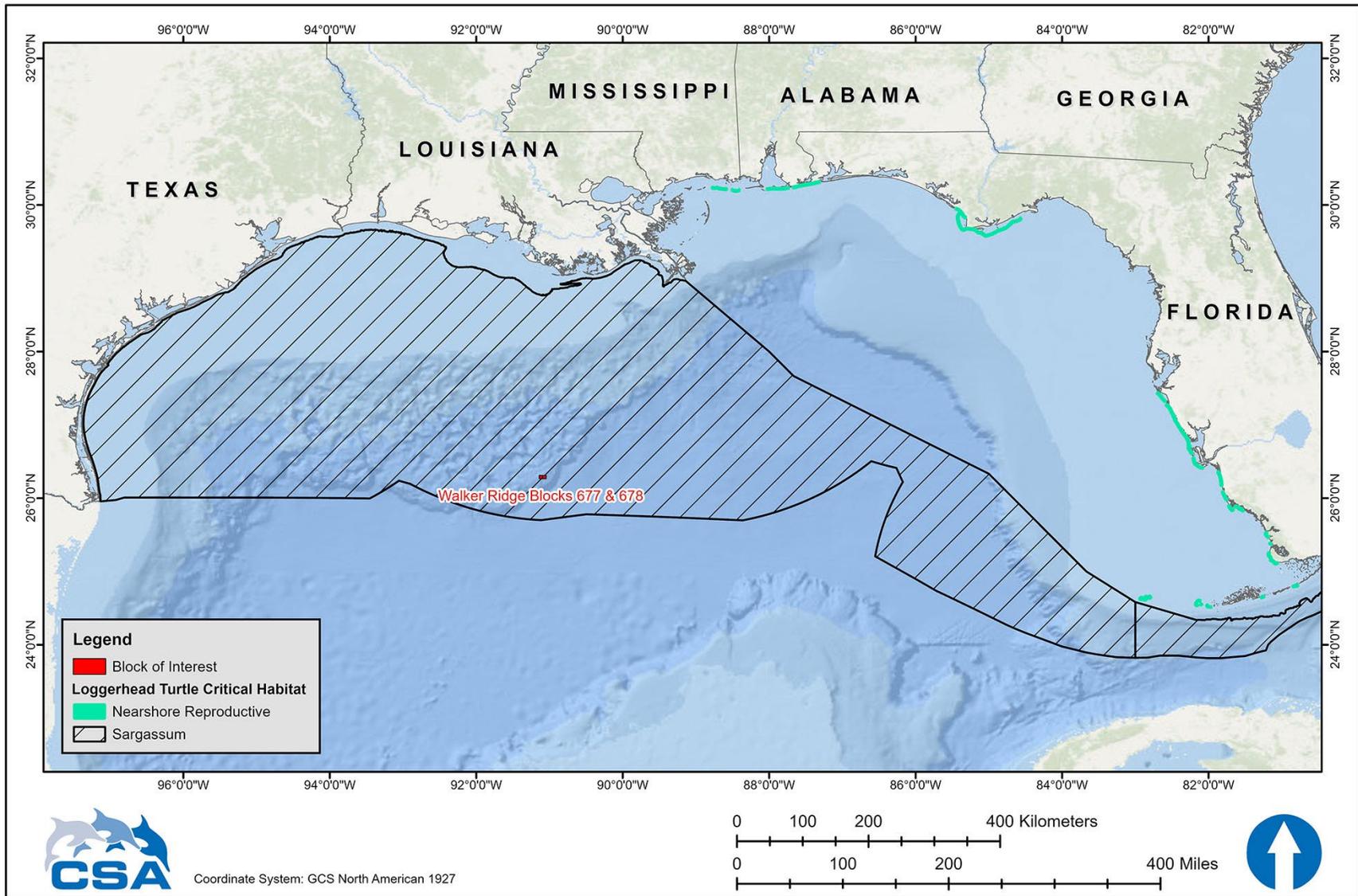


Figure 4. Location of loggerhead turtle designated *Sargassum* critical habitat and nearshore reproductive critical habitat in relation to the project area.

The nearest designated nearshore reproductive critical habitat for loggerhead sea turtles is approximately 303 statute miles (488 km) from the project area. The project area is located within the designated *Sargassum* critical habitat for loggerhead sea turtles (**Figure 4**).

In 2023, NMFS proposed critical habitat for the Northwest Atlantic distinct population segment of green turtles (NMFS, 2025a). Like the designation for the loggerhead turtle, this includes nearshore reproductive habitat and *Sargassum* habitat (NMFS, 2025a). The nearshore reproductive habitat is from mean water to 20 m of water along the shores of parts of Texas, southeastern Alabama, and all of Florida (NMFS, 2025a). The *Sargassum* habitat covers most of the northern Gulf, to the edge of the Exclusive Economic Zone (EEZ) (NMFS, 2025a). Neither critical habitat for the green turtle has been formally designated.

Leatherbacks are the species most likely to be present near the project area, as they are the most pelagic of the sea turtles and feed on populations of gelatinous plankton, such as jellyfish and salps in all water depths. Loggerhead, green, hawksbill, and Kemp's ridley turtles are typically inner-shelf and nearshore species but may be found transiting in oceanic waters during seasonal migrations. Loggerheads and green turtles are more likely to occur or be attracted to offshore structures than the other species. Hatchlings or juveniles of any of the sea turtle species with the exception of leatherbacks may be present in deepwater areas, including the project area, where they may be associated with *Sargassum* rafts and other flotsam. Leatherbacks, while not specifically associated with *Sargassum*, do utilize similar pelagic habitats for foraging where *Sargassum* is routinely found. All five sea turtle species in the Gulf of America are migratory and use different marine habitats according to their life stage. These habitats include high-energy beaches for nesting females and emerging hatchlings and pelagic convergence zones for hatchling and juvenile turtles. As adults, green, hawksbill, and loggerhead turtles forage primarily in shallow, benthic habitats.

Sea turtle nesting in the northern Gulf of America can be summarized by species as follows:

- Loggerhead turtles – Loggerhead turtles nest in significant numbers along the Florida Panhandle (Florida Fish and Wildlife Conservation Commission, nd-a) and, to a lesser extent, from Texas through Alabama (NMFS and USFWS, 2008);
- Green turtles – Green turtles are known to nest along the Florida Panhandle and in southwest Florida, from Tampa Bay south to Ten Thousand Island, and in the Florida Keys and Dry Tortugas (Florida Fish and Wildlife Conservation Commission, nd-b);
- Leatherback turtles – Leatherback turtles infrequently nest on Florida Panhandle beaches (Florida Fish and Wildlife Conservation Commission, nd-c);

- Kemp's ridley turtles – The critically endangered Kemp's ridley turtle nests almost exclusively on a 16-mile (26-km) stretch of coastline near Rancho Nuevo in the Mexican state of Tamaulipas (NMFS et al., 2011). A much smaller population nests in Padre Island National Seashore, Texas, mostly as a result of reintroduction efforts (NMFS et al., 2011). A total of 340 Kemp's ridley turtle nests were counted on Texas beaches in 2024 (Turtle Island Restoration Network, 2024). This is an increase from 2023 and 2022, when a total of 256 Kemp's ridley turtle nests were counted on Texas beaches in 2023 and a total of 284 Kemp's ridley turtle nests were counted during the 2022 nesting season. Padre Island National Seashore along the coast of Willacy, Kenedy, and Kleberg Counties in southern Texas, is the most important nesting location for this species in the United States; and
- Hawksbill turtles – Hawksbill turtles typically do not nest anywhere near the project area, with most nesting in the region located in the Caribbean Sea and on the beaches of the Yucatán Peninsula (USFWS, 2016a).

IPFs that could potentially affect sea turtles include drilling rig presence, marine sound, and lights; support vessel and helicopter traffic; and two types of accidents (a small fuel spill and a large oil spill). Effluent discharges are likely to have negligible impacts on sea turtles due to rapid dispersion, the small area of ocean affected, and the intermittent nature of the discharges.

Though NMFS (2025a) stated marine debris as an IPF, compliance with NTL BSEE 2015-G013 (See **Table 1**) and NMFS (2025a) Attachment 2 will minimize the potential for marine debris-related impacts on sea turtles. NMFS (2025a) estimated a small proportion of individual sea turtles would be adversely affected from exposure to marine debris. Therefore, marine debris is likely to have negligible impacts on sea turtles and is not further discussed in this EIA (See **Table 2**).

Impacts of Drilling Rig Presence, Marine Sound, and Lights

Drilling activities produce a broad array of sounds at frequencies and intensities that may be detected by sea turtles (Samuel et al., 2005, Popper et al., 2014). Potential impacts may include behavioral disruption and temporary or permanent displacement from the area near the sound source. Sea turtles can hear low to mid-frequency sounds and they appear to hear best between 200 and 750 Hz; they do not respond well to sounds above 2,000 Hz, although primary hearing frequency ranges vary per species and life stage (Ketten and Bartol, 2005; Dow Piniak et al., 2012a,b; Martin et al., 2012; Piniak et al., 2016).

The currently accepted hearing and response estimates are derived from fish hearing data rather than from marine mammal hearing data in combination with the limited experimental data available (Popper et al., 2014). NMFS (2023a), which uses threshold estimates from Finneran et al. (2017), recommends SEL_{24h} PTS and TTS thresholds of 220 and 200 dB re 1 $\mu\text{Pa}^2 \text{ s}$, respectively, for non-impulsive sources, and an SPL behavioral threshold of 175 dB re 1 μPa for all sound sources. Based on the assessment conducted in the NMFS Biological Opinion (NMFS, 2020a), as well as the estimated source levels for drilling operations relative to the acoustic thresholds for sea turtles, there is a minimal likelihood of acoustic injury such as PTS in sea turtles, and behavioral responses to sounds produced by activities such as vessel operations are not expected beyond 10 m (33 ft) from the source. Certain sea turtles, especially loggerheads, may be attracted to offshore structures (Lohofener et al., 1990; Gitschlag et al., 1997; Colman et al., 2020) and thus may be more susceptible to impacts from sounds produced during routine drilling activities. Any impacts would likely be short-term behavioral changes such as diving and evasive swimming, disruption of activities, or departure from the area. Because of

the limited scope and short duration of drilling activities, these short-term impacts are not expected to be biologically significant to sea turtle populations.

Artificial lighting can disrupt the nocturnal orientation of sea turtle hatchlings (Tuxbury and Salmon, 2005; Berry et al., 2013; Simões et al., 2017). However, hatchlings may rely less on light cues when they are offshore than when they are emerging on the beach (Salmon and Wyneken, 1990). NMFS (2007) concluded that the effects of lighting from offshore structures on sea turtles are insignificant.

NMFS (2025a) stated sea turtles have the potential to be entangled or entrapped in moon pools, and though many sea turtles could exit the moon pool under their own volition, sublethal effects could occur. If the vessel(s) are equipped with a moon pool, a trained crew member or company representative will monitor the moon pool area for sea turtles during operations. If a sea turtle is detected in the moon pool, it will be immediately reported to agencies including NMFS, BOEM, and BSEE per NMFS (2025a); compliance with ensuing agency guidance is expected. Recovery may be required if a turtle is observed in a moon pool before the start of operations; a report must be made to BSEE upon observation and NMFS will determine recovery need (NMFS, 2025a). Based on the moon pool entrapment cases of sea turtles reported and successful rescues and releases that have occurred, NMFS (2025a) estimated approximately about one sea turtle will be sub-lethally entrapped in moon pools every year over 45 years of proposed action. Therefore, no significant impacts are expected.

Impacts of Support Vessel and Helicopter Traffic

Support vessel traffic has the potential to disturb sea turtles, and there is also a risk of vessel collisions. Data show that vessel traffic is one cause of sea turtle mortality in the Gulf of America (Lutcavage et al., 1997). While adult sea turtles are visible at the surface during the day and in clear weather, they can be difficult to spot from a moving vessel when resting below the water surface, during nighttime, or during periods of inclement weather. To reduce the potential for vessel collisions, BOEM issued NTL BOEM-2016-G01, which addresses 1) protected species identification training; 2) vessel operators and crews' observational vigilance and protected species collision avoidance; and 3) reporting of sightings of any injured or dead protected species. This NTL was reissued in June 2020 to address instances where guidance in the 2020 NMFS Biological Opinion (NMFS, 2020a) and amendment in April 2021 replaces compliance with the NTL; a new NTL has not been issued in response to the 2025 Biological Opinion. Operators should follow the mitigation measures summarized in Table 4.8-2 of the 2025 PEIS (BOEM, 2025) and those presented in Attachment 3 of the 2025 Biological Opinion (NMFS, 2025a). When sea turtles are sighted, vessel operators and crews must, to the maximum extent possible, attempt to maintain a distance of 50 m (164 ft) or greater whenever possible (NMFS, 2021a; 2025a). When sea turtles are sighted while a vessel is underway, the vessel should take action as necessary to avoid violating the relevant separation distance (e.g., attempt to remain parallel to the animal's course, avoid excessive speed or abrupt changes in direction until the animal has left the area). If aquatic protected species are sighted within the relevant separation distance, the vessel should reduce speed and shift the engine to neutral, not engaging the engines until animals are clear of the area. This does not apply to any vessel towing gear (e.g., source towed array and site clearance trawling). Compliance with these mitigation measures will minimize the likelihood of vessel collisions as well as reduce the chance of disturbing sea turtles. Therefore, no significant impacts are expected.

Sound generated from support helicopter traffic has the potential to disturb sea turtles but relatively high-altitude flying is conducted to minimize the potential for disturbances. While flying offshore, helicopters maintain altitudes above 213 m (700 ft) during transit to and from the working area. This altitude is intended to minimize the potential for disturbing sea turtles, and no significant impacts are expected (NMFS, 2007; BOEM, 2012a).

Impacts of a Small Fuel Spill

Potential spill impacts on sea turtles are discussed by NMFS (2020a, 2025a) and BOEM (2017; 2023a,b). For this EP, there are no unique site-specific issues with respect to spill impacts on sea turtles.

The probability of a fuel spill is expected to be minimized by Chevron's preventative measures during fuel transfer. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to minimize potential impacts on sea turtles. EP Section H provides details on spill response measures. Given the open ocean location of the project area, the duration of a small spill would be brief and the potential for impacts to occur would be minimal.

A small fuel spill in offshore waters would produce a thin slick on the water surface and introduce concentrations of petroleum hydrocarbons and their degradation products. Direct physical and physiological effects of exposure to diesel fuel could include skin irritation, inflammation, or necrosis; chemical burns of skin, eyes, and mucous membranes; inhalation of toxic fumes; ingestion of oil directly or via contaminated prey; and stress from the activities and sound of response vessels and aircrafts (NMFS, 2020b, 2025a). The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time of the release and the effectiveness of spill response measures. **Section A.9.1** discusses the likely fate of a small fuel spill and indicates that over 90% would be evaporated or dispersed naturally within 24 hours (NOAA, 2022). The area of the sea surface with diesel fuel on it would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions. Therefore, due to the limited areal extent and short duration of water quality impacts from a small fuel spill, no significant impacts to sea turtles from direct or indirect exposure would be expected.

Loggerhead Critical Habitat – Nesting Beaches. A small fuel spill in the project area would be unlikely to affect sea turtle nesting beaches due to the distance from the nearest shoreline. Loggerhead turtle nesting beaches and nearshore reproductive habitat designated as critical habitat are located in Mississippi, Alabama, and the Florida Panhandle, at least 303 statute miles (488 km) from the project area. As explained in **Section A.9.1**, a small fuel spill would not be expected to make landfall or reach coastal waters prior to natural dispersion and degradation.

Loggerhead Critical Habitat – Sargassum. The project area is located within the designated *Sargassum* critical habitat for the loggerhead turtles (**Figure 4**), and a small fuel spill in the project area would inherently enter this critical habitat. If juvenile sea turtles come into contact with or ingest diesel fuel, impacts could include death, injury, or other sublethal effects. However, effects of a small spill on *Sargassum* critical habitat for loggerhead turtles would be limited to the small area (0.5 to 5 ha [1.2 to 12 ac]) likely to be impacted by a small spill. An impact area of 5 ha (12 ac) would represent a negligible portion of the approximately 40,662,810 ha (100,480,000 ac) designated *Sargassum* critical habitat for loggerhead turtles in the northern Gulf of America. However, if juvenile sea turtles are present in the area impacted, significant impacts on the regional population could occur.

Impacts of a Large Oil Spill

Impacts of oil spills on sea turtles can include direct impacts from oil exposure as well as indirect impacts due to response activities (e.g., vessel traffic, marine sound, dispersant use). Direct physical and physiological effects can include skin irritation, inflammation, or necrosis; chemical burns of skin, eyes, and mucous membranes; inhalation of toxic fumes and smoke (e.g., from in situ burning of oil); ingestion of oil (and dispersants) directly or via contaminated food; and stress from the activities and marine sound of response vessels and aircraft. Complications of the above may lead to dysfunction of immune and reproductive systems, physiological stress, declining physical condition, and death. Behavioral responses can include displacement of animals from prime habitat, disruption of social structure, changing food availability and foraging distribution and/or patterns, changing reproductive behavior/productivity, and changing movement patterns or migration (NOAA, 2010; NMFS, 2020b). In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to minimize the potential for these types of impacts on sea turtles. EP Section H provides further details on spill response measures.

Studies of oil effects on loggerhead turtles in a controlled setting (NOAA, 2010, Lutcavage et al., 1995) suggest that sea turtles show no avoidance behavior when they encounter an oil slick, and any sea turtle in an affected area would be expected to be exposed. Sea turtles' diving behaviors also put them at risk. Sea turtles rapidly inhale a large volume of air before diving and continually resurface over time, which may result in repeated exposure to volatile vapors and oiling (NMFS, 2025a).

Loggerhead Critical Habitat – Nesting Beaches. If spilled oil reaches sea turtle nesting beaches, nesting sea turtles and egg development could be affected (NMFS, 2020a, 2025a). An oiled beach could affect nest site selection or result in no nesting at all (e.g., false crawls). Upon hatching and successfully reaching the water, hatchlings are subject to the same types of oil spill exposure hazards as adults. Hatchlings that contact oil residues while crossing a beach can exhibit a range of effects, from acute toxicity to impaired movement and normal bodily functions (NMFS, 2007).

The 30-day OSRA modeling (**Table 4**) indicates nearshore waters and embayments from Calhoun County, Texas, to Plaquemines Parish, Louisiana could be affected within 30 days (1 to 2% conditional probability).

Loggerhead Critical Habitat – Sargassum. The project area is located within the designated *Sargassum* critical habitat for the loggerhead turtles which includes most of the Western and Central Planning Areas in the Gulf of America and parts of the southern portion of the Eastern Planning Area (**Figure 4**) (NMFS, 2021b). Because of the large area covered by the designated *Sargassum* critical habitat for loggerhead turtles, a large spill could result in a substantial part of the *Sargassum* critical habitat in the northern Gulf of America being oiled. The 2010 *Deepwater Horizon* spill affected approximately one-third of the *Sargassum* habitat in the northern Gulf of America (BOEM, 2014a). It is extremely unlikely that the entire *Sargassum* critical habitat would be affected by a large spill. Because *Sargassum* is a floating, pelagic species, it would only be affected by impacts that occur near the surface.

The effects of oiling on *Sargassum* vary with spill severity, but moderate to heavy oiling that could occur during a large spill could cause complete mortality to floating *Sargassum* and its associated communities (BOEM, 2017). *Sargassum* also has the potential to sink during a large

spill, thus temporarily removing the habitat and possibly being an additional pathway of exposure to the benthic environment (Powers et al., 2013). Lower levels of oiling may cause sub-lethal effects, including a reduction in growth, productivity, and recruitment of organisms associated with the *Sargassum*. The *Sargassum* algae itself could be less impacted by light to moderate oiling than associated organisms because of a waxy outer layer that might help protect it from oiling (BOEM, 2016b). *Sargassum* has a yearly seasonal cycle of growth and a yearly cycle of migration from the Gulf of America to the western Atlantic. A large spill could affect a large portion of the annual crop of the algae; however, because of its ubiquitous distribution and seasonal cycle, recovery of the *Sargassum* community would be expected to occur within one to two years (BOEM, 2017).

Impacts to sea turtles from a large oil spill and associated cleanup activities would depend on spill extent, duration, and season (relative to turtle nesting season); the amount of oil reaching the shore; the importance of specific beaches to sea turtle nesting; and the level of cleanup vessel and beach crew activity required. In the event of oil from a large spill, it is expected that impacts resulting in the injury or death of individual sea turtles would be adverse but not likely significant at the population level. In the event that spilled oil reached nesting beaches during nesting period(s), the level of mortality (and impact) would increase.

C.3.6 Piping Plover (Threatened)

The Piping Plover is a migratory shorebird that overwinters along the southeastern U.S. and Gulf of America coasts. This Threatened species experienced declines in population as a result of hunting, habitat loss and modification, predation, and disease (USFWS, 2003). However, as a result of intensive conservation and management, populations of Piping Plover appear to have been increasing since 1991 throughout its range (BirdLife International, 2020). Critical overwintering habitat has been designated, including beaches in Texas, Louisiana, Mississippi, Alabama, and Florida (**Figure 2**). Piping Plovers inhabit coastal sandy beaches and mudflats, feeding by probing for invertebrates at or just below the surface. They use beaches adjacent to foraging areas for roosting and preening.

A large oil spill is the only IPF that potentially may affect Piping Plovers. There are no IPFs associated with routine project activities that could affect these birds. A small fuel spill in the project area would be unlikely to affect Piping Plovers because a small fuel spill would not be expected to make landfall or reach coastal waters prior to dissipating (see explanation in **Section A.9.1**). Sound from helicopters would be unlikely to significantly affect Piping Plover populations, because it is assumed that helicopters will maintain an altitude of 305 m (1,000 ft) over unpopulated areas or across coastlines.

Impacts of a Large Oil Spill

The project area is approximately 185 statute miles (298 km) from the nearest shorelines designated as critical habitat for the Piping Plover (**Figure 3**). The 30-day OSRA modeling (**Table 4**) indicates nearshore waters and embayments from Calhoun County, Texas, to Plaquemines Parish, Louisiana could be affected within 30 days (1 to 2% conditional probability), areas which include Piping Plover critical habitat.

Plovers could physically oil themselves while foraging on oiled shores or secondarily contaminate themselves through ingestion of oiled intertidal sediments and prey (BOEM, 2017). Piping Plovers congregate and feed along tidally-exposed banks and shorelines, following the

tidal boundary and foraging at the water's edge. It is possible that some deaths of Piping Plovers could occur, especially if spills occur during winter months when plovers are most common along the coastal Gulf or if spills contacted critical habitat. Impacts could also occur from vehicular traffic on beaches and other activities associated with spill cleanup. Extensive resources will be available to protect and rehabilitate wildlife in the event of a spill reaching the shoreline, as detailed in the ROSRP.

However, a large spill that contacts shorelines would not necessarily substantially impact Piping Plovers. In the aftermath of the *Deepwater Horizon* incident, Gibson et al. (2017) completed thorough surveys of coastal Piping Plover habitat in coastal Louisiana, Mississippi, and Alabama and found that only 0.89% of all observed Piping Plovers were visibly oiled, leaving the authors to conclude that the *Deepwater Horizon* incident did not substantially affect Piping Plover populations.

C.3.7 Whooping Crane (Endangered)

The Whooping Crane is a large omnivorous wading bird listed as an Endangered species. Three wild populations live in North America (National Wildlife Federation, 2016). One population overwinters along the Texas coast at Aransas NWR and summers at Wood Buffalo National Park in Canada. This population represents the majority of the world's population of free-ranging Whooping Cranes, reaching an estimated population of 557 in and around Aransas NWR during the 2024-2025 winter (USFWS, 2025b), a slight decrease from an estimated 536 individuals counted in the 2022 to 2023 winter survey. Whooping Cranes breed, migrate, winter, and forage in a variety of habitats, including coastal marshes and estuaries, inland marshes, lakes, ponds, wet meadows and rivers, and agricultural fields (USFWS, 2007). About 9,000 ha (22,240 ac) of salt flats on Aransas NWR and adjacent islands comprise the principal wintering grounds of the Whooping Crane. Aransas NWR is designated as critical habitat for the species.

A large oil spill is the only IPF that potentially may affect Whooping Cranes. A small fuel spill in the project area would also be unlikely to affect Whooping Cranes, due to the distance of the project area from Aransas NWR. As explained in **Section A.9.1**, a small fuel spill would not be expected to make landfall or reach coastal waters prior to natural dispersion and degradation.

Impacts of a Large Oil Spill

A large oil spill is unlikely to affect Whooping Cranes as the project area is approximately 356 statute miles (573 km) from the Aransas NWR, which is the nearest designated critical habitat. The 30-day OSRA modeling (**Table 4**) predicts a 1% chance of oil contacting Whooping Crane critical habitat within 30 days of a spill.

In the event of oil exposure, Whooping Cranes could physically oil themselves while foraging in oiled areas or secondarily contaminate themselves through ingestion of contaminated shellfish, frogs, and fishes. It is possible that some Whooping Crane deaths could occur, especially if a spill occurred during winter months when Whooping Cranes are most common along the Texas coast and if the spill contacts their critical habitat in Aransas NWR. Impacts could also occur from vehicular traffic on beaches and other activities associated with spill cleanup. In the event of a spill, Chevron would work with the applicable state and federal agencies to prevent impacts on Whooping Cranes. Extensive resources will be available to protect and rehabilitate wildlife in the event of a spill reaching the shoreline, as detailed in the ROSRP.

C.3.8 Black-capped Petrel (Endangered)

The Black-capped Petrel is a pelagic seabird that nests solely on Hispaniola that was listed as Endangered under the ESA in 2024. The species travels long distances to forage on fish, squid, crustaceans, and *Sargassum* (Simons et al., 2013) and have occasionally been sighted in the northern Gulf of America. While the Gulf of America is not their primary foraging grounds, the most recent species status review (USFWS, 2023) reported 11 sightings in the Gulf of America from 2017 to 2018 during surveys as part of the Gulf of Mexico Marine Assessment Program for Protected Species. Overall, the population of Black-capped Petrels is declining, largely due to deforestation and urbanization on Hispaniola. Exact population numbers are unknown due to the difficulty in obtaining accurate counts and their nocturnal nature, but BirdLife International (2018) estimated a total of 1,000 to 2,000 mature individuals and an overall population of 2,000 to 4,000 individuals.

IPFs that potentially may affect the Black-capped Petrel include drilling rig presence, marine sound, and lights, support vessel and helicopter traffic; and two types of accidents (a small fuel spill and a large oil spill). Effluent discharges permitted under the NPDES are likely to have negligible impacts on the birds due to rapid dispersion, the small area of ocean affected, the intermittent nature of the discharges, and the mobility of these animals. Compliance with NTL BSEE-2015-G03 is expected to minimize the potential for marine debris-related impacts. The IPFs with potential impacts listed in **Table 2** are discussed below.

Impacts of Drilling Rig Presence, Marine Sound, and Lights

Marine birds that frequent offshore oil and gas operations may be exposed to contaminants including air pollutants and routine discharges, but significant impacts are unlikely due to rapid dispersion. Birds migrating over water have been known to collide with offshore structures, resulting in injury and/or death (Wiese et al., 2001; Russell, 2005). Black-capped Petrels may be attracted to lights on the drilling rig, which could increase the risk of a collision.

Mortality of migrant birds at tall towers and other land-based structures has been reviewed extensively, and the mechanisms involved in offshore vessel collisions appear to be similar. In some cases, birds simply do not see a part of the structure until it is too late to avoid it. In other cases, navigation may be disrupted by marine sound (Russell, 2005). On the other hand, offshore structures are suitable stopover perches for most species (Russell, 2005). Due to the limited scope and short duration of drilling activities described in this EP and the low density of Black-capped Petrels in the Gulf of America, no significant impacts are expected.

Impacts of Support Vessel and Helicopter Traffic

Support vessels and helicopters are unlikely to significantly disturb Black-capped Petrels in open, offshore waters. Schwemmer et al. (2011) showed that several marine bird species showed behavioral responses and altered distribution patterns in response to ship traffic, which could potentially cause loss of foraging time and resting habitat. However, it is likely that individuals would experience, at most, only short-term behavioral disruption, and the impact would not be significant on Black-capped Petrels.

Impacts of a Small Fuel Spill

Potential spill impacts on marine birds in general are discussed by BOEM (2017). For this EP, there are no unique site-specific issues with respect to spill impacts on Black-capped Petrels.

The probability of a fuel spill is expected to be minimized by Chevron's preventative measures during routine operations, including fuel transfer procedures. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to reduce the potential for impacts on Black-capped Petrels. EP Section H provides details on spill response measures. Given the open ocean location of the project area and the expected short duration of a small fuel spill, the potential exposure period for Black-capped Petrels would be brief.

A small fuel spill in offshore waters would produce a slick on the water surface and increase the concentrations of petroleum hydrocarbons and their degradation products. The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time and the effectiveness of spill response measures. **Section A.9.1** discusses the likely fate of a small fuel spill and indicates that over 90% would be evaporated or dispersed naturally within 24 hours (NOAA, 2022). The area of the sea surface with diesel fuel on it would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions.

Black-capped Petrels exposed to fuel on the sea surface could experience direct physical and physiological effects including skin irritation; chemical burns of skin, eyes, and mucous membranes; and inhalation of VOCs. Due to the limited areal extent and short duration of water quality impacts from a small fuel spill, secondary impacts due to ingestion of oil via contaminated prey or reductions in prey abundance are unlikely. Due to the low densities of Black-capped Petrels, the small area affected, and the brief duration of the surface slick, minimal if any impacts would be expected.

Impacts of a Large Oil Spill

Potential spill impacts on marine and pelagic birds in general are discussed by BOEM (2017). For this EP, there are no unique site-specific issues with respect to spill impacts on Black-capped Petrels.

Black-capped Petrels could be exposed to oil from a spill at the project area; the number of individuals that could be affected in open, offshore waters would depend on the extent and persistence of the oil slick and the number of Black-capped Petrels in the area.

Following the *Deepwater Horizon* incident in 2010, no Black-capped Petrels were reported as oiled or recovered dead (USFWS, 2023b), but decomposition would likely have made positive identification difficult (Haney et al., 2014). Exposure of marine birds to oil can result in adverse health with severity, depending on the level of oiling. Effects can range from plumage damage and loss of buoyancy from external oiling to more severe effects, such as organ damage, immune suppression, endocrine imbalance, reduced aerobic capacity, and death as a result of oil inhalation or ingestion (NOAA, 2016). Other indirect impacts would also likely occur after a large oil spill, such as a reduction in suitable foraging habitat and the decline in population of prey species (USFWS, 2023b).

Overall, a large oil spill could cause significant impacts on Black-capped Petrel populations if there were numerous individuals in the area of the spill. However, due to the low number of individuals thought to frequent the northern Gulf of America, significant impacts on this species from a large spill are considered unlikely.

C.3.9 Rufa Red Knot (Threatened)

The Rufa Red Knot is a small to medium-sized migratory shorebird that transits each year between breeding grounds in Canada to wintering grounds in the southeast U.S., Caribbean, and along the Gulf of America coast (USFWS, 2020). Listed as Threatened under the ESA in 2015, their primary habitat during the winter along the Gulf of America is in the Laguna Madre estuary system in Mexico and Texas.

The primary threats that are faced by Rufa Red Knot include habitat loss, reduced food availability, and alterations of their migratory timing and patterns due to climate and weather conditions (USFWS, 2020). Precise population numbers are difficult to assess, but USFWS estimated in 2023 that the global population was approximately 42,000 individuals (The Wildlife Society, 2023). Critical habitat was proposed by USFWS in 2023 which includes numerous areas along the U.S. Gulf of America coastline.

IPFs that potentially may affect the Rufa Red Knots include support vessel and helicopter traffic; and two types of accidents (a small fuel spill and a large oil spill). Vessel presence, marine sound, and lights, and effluent discharges are not expected to have a significant impact because this species typically is not found in offshore waters and instead is more coastal in nature. The IPFs with potential impacts listed in **Table 2** are discussed below.

Impacts of Support Vessel and Helicopter Traffic

Support vessels and helicopters are unlikely to significantly disturb Rufa Red Knots in offshore waters where they are not common or in nearshore industrial areas near the shorebase. Schwemmer et al. (2011) showed that several marine bird species showed behavioral responses and altered distribution patterns in response to ship traffic, which could potentially cause loss of foraging time and resting habitat. However, it is likely that individuals would experience, at most, only short-term behavioral disruption, and the impact would not be significant.

Impacts of a Small Fuel Spill

Potential spill impacts on coastal birds in general are discussed by BOEM (2017). For this EP, there are no unique site-specific issues with respect to spill impacts on Rufa Red Knots.

The probability of a fuel spill is expected to be minimized by Chevron's preventative measures during routine operations, including fuel transfer procedures. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to reduce the potential for impacts on Black-capped Petrels. EP Section H provides details on spill response measures. Given Rufa Red Knots are mostly found in coastal areas and the expected short duration of a small fuel spill, the potential exposure period for Rufa Red Knots would be brief.

A small fuel spill in coastal waters would produce a slick on the water surface and increase the concentrations of petroleum hydrocarbons and their degradation products. The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time and the effectiveness of spill response measures. **Section A.9.1** discusses the likely fate of a small fuel spill and indicates that over 90% would be evaporated or dispersed naturally within 24 hours (NOAA, 2022). The area of the sea surface with diesel fuel on it would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions.

Rufa Red Knots exposed to fuel on the sea surface could experience direct physical and physiological effects including skin irritation; chemical burns of skin, eyes, and mucous membranes; and inhalation of VOCs. Due to the limited areal extent and short duration of water quality impacts from a small fuel spill, secondary impacts due to ingestion of oil via contaminated prey or reductions in prey abundance are unlikely. It is not expected that a small fuel spill would substantially affect Rufa Red Knot populations.

Impacts of a Large Oil Spill

Potential spill impacts on coastal birds in general are discussed by BOEM (2017). For this EP, there are no unique site-specific issues with respect to spill impacts on Rufa Red Knots.

Rufa Red Knots could be exposed to oil from a spill at the project area that travels into coastal area; the number of individuals that could be affected would depend on the extent and persistence of the oil slick and the number of Rufa Red Knots in the area, which is largely seasonally based.

Following the *Deepwater Horizon* incident in 2010, only a single Rufa Red Knot was reported as oiled (USFWS, 2020), but decomposition would likely have made positive identification difficult (Haney et al., 2014). Exposure of marine and coastal birds to oil can result in adverse health with severity, depending on the level of oiling. Effects can range from plumage damage and loss of buoyancy from external oiling to more severe effects, such as organ damage, immune suppression, endocrine imbalance, reduced aerobic capacity, and death as a result of oil inhalation or ingestion (NOAA, 2018a). Other indirect impacts would also likely occur after a large oil spill, such as a reduction in suitable foraging habitat and the decline in population of prey species (USFWS, 2023b).

Overall, a large oil spill could have significant impacts on Rufa Red Knot populations if there were numerous individuals in the area of the spill or in coastal areas that became oiled.

C.3.10 Oceanic Whitetip Shark (Threatened)

The oceanic whitetip shark was listed as Threatened under the ESA on 30 January 2018 (effective 30 March 2018) by NMFS (83 FR 4153). Oceanic whitetip sharks are found worldwide in offshore waters between approximately 30° N and 35° S latitude, and historically were one of the most widespread and abundant species of shark (Rigby et al., 2019). However, based on reported oceanic whitetip shark catches in several major longline fisheries, the global population appears to have suffered substantial declines (Camhi et al., 2008) and the species is now only occasionally reported in the Gulf of America (Rigby et al., 2019).

Oceanic whitetip shark management is complicated due to it being globally distributed, highly migratory, and overlapping in areas of high fishing pressure; thus, leaving assessment of population trends on fishery dependent catch-and-effort data rather than from scientific surveys (Young and Carlson, 2020). A comparison of historical shark catch rates in the Gulf of America by Baum and Myers (2004) noted that most recent papers dismissed the oceanic whitetip shark as rare or absent in the Gulf of America. NMFS (2025b) noted that there has been an 88% decline in abundance of the species in the Gulf of America since the mid-1990s due to commercial fishing pressure.

IPFs that could affect the oceanic whitetip shark include vessel presence, sound, and lights, and a large oil spill. Though NMFS (2025a) lists a small diesel fuel spill as an IPF, in the project area, a small diesel fuel spill would be unlikely to affect oceanic whitetip sharks due to rapid natural dispersion of diesel fuel and the low density of oceanic whitetip sharks potentially present in the project area. Therefore, no significant impacts are expected from small diesel fuel spills and they are not further discussed (Table 2).

Impacts of Drilling Rig Presence, Marine Sound, and Lights

Offshore drilling activities produce a broad array of sound at frequencies and intensities that may be detected by sharks including the Threatened oceanic whitetip shark. The general frequency range for elasmobranch hearing is approximately between 20 Hz and 1 kHz (Ladich and Fay, 2013) which includes sensitivities for individual species to SPLs between approximately 134 to 148 dB re 1 μ Pa in nurse sharks (*Ginglymostoma cirratum*) at frequencies between 100 and 1,000 Hz (Casper and Mann, 2006). These frequencies overlap with sound associated with drilling activities (SPL source levels of 195 dB re 1 μ Pa m with peak frequencies at 40 to 100 Hz) (Hildebrand, 2005). Impacts from offshore drilling activities (i.e., non-impulsive sound) could include masking or behavioral changes (Popper et al., 2014). The scientific understanding of shark sound production and behavior is in its infancy. For example a smooth-hound shark (*Mustelus lentikulatus*) was recently found to produce sounds, the first evidence of shark sound production in the scientific literature (Nieder et al., 2025).

This is consistent with the results of the assessment in the NMFS Biological Opinion (NMFS, 2020a, 2025a) which indicate that oceanic whitetip sharks may be able to detect drillship and vessel sound but are not likely to be adversely affected by it. Therefore, because the propagation distances of SPL sufficient to elicit behavioral disturbances from the drilling rig would be limited in geographic scope, no population level impacts on oceanic whitetip sharks are expected.

Impacts of a Large Oil Spill

Information regarding the direct effects of oil on elasmobranchs, including the oceanic whitetip shark are largely unknown. However, in the event of a large oil spill, oceanic whitetip sharks could be affected by direct ingestion, ingestion of oiled prey, or the absorption of dissolved petroleum products through the gills. Because oceanic whitetip sharks may be found in surface waters, they could be more likely to be impacted by floating oil than other species which only reside at depth.

It is possible that a large oil spill could affect individual oceanic whitetip sharks and result in injuries or deaths. However, due to the low density of oceanic whitetip sharks thought to exist in the Gulf of America, it is unlikely that a large spill would result in population level effects.

C.3.11 Giant Manta Ray (Threatened)

The giant manta ray is a Threatened elasmobranch species that is a slow-growing, migratory, planktivorous species that inhabits tropical, subtropical, and temperate bodies of water worldwide (NOAA, 2018). The giant manta ray became listed as Threatened under the ESA in 2018.

Commercial fishing is the primary threat to giant manta rays (NOAA, 2023b). The species is targeted and caught as bycatch in several global fisheries throughout its range. Although

protected in U.S. waters, protection of populations is difficult as they are highly migratory with sparsely distributed and fragmented populations throughout the world. Some estimated regional population sizes are small (between 100 to 1,500 individuals) (Marshall et al., 2018; NOAA, 2018). Stewart et al. (2018) recently reported that the Flower Garden Banks serves as nursery habitat for aggregations of juvenile manta rays. Approximately 100 unique individuals have been positively identified at the Flower Garden Banks based on unique underbelly coloration (Belter et al., 2020). Genetic and photographic evidence in the Flower Garden Banks over 25 years of monitoring showed that 95% of identified giant manta ray male individuals were smaller than mature size (Stewart et al., 2018).

IPFs that may impact giant manta rays include drilling rig presence, marine sound, and lights, and a large oil spill. Though NMFS (2025a) lists a small diesel fuel spill as an IPF, in the project area a small diesel fuel spill would be unlikely to affect giant manta rays due to rapid natural dispersion of diesel fuel and the low density of giant manta rays potentially present in the project area. Therefore, no significant impacts are expected from small diesel fuel spills and they are not further discussed (See **Table 2**).

Impacts of Drilling Rig Presence, Marine Sound, and Lights

Offshore drilling activities produce a broad array of sound at frequencies and intensities that may be detected by elasmobranchs including the Threatened giant manta ray. The general frequency range for elasmobranch hearing is approximately between 20 Hz and 1 kHz (Ladich and Fay, 2013). Studies indicate sensitivities to SPLs between approximately 139 and 153 dB re 1 μ Pa in yellow stingray (*Urobatis jamaicensis*) and SPLs between approximately 120 and 145 dB re 1 μ Pa in little skate (*Erinacea raja*) at frequencies from 100 to 1,000 Hz (Casper et al., 2003; Casper and Mann, 2006). These frequencies overlap with sound associated with drilling activities (SPL source levels of 195 dB re 1 μ Pa m with peak frequencies at 40 to 100 Hz) (Hildebrand, 2005). Impacts from offshore drilling activities (i.e., non-impulsive sound) could include masking or behavioral changes (Popper et al., 2014).

The scientific understanding of skate and ray (Batoidea) is in its infancy. Only recently has evidence been presented for active sound production in skates and rays, and only in three species (Almagro and Barría, 2024; Barroil et al., 2024; Fetterplace et al., 2022). Potential behavioral changes subsequent to offshore drilling activities are consistent with the results of the assessment in the NMFS Biological Opinion (NMFS, 2020a, 2025a) which indicate that giant manta rays may be able to detect drillship and vessel sound but are not likely to be adversely affected by it due to their lack of a swim bladder. Therefore, because the propagation distances of SPL sufficient to elicit behavioral disturbances from the drilling rig would be limited in geographic scope, no population-level impacts on giant manta rays are expected.

Impacts of a Large Oil Spill

A large oil spill in the project area could reach coral reefs at the Flower Garden Banks which is the only known location of giant manta ray aggregations in the Gulf of America, although individuals may occur anywhere in the Gulf. In the unlikely event of a large oil spill impacting areas with giant manta rays, individual rays could be affected by direct ingestion of oil which could cover their gill filaments or gill rakers, or by ingestion of oiled plankton. Giant manta rays typically feed in shallow waters of <10 m (33 ft) depth (NOAA, 2018). Because of this shallow water feeding behavior, giant manta rays would be more likely to be impacted by floating oil than other species which most typically reside at depth.

In the event of a large oil spill, due to the distance between the project area and the Flower Garden Banks (approximately 123 statute miles [199 km]), it is unlikely that oil would impact the Threatened giant manta ray nursery habitat. It is possible that a large oil spill could contact individual giant manta rays, but due to the low density of individuals thought to occur in the Gulf of America, population-level impacts are not expected.

C.3.12 Gulf Sturgeon (Threatened)

The Gulf sturgeon is a Threatened fish species that inhabits major rivers and inner shelf waters from the Mississippi River to the Suwannee River, Florida (Barkuloo, 1988; Wakeford, 2001). Sturgeon are anadromous fish that migrate from the ocean upstream into coastal rivers to spawn in freshwater.

The historic range of the species extended from the Mississippi River to Charlotte Harbor, Florida (Wakeford, 2001). This range has contracted to encompass major rivers and inner shelf waters from the Mississippi River to the Suwannee River, Florida. Populations have been depleted or even extirpated throughout this range by fishing, shoreline development, dam construction, water quality changes, and other factors (Barkuloo, 1988; Wakeford, 2001). These declines prompted the listing of the Gulf sturgeon as a Threatened species in 1991. The best-known populations occur in the Apalachicola and Suwannee Rivers in Florida (Carr, 1996; Sulak and Clugston, 1998), the Choctawhatchee River in Alabama (Fox et al., 2000), and the Pearl River in Mississippi/Louisiana (Morrow et al., 1998). Rudd et al. (2014) reconfirmed the spatial distribution and movement patterns of Gulf sturgeon by surgically implanting acoustic telemetry tags. Critical habitat in the Gulf extends from Lake Borgne, Louisiana (St. Bernard Parish), to Suwannee Sound, Florida (Levy County) (NMFS, 2022) (**Figure 3**). A species description is presented by BOEM (2012a) and in the recovery plan for this species (USFWS et al., 1995).

A large oil spill is the only IPF that potentially may affect Gulf sturgeon. There are no IPFs associated with routine project activities that could affect these fish. A small fuel spill in the project area would be unlikely to affect Gulf sturgeon because a small fuel spill would not be expected to make landfall or reach coastal waters prior to dissipating (see explanation in **Section A.9.1**). Vessel collisions to Gulf sturgeon would be unlikely based on the location of the support vessel base and NMFS (2025a) estimated one non-lethal Gulf sturgeon collision in the 45 years of proposed action.

Impacts of a Large Oil Spill

Potential spill impacts on Gulf sturgeon are discussed by NMFS (2007) and BOEM (2012a; 2017). For this EP, there are no unique site-specific issues with respect to this species.

The project area is approximately 259 statute miles (416 km) from the nearest Gulf sturgeon critical habitat. The 30-day OSRA modeling (**Table 4**) predicts that a spill in the project area has a <0.5% conditional probability of contacting any coastal areas containing Gulf sturgeon critical habitat within 30 days of a spill.

In the event of oil reaching Gulf sturgeon habitat, the fish could be affected by direct ingestion, ingestion of oiled prey, or the absorption of dissolved petroleum products through the gills. Oil could also potentially harm the functional units of the mechanosensory lateral line system, a nearfield flow-sensing system common across fishes. Based on the life history of this species,

subadult and adult Gulf sturgeon would be most vulnerable to an estuarine or marine oil spill, and would be vulnerable from approximately October through April when this species is foraging in estuarine and shallow marine habitats (NMFS, 2025a).

C.3.13 Nassau Grouper (Threatened)

The Nassau grouper (*Epinephelus striatus*) is a Threatened, long-lived reef fish typically associated with hard bottom structures such as natural and artificial reefs, rocks, and underwater ledges (NOAA, 2024a). Once one of the most common reef fish species in the coastal waters of the United States and Caribbean (Sadovy, 1997), the Nassau grouper been subject to overfishing and is considered extinct in much of its historical range. Observations of current spawning aggregations compared with historical landings data suggest that the Nassau grouper population is substantially smaller than its historical size (NOAA, 2024a). The Nassau grouper was listed as Threatened under the ESA in 2016 (81 FR 42268).

Nassau groupers are found mainly in the shallow tropical and subtropical waters of eastern Florida, the Florida Keys, Bermuda, the Yucatán Peninsula, and the Caribbean, including the U.S. Virgin Islands and Puerto Rico within water depths up to 130 m (426 ft) (NOAA, 2024a). There has been one confirmed sighting of Nassau grouper from the Flower Garden Banks in the Gulf of America at a water depth of 36 m (118 ft) (Foley et al., 2007). Three additional unconfirmed reports (i.e. lacking photographic evidence) of Nassau grouper have also been documented from mooring buoys and the coral cap region of the West Flower Garden flats (Foley et al., 2007).

There are no IPFs associated with routine project activities that could affect Nassau grouper. A small fuel spill would not affect Nassau grouper because the fuel would float and dissipate on the sea surface and would not be expected to reach the Flower Garden Banks or Florida Keys. A large hydrocarbon spill is the only relevant IPF, although a large oil spill would not be expected to reach Nassau grouper habitat.

Impacts of a Large Oil Spill

A spill would be unlikely to contact the Flower Garden Banks based on the distance between the project area and the Flower Garden Banks (approximately 123 statute miles [319980 km]), and the difference in water depth between the project area (2,145 m [7,036 ft]) and the Banks (approximately 17 to 145 m [56 to 476 ft]). While on the surface, hydrocarbons would not be expected to contact subsurface fish.

In the unlikely event that hydrocarbons contact Nassau grouper habitat, hydrocarbon droplets or contaminated sediment particles could come into contact with Nassau grouper present on the reefs. Individual fish could be affected by direct ingestion of hydrocarbons which could cover their gill filaments or gill rakers, result in ingestion of oiled prey, or the absorption of dissolved petroleum products through the gills. Oil could also potentially harm the functional units of the mechanosensory lateral line system, a nearfield flow-sensing system common across fishes. Harm to the lateral line system could lead to behavioral changes and challenges in acquiring prey.

C.3.14 Smalltooth Sawfish (Endangered)

The smalltooth sawfish, named due to their flat, saw-like rostrum, is an elasmobranch ray which lives in shallow coastal tropical seas and estuaries where they feed on fish and invertebrates such as shrimp and crabs (NOAA Fisheries, 2023b). Once found along most of the northern Gulf of America coast from Texas to Florida, their current range in Gulf of America is restricted to areas primarily in southwest Florida (Brame et al., 2019) where several areas of critical habitat have been designated (**Figure 3**). A species description is presented in the recovery plan for this species (NMFS, 2009b).

Listed as Endangered under the ESA in 2003, population numbers have drastically declined over the past century primarily due to accidental bycatch (Seitz and Poulakis, 2006). Although there are no reliable estimates for smalltooth sawfish population numbers throughout its range (NMFS, 2018), data from 1989 to 2004 indicated a slight increasing trend in population numbers in Everglades National Park during that time period (Carlson et al., 2007). More recent data resulted in a similar conclusion, with indications that populations were stable or slightly increasing in southwest Florida (Carlson and Osborne, 2012).

There are no IPFs associated with routine project activities that could affect smalltooth sawfish. A small fuel spill would not affect smalltooth sawfish because the fuel would float and dissipate on the sea surface and would not be expected to reach smalltooth sawfish habitat in coastal areas (see **Section A.9.1**). A large oil spill was not considered an IPF for smalltooth sawfish in the 2025 NMFS Biological Opinion (NMFS, 2025a), but is briefly considered below.

Impacts of a Large Oil Spill

The project area is approximately 544 miles (875 km) from the nearest smalltooth sawfish critical habitat in Charlotte County, Florida. Based on the 30-day OSRA modeling, a spill in the project area has a <0.5% conditional probability of contacting any coastal areas containing smalltooth sawfish critical habitat within 30 days of a spill.

Information regarding the direct effects of oil on elasmobranchs, including the smalltooth sawfish are largely unknown. A recent study by Cave and Kajiura (2018) reported that when exposed to crude oil, the Atlantic stingray (*Hypanus sabinus*) experienced impaired olfactory function which could lead to decreased fitness. In the event of oil reaching smalltooth sawfish habitats, the smalltooth sawfish could be affected by direct ingestion, ingestion of oiled prey, or the absorption of dissolved petroleum products through the gills as well as impaired olfactory function. Oil could also potentially harm the functional units of the mechanosensory lateral line system, a nearfield flow-sensing system common across fishes, including elasmobranchs. Based on the shallow, coastal habitats preferred by smalltooth sawfish, individuals in areas subject to coastal oiling could be more likely to be impacted than other species that reside at depth.

C.3.15 Beach Mice (Endangered)

Four subspecies of Endangered beach mouse occur on the barrier islands of Alabama and the Florida Panhandle: the Alabama (*Peromyscus polionotus ammobates*), Choctawhatchee (*P. p. allophrys*), Perdido Key (*P. p. trissyllepsis*), and St. Andrew beach mouse (*P. p. peninsularis*). Critical habitat has been designated for all four subspecies and is shown combined in **Figure 3**. One additional subspecies of *Peromyscus* beach mouse inhabiting dunes on the western Florida Panhandle, the Santa Rosa beach mouse (*P. p. leucocephalus*), is not

listed under the ESA. A large oil spill is the only IPF that potentially may affect beach mice. There are no IPFs associated with routine project activities that could affect these animals due to the distance from shore and the lack of any onshore support activities near their habitat. A small fuel spill in the project area would not affect beach mice because a small fuel spill would not be expected to reach beach mice habitat prior to dissipating (see **Section A.9.1**).

Impacts of a Large Oil Spill

Potential spill impacts on Endangered beach mice are discussed by BOEM (2017; 2023a,b). For this EP, there are no unique site-specific issues with respect to these species that were not analyzed in these documents.

Beach mouse critical habitat in Baldwin County, Alabama, is approximately 326 statute miles (525 km) from the project area. The 30-day OSRA modeling (**Table 4**) predicts that a spill in the project area has a <0.5% conditional probability of contacting any coastal areas containing beach mouse critical habitat within 30 days of a spill.

In the event of oil contacting these beaches, beach mice could experience several types of direct and indirect impacts. Contact with spilled oil could cause skin and eye irritation and subsequent infection; matting of fur; irritation of sweat glands, ear tissues, and throat tissues; disruption of sight and hearing; asphyxiation from inhalation of fumes; and toxicity from ingestion of oil and contaminated food. Indirect impacts could include reduction of food supply, destruction of habitat, and fouling of nests. Impacts could also occur from vehicular traffic and other activities associated with spill cleanup. However, any such impacts are unlikely due to the distance from shore and response actions that would occur in the event of a spill.

C.3.16 Florida Salt Marsh Vole (Endangered)

The Florida salt marsh vole is a small, dark brown or black rodent found only in saltgrass (*Distichlis spicata*) meadows in the Big Bend region of Florida that was listed as Endangered under the ESA in 1991. Only two populations of Florida salt marsh vole are known to exist: one near Cedar Key in Levy County, Florida and one in the Lower Suwanee NWR in Dixie County, Florida (Florida Fish and Wildlife Conservation Commission, nd-e). No critical habitat has been established for the Florida salt marsh vole in part due to concerns over illegal trapping or trespassing if the location of the populations were publicly disclosed (USFWS, 2001b).

A large oil spill is the only IPF that potentially may affect the Florida salt marsh vole. There are no IPFs associated with routine project activities that could affect these animals due to the distance from the project area to their habitat and the lack of any onshore support activities near their habitat. A small fuel spill in the project area would not affect the Florida salt marsh vole because a small fuel spill would not be expected to reach their habitat prior to dissipating (see **Section A.9.1**).

Impacts of a Large Oil Spill

Florida salt marsh vole habitat in Levy and Dixie counties, Florida is approximately 523 miles (843 km) from the project area. The 30-day OSRA modeling (**Table 4**) predicts that a spill in the project area has <0.5% or less conditional probability of contacting any coastal areas containing Florida salt marsh vole habitat within 30 days.

In the event of oil contacting beaches containing these animals, Florida salt marsh voles could experience several types of direct and indirect impacts. Contact with spilled oil could cause skin and eye irritation and subsequent infection; matting of fur; irritation of sweat glands, ear tissues, and throat tissues; disruption of sight and hearing; asphyxiation from inhalation of fumes; and toxicity from ingestion of oil and contaminated food. Indirect impacts could include reduction of food supply, destruction of habitat, and fouling of nests. Impacts could also occur from vehicular traffic and other activities associated with spill cleanup. Impacts associated with an extensive oiling of coastal habitat containing Florida salt marsh voles from a large oil spill are expected to be significant. Due to the extremely low population numbers, extensive oiling of Florida salt marsh vole habitat could result in the extinction of the species. However, any such impacts are unlikely due to the distance from the project area to Florida salt marsh vole habitat and response actions that would occur in the event of a spill.

C.3.17 Panama City Crayfish (Threatened)

The USFWS issued a Final Rule designating the Panama City crayfish as Threatened under the ESA in 2022. The Panama City crayfish is a semi-terrestrial crayfish that grows up to 2 inches (51 mm) in size and is found in south-central Bay County, Florida. Medium to dark brown in color, the crayfish prefers areas dominated by herbaceous vegetation and shallow or fluctuating water levels (Keppner and Keppner, 2004). Historically prevalent in shallow freshwater bodies in pine and prairie communities, urban development has largely replaced these habitats. The Panama City crayfish is now generally found in wet or semi-wet swales, ditches, slash pine plantations, undeveloped utility rights-of-way, and remnant wetlands (Florida Fish and Wildlife Conservation Commission, 2016).

A large oil spill is the only IPF that potentially may affect the Panama City crayfish. There are no IPFs associated with routine project activities that could affect these animals due to the distance from the project area to their habitat and the lack of any onshore support activities near their habitat. A small fuel spill in the project area would not affect the Panama City crayfish because a small fuel spill would not be expected to reach their habitat prior to dissipating (see **Section A.9.1**).

Impacts of a Large Oil Spill

Panama City crayfish critical habitat in Bay County, Florida is approximately 420 miles (676 km) from the project area. The 30-day OSRA modeling (**Table 4**) predicts that a spill in the project area has a <0.5% conditional probability of contacting any coastal areas containing Panama City crayfish critical habitat within 30 days.

Effects of oiling on the Panama City crayfish are largely unknown. In general, crayfishes use chemoreception to orient themselves in their environmental, to find food, and to avoid predators (Bergman and Moore, 2005). Exposure to hydrocarbons has been shown to damage receptor cells that crayfish use for chemoreception, thus decreasing their fitness (Tierney et al., 2010).

Indirect impacts of oiling of Panama City crayfish habitat could include reduction of food supply, destruction of habitat, and fouling of burrows. Impacts could also occur from vehicular traffic and other activities associated with spill cleanup. Impacts associated with an extensive oiling of coastal habitat containing Panama City crayfish from a large oil spill are expected to be significant. Due to the low population numbers and restricted range, extensive oiling of

Panama City crayfish habitat could be significant at the species level. However, any such impacts are unlikely due to the distance from the project area to Panama City crayfish habitat and response actions that would occur in the event of a spill.

C.3.18 Threatened and Endangered Coral Species

There are six Threatened coral species (elkhorn coral, staghorn coral, lobed star coral, mountainous star coral, boulder star coral, and rough cactus coral), and one Endangered coral species (pillar coral) known to occur in the northern Gulf of America. Elkhorn coral, lobed star coral, mountainous star coral, and boulder star coral have been reported from the coral cap region of the Flower Garden Banks (NOAA, 2014), but are unlikely to be present with a widespread distribution in the northern Gulf of America because they typically inhabit coral reefs in shallow, clear tropical, or subtropical waters. Staghorn coral, pillar coral, and rough cactus coral are only known from the Florida Keys and Dry Tortugas (Florida Fish and Wildlife Conservation Commission, nd-d). Other Caribbean coral species evaluated by NMFS in 2014 (79 FR 53852) either do not meet the criteria for ESA listing or are not known from the Flower Garden Banks, Florida Keys, or Dry Tortugas.

NMFS has designated critical habitat for the boulder star coral, lobed star coral, mountainous star coral, pillar coral, and rough cactus coral in the Atlantic Ocean, Gulf of America, and Caribbean Sea per 88 FR 54026, effective in September 2023. For the areas in the Gulf of America, this includes the Flower Garden Banks and the waters near Miami-Dade and Monroe counties, Florida, and the Dry Tortugas (**Figure 3**).

There are no IPFs associated with routine project activities that could affect Threatened corals in the northern Gulf of America. A small fuel spill would not affect Threatened coral species because the oil would float and dissipate on the sea surface. A large oil spill is the only relevant IPF.

Impacts of a Large Oil Spill

A spill would be unlikely to contact the corals of the Flower Garden Banks based on the distance between the project area and the Flower Garden Banks (approximately 123 statute miles [199 km]), and the difference in water depth between the project area (2,145 m [7,036 ft]) and the Banks (approximately 17 to 145 m [56 to 476 ft]). NMFS (2025a) noted that listed corals are not likely to be adversely affected by oil spills. While on the surface, oil would not be expected to contact corals on the seafloor. Natural or chemical dispersion of oil could cause a subsurface plume which would have the remote possibility of contacting seafloor corals.

If a subsurface plume were to occur, impacts on the Flower Garden Banks would be unlikely due to the distance between the project area and corals within the Flower Garden Banks. Near-bottom currents in the region are predicted to flow along the isobaths (Nowlin et al., 2001) and typically would not carry a plume upward onto the continental shelf. Valentine et al. (2014) observed the spatial distribution of excess hopane, a crude oil tracer from *Deepwater Horizon* spill sediment core samples, to be in the deeper waters and not transported up the shelf, thus confirming that near-bottom currents flow along the isobaths.

In the unlikely event that a subsurface plume reached reefs at the Flower Garden Banks or other Gulf of America reefs, oil droplets or oiled sediment particles could come into contact with reef organisms or corals. As discussed by BOEM (2017), impacts relevant to these corals could

include loss of habitat, biodiversity, and live coral coverage. Sublethal effects could be long-lasting and affect the resilience of coral colonies to natural disturbances (e.g., elevated water temperature and diseases) (BOEM, 2017).

Due to the distance between the project area and coral habitats, there is a low chance of oil contacting Threatened and Endangered coral critical habitat in the event of a spill, and no significant impacts on ESA-listed coral species are expected.

C.3.19 Queen Conch (Threatened)

The queen conch is a large gastropod that occurs throughout the Caribbean Sea, Gulf of America, and Bermuda which was listed as Threatened under the ESA in 2024 (NOAA, 2024b). The species is slow moving and found in a variety of habitats including seagrass beds, sands flats, algal beds, and rubble areas up to 30 m (98.4 ft) in water depth. Larval conch feed primarily on phytoplankton, while juvenile and adults feed on a mix of seagrass and macroalgae (Stoner and Appeldoorn, 2022). Overall, the population of queen conch is declining, largely due to overfishing and illegal fishing practices. Exact population numbers are unknown due to the difficulty in obtaining accurate counts. The majority of available density estimates suggest that conch populations are below minimum thresholds necessary to maintain or increase populations (Horn et al., 2022).

There are no IPFs associated with routine project activities that could affect queen conch. A small fuel spill would not affect queen conch because the fuel would float and dissipate on the sea surface. A large oil spill is the only relevant IPF.

Impacts of a Large Oil Spill

A large oil spill in the project area could potentially reach queen conch habitat and affect the substrate. These effects would be of particular concern where the species occurs in shallower waters. There is some information available on the effects of oil spills on seagrass meadows and other marine gastropods, but little information available on the direct effects of oil on queen conch (Horn et al., 2022). In the event of a large oil spill, due to the low density of individual queen conch thought to occur in the Gulf of America, any population-level impacts are considered unlikely.

C.4 Coastal and Marine Birds

C.4.1 Marine Birds

Marine birds include seabirds and other species that may occur in the pelagic environment of the project area (Clapp et al., 1982a; Clapp et al., 1982b; 1983; Davis and Fargion, 1996; Davis et al., 2000). Seabirds spend much of their lives offshore over the open ocean, except during breeding season when they nest along the coast (on the mainland and on barrier islands). In addition, other birds such as waterfowl, marsh birds, and shorebirds may occasionally be present over open ocean areas. No Endangered or Threatened bird species are likely to occur at the project area due to the distance from shore. For a discussion of shorebirds and coastal nesting birds, see **Section C.4.2**.

Seabirds of the northern Gulf of America were surveyed from ships during the GulfCet II program (Davis et al., 2000) which reported that terns, storm-petrels, shearwaters, and jaegers were the most frequently sighted seabirds in deepwater areas of the Gulf of America. From

these surveys, four ecological categories of seabirds were documented in the deepwater areas of the Gulf: summer migrants (shearwaters, storm petrels, boobies); summer residents that breed in the Gulf (Sooty Tern [*Onychoprion fuscatus*], Least Tern [*Sternula antillarum*], Sandwich Tern [*Thalasseus sandvicensis*], Magnificent Frigatebird [*Fregata magnificens*]); winter residents (gannets, gulls, jaegers); and permanent resident species (Laughing Gulls [*Leucophaeus atricilla*], Royal Terns [*Thalasseus maximus*], Bridled Terns [*Onychoprion anaethetus*]) (Davis et al., 2000).

Common marine bird species include Wilson's Storm-Petrel (*Oceanites oceanicus*), Magnificent Frigatebird, Northern Gannet (*Morus bassanus*), Masked Booby (*Sula dactylatra*), Brown Booby (*Sula leucogaster*), Cory's Shearwater (*Calonectris borealis*), Greater Shearwater (*Puffinus gravis*), and Audubon's Shearwater (*Puffinus lherminieri*). Seabirds are distributed Gulf-wide and are not specifically associated with the project area.

Relationships with hydrographic features were found for several marine bird species, possibly due to effects of hydrography on nutrient levels and productivity of surface waters where birds forage. The GulfCet II study did not estimate bird densities; however, Haney et al. (2014) indicated that marine bird densities over the open ocean were estimated to be 1.6 birds km⁻².

IPFs that potentially may affect marine birds include drilling rig presence, marine sound and lights, support vessel and helicopter traffic; and two types of accidents (a small fuel spill and a large oil spill). Effluent discharges permitted under the NPDES are likely to have negligible impacts on the birds due to rapid dispersion, the small area of ocean affected, the intermittent nature of the discharges, and the mobility of these animals. Compliance with NTL BSEE-2015-G03 is expected to minimize the potential for marine debris-related impacts on birds. The IPFs with potential impacts listed in **Table 2** are discussed below.

Impacts of Drilling Rig Presence, Marine Sound, and Lights

Marine birds that frequent offshore oil and gas operations may be exposed to contaminants including air pollutants and routine discharges, but significant impacts are unlikely due to rapid dispersion. Birds migrating over water have been known to collide with offshore structures, resulting in injury and/or death (Wiese et al., 2001; Russell, 2005). Mortality of migrant birds at tall towers and other land-based structures has been reviewed extensively, and the mechanisms involved in rig collisions appear to be similar. In some cases, migrants simply do not see a part of the rig until it is too late to avoid it. In other cases, navigation may be disrupted by marine sound (Russell, 2005). On the other hand, offshore structures are suitable stopover perches for most trans-Gulf migrant species, and most of the migrants that stop over on rigs probably benefit from their stay, particularly in spring (Russell, 2005). Due to the limited scope and short duration of activities described in this EP, any impacts on populations of either seabirds or trans-Gulf migrant birds are not expected to be significant.

Trans-Gulf migrant birds including shorebirds, wading birds, and terrestrial birds may also be present in the project area. Migrant birds may use offshore structures, including platforms and semisubmersibles for resting, feeding, or as temporary shelter from inclement weather (Russell, 2005). Some birds may be attracted to offshore structures because of the lights and the fish populations that aggregate around these structures. A study in the North Sea indicated that rig lighting causes circling behavior in various birds, especially on cloudy nights; apparently the birds' geomagnetic compass is upset by the red part of the spectrum from the lights currently in use (Van de Laar, 2007; Poot et al., 2008). The numbers varied greatly, from none to some

tens of thousands of birds per night per rig, with an apparent effect radius of up to 3 miles (5 km) (Poot et al., 2008). A study in the Gulf of America also noted the phenomenon but did not recommend mitigation (Russell, 2005). One factor to consider in evaluating this impact in the Gulf of America would include the lower incidence of cloudy and foggy days in the Gulf of America versus the North Sea. In laboratory experiments, Poot et al. (2008) found the magnetic compass of migratory birds to be wavelength dependent. Migratory birds require light from the blue-green part of the spectrum for magnetic compass orientation, whereas red light (visible long-wavelength) disrupts their magnetic orientation. They designed a field study to test if and how changing light color influenced migrating birds under field conditions. During field studies they found that nocturnally migrating birds were disoriented and attracted by red and white light (containing visible long-wavelength radiation), whereas they were clearly less disoriented by blue and green light (containing less or no visible long-wavelength radiation) (Poot et al., 2008).

Overall, potential negative impacts to birds from drilling rig lighting, sound, collisions, or other adverse effects are highly localized and may affect individual birds during migration periods.

Impacts of Support Vessel and Helicopter Traffic

Support vessels and helicopters are unlikely to significantly disturb marine birds in open, offshore waters, although bird strikes by helicopters could theoretically occur. Schwemmer et al. (2011) showed that several marine bird species showed behavioral responses and altered distribution patterns in response to ship traffic, which could potentially cause loss of foraging time and resting habitat. However, it is likely that individual birds would experience, at most, only short-term behavioral disruption, and the impact would not be significant.

Impacts of a Small Fuel Spill

Potential spill impacts on marine birds are discussed by BOEM (2017). For this EP, there are no unique site-specific issues with respect to spill impacts on these animals.

The probability of a fuel spill is expected to be minimized by Chevron's preventative measures during routine operations, including fuel transfer procedures. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to reduce the potential for impacts on marine birds. EP Section H provides details on spill response measures. Given the open ocean location of the project area and the expected short duration of a small fuel spill, the potential exposure period for marine birds would be brief.

A small fuel spill in offshore waters would produce a slick on the water surface and increase the concentrations of petroleum hydrocarbons and their degradation products. The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time and the effectiveness of spill response measures. **Section A.9.1** discusses the likely fate of a small fuel spill and indicates that over 90% would be evaporated or dispersed naturally within 24 hours (NOAA, 2022). The area of the sea surface with diesel fuel on it would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions.

Marine birds exposed to oil on the sea surface could experience direct physical and physiological effects including skin irritation; chemical burns of skin, eyes, and mucous membranes; and inhalation of VOCs. Due to the limited areal extent and short duration of water quality impacts from a small fuel spill, secondary impacts due to ingestion of oil via contaminated prey or reductions in prey abundance are unlikely. Due to the low densities of birds in open ocean

areas, the small area affected, and the brief duration of the surface slick, minimal if any impacts on pelagic birds would be expected.

Impacts of a Large Oil Spill

Potential spill impacts on marine and pelagic birds are discussed by BOEM (2017). For this EP, there are no unique site-specific issues with respect to spill impacts on these animals.

Pelagic seabirds could be exposed to oil from a spill at the project area. Davis et al. (2000) reported that terns, storm-petrels, shearwaters, and jaegers were the most frequently sighted seabirds in the deepwater Gulf of America (>200 m [656.2 ft]). Haney et al. (2014) estimated that seabird densities over the open ocean were approximately 1.6 birds km⁻². The number of pelagic birds that could be affected in open, offshore waters would depend on the extent and persistence of the oil slick.

Data following the *Deepwater Horizon* incident provides relevant information about the species of pelagic birds that may be affected in the event of a large oil spill. Birds that were treated for oiling include several pelagic species such as the Northern Gannet, Magnificent Frigatebird, and Masked Booby. The Northern Gannet is among the species with the largest numbers of birds affected by the spill. Exposure of marine birds to oil can result in adverse health with severity, depending on the level of oiling. Effects can range from plumage damage and loss of buoyancy from external oiling to more severe effects, such as organ damage, immune suppression, endocrine imbalance, reduced aerobic capacity, and death as a result of oil inhalation or ingestion (NOAA, 2016).

C.4.2 Coastal Birds

Threatened and Endangered bird species (Piping Plover and Whooping Crane) have been discussed previously in **Sections C.3.6** and **C.3.7**. The western Gulf of America (in the US EEZ from Texas to Mississippi) is a known wintering area for the Threatened Rufa Red Knot (USFWS, nd). Various species of non-endangered birds are also found along the northern Gulf Coast, including diving birds, shorebirds, marsh birds, wading birds, and waterfowl. Gulf Coast marshes and beaches also provide important feeding and nesting habitats. Species that nest on beaches, flats, dunes, bars, barrier islands, and similar coastal and nearshore habitats include the Sandwich Tern, Wilson's Plover (*Charadrius wilsonia*), Black Skimmer (*Rynchops niger*), Forster's Tern (*Sterna forsteri*), Gull-Billed Tern (*Gelochelidon nilotica*), Laughing Gull, Least Tern, and Royal Tern. Additional information is presented by BOEM (2017).

The Eastern Brown Pelican was delisted from federal Endangered status in 2009 (USFWS, 2016b) and was delisted from state species of special concern status by the State of Florida in 2017 (Florida Fish and Wildlife Conservation Commission, 2021) and Louisiana (Louisiana Wildlife and Fisheries, 2020). However, this species remains listed as endangered by the state of Mississippi (Mississippi Natural Heritage Program, 2018). Brown Pelicans inhabit coastal habitats and forage within both coastal waters and waters of the inner continental shelf. Aerial and shipboard surveys, including GulfCet and GulfCet II, indicate that Brown Pelicans do not occur in deep offshore waters (Fritts and Reynolds, 1981; Davis and Fargion, 1996; Davis et al., 2000).

The Bald Eagle was delisted from its Threatened status in the lower 48 states on 28 June 2007 but still receives protection under the Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act of 1940. The Bald Eagle is a terrestrial raptor widely distributed across the southern U.S., including coastal habitats along the Gulf of America. The Gulf Coast is inhabited by both wintering migrant and resident Bald Eagles (Johnsgard, 1990; Ehrlich et al., 1992).

IPFs that potentially may affect shorebirds and coastal nesting birds include support vessel and helicopter traffic and a large oil spill. A small fuel spill in the project area would be unlikely to affect shorebirds or coastal nesting birds, as the project area is 185 statute miles (298 km) from the nearest shoreline. As explained in **Section A.9.1**, a small fuel spill would not be expected to make landfall or reach coastal waters prior to dissipating. Compliance with NTL BSEE-2015-G03 is expected to minimize the potential for marine debris-related impacts on shorebirds.

Impacts of Support Vessel and Helicopter Traffic

Support vessels and helicopters will transit coastal areas near Port Fourchon and Galliano, Louisiana, where shorebirds and coastal nesting birds may be found. These activities could periodically disturb individuals or groups of birds within coastal habitats (e.g., wetlands that may support feeding, resting, or breeding birds), and bird strikes could theoretically occur.

Vessel traffic may disturb some foraging and resting birds with flushing distances varying among species and among individuals (Rodgers and Schwikert, 2002; Schwemmer et al., 2011; Mendel et al., 2019). The disturbances will be limited to flushing birds away from vessel pathways; known distances are from 20 to 49 m (65 to 160 ft) for personal watercrafts and 23 to 58 m (75 to 190 ft) for outboard-powered boats (Rodgers and Schwikert, 2002). Support vessels will not approach nesting or breeding areas on the shoreline, so disturbances to nesting birds, eggs, and chicks is not expected. Vessel operators are expected to use designated navigation channels and comply with posted speed and wake restrictions while transiting sensitive inland waterways. Due to the limited scope and short duration of drilling activities, any short-term impacts are not expected to be significant to coastal bird populations.

Helicopter traffic can cause some disturbance to birds onshore and offshore. Responses are highly dependent on the type of aircraft, the bird species, the activities that the animals were previously engaged in, and previous exposures to overflights (Efroymsen et al., 2003). Helicopters seem to cause the most intense responses over other human disturbances (Bélanger and Bédard, 1989; Rojek et al., 2008; Fuller et al., 2018). The Federal Aviation Administration recommends (Advisory Circular No. 91-36D) that pilots maintain a minimum altitude of 610 m (2,000 ft) when flying over sound-sensitive areas such as parks, forests, primitive areas, wilderness areas, National Seashores, or NWRs, and maintain flight paths to reduce aircraft marine sound in these marine sound-sensitive areas. The 2,000-foot altitude minimum is greater than the distance (slant range) at which aircraft overflights have been reported to cause behavioral effects on most species of birds studied by Efroymsen et al. (2000). It is assumed that adherence to these guidelines would reduce potential behavioral disturbances (such as temporary displacement or avoidance behavior) of individual birds in coastal and inshore areas. The potential impacts from helicopter traffic are not expected to be significant to coastal bird populations or species in the project area.

Impacts of Large Oil Spill

The 30-day OSRA modeling (**Table 4**) indicates nearshore waters and embayments from Calhoun County, Texas, to Plaquemines Parish, Louisiana could be affected within 30 days (1 to 2% conditional probability).

Coastal birds can be exposed to oil as they float on the water surface, dive during foraging, or wade in oiled coastal waters. Oil interferes with the water repellency of feathers and can cause hypothermia in the right conditions. As birds groom themselves, they can ingest and inhale the oil on their bodies. Scavengers such as Bald Eagles and gulls can be exposed to oil by feeding on carcasses of contaminated fish and wildlife. While ingestion can kill animals immediately, more often it results in lung, liver, and kidney damage, which can lead to death (BOEM, 2017). Bird eggs may be damaged if an oiled adult sits on the nest.

Brown and White Pelicans (*Pelecanus erythrorhynchos*) are especially at risk from direct and indirect impacts from spilled oil within inner shelf and inshore waters, such as embayments. The range of these species is generally limited to these waters and surrounding coastal habitats. Brown Pelicans feed on mid-sized fish that they capture by diving from above (“plunge diving”) and then scooping the fish into their expandable gular pouch, while White Pelicans feed from the surface by dipping their beaks in the water. These behaviors make pelicans susceptible to plumage oiling if they feed in areas with surface oil or an oil sheen. They may also capture prey that has been physically contaminated with oil or has ingested oil. Issues for Brown and White Pelicans include direct contact with oil, disturbance by cleanup activities, and long-term habitat contamination (BOEM, 2017).

Coastal fishing birds of prey such as Bald Eagles, ospreys (*Pandion haliaetus*), etc. may also be at risk from direct and indirect impacts from spilled oil. This species often captures fish within shallow water areas (snatching prey from the surface or wading into shallow areas to capture prey with their bill) and so may be susceptible to plumage oiling and, as with the Brown and White Pelicans, they may also capture prey that has been physically contaminated with oil or has ingested oil (BOEM, 2017). It is expected that impacts to coastal birds from a large oil spill resulting in the death of individual birds would be adverse but not significant at population levels.

C.5 Fisheries Resources

C.5.1 Pelagic Communities and Ichthyoplankton

Biggs and Ressler (2000) reviewed the biology of pelagic communities in the deepwater environment of the northern Gulf of America. The biological oceanography of the region is dominated by the influence of the Loop Current, whose surface waters are among the most oligotrophic in the world’s oceans. Superimposed on this low-productivity condition is productive “hot spots” associated with entrainment of nutrient-rich Mississippi River water and mesoscale oceanographic features. Anticyclonic and cyclonic hydrographic features play an important role in determining biogeographic patterns and controlling primary productivity in the northern Gulf of America (Biggs and Ressler, 2000).

Most fishes inhabiting shelf or oceanic waters of the Gulf of America have planktonic eggs and larvae (Ditty, 1986; Ditty et al., 1988; Richards et al., 1989; Richards et al., 1993). Recent ichthyological work has been shedding light on the mobility of fish larvae: for example, work

from Shiroza et al. (2021) has demonstrated that bluefin tuna larvae (*Thunnus thynnus*), even when <10 mm standard length, have mobility significant enough that they are able to pursue prey, refuting the classic assumption that fish larvae are planktonic. Larvae may be more capable of avoiding certain impacts than previously expected. However, larval mobility is still being understood across fish species, and drift is still a major source of distribution of larval tuna (Muhling et al., 2013), and likely for other fishes that occur in this area.

A study by Ross et al. (2012) on midwater fauna to characterize vertical distribution of mesopelagic fishes in selected deepwater areas in the Gulf of America substantiated high species richness but general domination by relatively few families and species.

IPFs that potentially may affect pelagic communities and ichthyoplankton include vessel presence, marine sound, and lights; effluent discharges; water intake; and two types of accidents (a small fuel spill and a large oil spill). These IPFs with potential impacts listed in **Table 2** are discussed below.

Impacts of Drilling Rig Presence, Marine Sound, and Lights

The drilling rig, as a floating structure in the deepwater environment, will act as fish aggregating device (FAD). In oceanic waters, the FAD effect would be most pronounced for epipelagic fishes such as tunas, dolphin, billfishes, and jacks, which are commonly attracted to fixed and drifting surface structures (Holland, 1990; Higashi, 1994; Relini et al., 1994). Positive fish associations with offshore rigs and platforms in the Gulf of America are well documented (Galloway and Lewbel, 1982; Wilson et al., 2003; 2006; Edwards and Sulak, 2006). The FAD effect could possibly enhance the feeding of epipelagic predators by attracting and concentrating smaller fish species. Drilling rig sound could potentially cause masking in fishes, thereby reducing their ability to hear biologically relevant sounds (Radford et al., 2014). The only defined acoustic threshold levels for non-impulsive sound are given by Popper et al. (2014) and apply only to species of fish with swim bladders that provide some hearing (pressure detection) function. All fishes can also detect particle motion, but the scientific understanding of detection thresholds and behavioral responses from particle motion is in its infancy and there are currently no accepted thresholds available (Hawkins et al., 2021).

Popper et al. (2014) estimated an SPL threshold level of 170 dB re 1 μ Pa over a 48-hour period for onset of recoverable injury and 158 dB re 1 μ Pa over a 12-hour period for onset temporary auditory threshold shifts. However, no consistent behavioral thresholds for fish resulting from non-impulsive sound have been established (Hawkins and Popper, 2014) and the most widely recommended behavioral threshold for fish for all sound sources is SPL of 150 dB re 1 μ Pa as defined by the Fisheries Hydroacoustic Working Group (2008). Sound may also influence fish behaviors, such as predator-avoidance, foraging, reproduction, and intraspecific interactions (Picciulin et al., 2010; Brintjes and Radford, 2013; McLaughlin and Kunc, 2015). Fish aggregation is likely to occur to some degree due to the presence of the drilling rig, but the impacts would be limited in geographic scope and no population level impacts are expected.

Limited data exist regarding the impacts of sound on pelagic larvae and eggs. Generally, it is believed that larval fish will have similar hearing sensitivities as adults, but may be more susceptible to barotrauma injuries associated with impulsive sound (Popper et al., 2014). Larval fish were experimentally exposed to simulated impulsive sounds by Bolle et al. (2012). The controlled playbacks produced SEL_{24h} of 206 dB re 1 μ Pa² s but resulted in no increased mortality

between the exposure and control groups. Non-impulsive sound sources (such as drilling rig operations) are expected to be far less injurious than impulsive sources given the characteristics of these source types. Because of the periodic and transient nature of ichthyoplankton, they are not expected to remain in proximity to the source for a full 24-hour period to receive above-threshold sound, and no impacts to these life stages are expected.

Impacts of Effluent Discharges

Muds and cuttings discharges may have a slight effect on the benthic environment near the wellsite, including a localized increase in water turbidity, the limited blanketing of seafloor sediments, and slightly increased concentrations of hydrocarbons and metals. Treated cuttings are monitored for visible sheen prior to discharge. Contaminants released into the water column will be diluted rapidly within the open ocean environment. Minimal impacts on pelagic communities are anticipated.

Treated sanitary and domestic wastes may have a slight effect on the pelagic environment in the immediate vicinity of these discharges. These wastes may have elevated levels of nutrients, organic matter, and chlorine, but should be diluted rapidly to undetectable levels within tens to hundreds of meters from the source. Minimal impacts on water quality, plankton, and nekton are anticipated.

Deck drainage may have a slight effect on the pelagic environment in the immediate vicinity of these discharges. Deck drainage from contaminated areas will be passed through an oil-and-water separator prior to release, and discharges will be monitored for visible sheen. The discharges may have slightly elevated levels of hydrocarbons but should be diluted rapidly to undetectable levels within tens to hundreds of meters from the source. Minimal impacts on water quality, plankton, and nekton are anticipated.

Other discharges in accordance with the NPDES permit, such as desalination unit brine and uncontaminated cooling water, fire water, and ballast water, are expected to be diluted rapidly and have little or no impact on pelagic communities.

Impacts of Water Intake

Seawater will be drawn from the ocean for once-through, non-contact cooling of machinery on the drilling rig. The intake of seawater for cooling water will entrain plankton though per the NPDES permit GMG290000 the linear velocities should be $<5 \text{ ft second}^{-1}$. The low intake velocity should allow most strong-swimming juvenile fishes and smaller adults to escape entrainment or impingement (Electric Power Research Institute, 2000). However, drifting plankton and many fish larvae would not be able to escape entrainment with the exception of a few fast-swimming larvae of certain taxonomic groups. Those organisms entrained may be stressed or killed (Cada, 1990; Mayhew et al., 2000), primarily through changes in water temperature during the route from cooling intake structure to discharge structure and mechanical damage (turbulence in pumps and condensers). The cooling water systems and operating procedures are designed such that a maximum return temperature of the seawater being discharged back into the ocean does not exceed 120°F; thus, minimizing the chance that plankton will be stressed/killed. Due to the limited scope and short duration of drilling activities, any short-term impacts of entrainment are not expected to be significant to plankton or ichthyoplankton populations (BOEM, 2017).

The drilling rig ultimately chosen for this project is expected to be in compliance with all cooling water intake requirements including NPDES permit GMG290000.

Impacts of a Small Fuel Spill

Potential spill impacts on fisheries resources are discussed by BOEM (2017). For this EP, there are no unique site-specific issues with respect to spill impacts.

The probability of a fuel spill is expected to be minimized by Chevron's preventative measures during routine operations, including fuel transfer procedures. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to mitigate the potential for impacts on pelagic communities, including ichthyoplankton. EP Section H provides details on spill response measures. Given the open ocean location of the project area, the duration of a small spill will be brief and the potential for impacts to occur would be minimal.

A small fuel spill in offshore waters would produce a slick on the water surface and increase the concentrations of petroleum hydrocarbons and their degradation products. The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time of the release and the effectiveness of spill response measures. **Section A.9.1** discusses the likely fate of a small fuel spill and indicates that over 90% would dissipate naturally within 24 hours (NOAA, 2022). The area of the sea surface with diesel fuel on it would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions.

A small fuel spill could have localized impacts on phytoplankton, zooplankton, and nekton. Determining the impact of a diesel spill on phytoplankton is a complex issue as some phytoplankton species are more tolerant of oil exposure than others (Ozhan et al., 2014). Phytoplankton populations can change quickly on small temporal and spatial scales, making it difficult to predict how a phytoplankton community as a whole will respond to an oil spill. Due to the limited areal extent and short duration of water quality impacts, a small fuel spill would be unlikely to produce detectable impacts on pelagic communities and ichthyoplankton.

Impacts of a Large Oil Spill

Potential spill impacts on pelagic communities and ichthyoplankton are discussed by BOEM (2017). A large oil spill could affect water column biota including phytoplankton, zooplankton, ichthyoplankton, and nekton. A large spill that persisted for weeks or months would be more likely to affect these communities. While adult and juvenile fishes may actively avoid a large spill, planktonic eggs and larvae would be unable to avoid contact. Eggs and larvae of fishes are especially vulnerable to oiling because they inhabit the upper layers of the water column, and they will die if exposed to certain toxic fractions of spilled oil. Impacts potentially would be greater if local-scale currents retained planktonic larval assemblages (and the floating oil slick) within the same water mass. Impacts to ichthyoplankton from a large spill would be greatest during spring and summer when shelf concentrations peak (BOEM, 2016b).

Oil spill impacts to phytoplankton include changes in community structure and increases in biomass, which have been attributed to the effects of oil contamination and of decreased predation due to zooplankton mortality (Abbriano et al., 2011; Ozhan et al., 2014). Ozhan et al. (2014) reported that the formation of oil films on the water surface can limit gas exchange through the air-sea interface and can reduce light penetration into the water column which will limit phytoplankton photosynthesis.

Mortality of zooplankton has been shown to be positively correlated with oil concentrations (Lennuk et al., 2015). Spills that are not immediately lethal can have short- or long-term impacts

on biomass and community composition, behavior, reproduction, feeding, growth and development, immune response and respiration (Harvell et al., 1999; Wootton et al., 2003; Auffret et al., 2004; Hannam et al., 2010; Bellas et al., 2013; Blackburn et al., 2014). Zooplankton are especially vulnerable to acute oil pollution, showing increased mortality and sublethal changes in physiological activities (e.g., egg production; Moore and Dwyer, 1974; Linden, 1976; Lee et al., 1978; Suchanek, 1993). Bioaccumulation of hydrocarbons can lead to additional impacts among those higher trophic level consumers that rely on zooplankton as a food source (Almeda et al., 2013; Blackburn et al., 2014).

Planktonic communities have a high capacity for recovery from the effects of oil spill pollution due to their short life cycle and high reproductive capacity (Abbriano et al., 2011). Planktonic communities drift with water currents and recolonize from adjacent areas. Because of these attributes, plankton usually recover relatively rapidly to normal population levels following hydrocarbon spill events. Research in the aftermath of the *Deepwater Horizon* incident found that phytoplankton population recovered within weeks to months and zooplankton populations may have only been minimally affected (Abbriano et al., 2011).

C.5.2 Essential Fish Habitat

Essential Fish Habitat (EFH) is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Under the Magnuson-Stevens Fishery Conservation and Management Act, as amended, federal agencies are required to consult on activities that may adversely affect EFH designated in Fishery Management Plans developed by the regional Fishery Management Councils.

The Gulf of Mexico Fishery Management Council (GMFMC) (now called the Gulf Council) has prepared Fishery Management Plans for corals and coral reefs, shrimps, Caribbean spiny lobster (*Panulirus argus*), reef fishes, coastal migratory pelagic fishes, and red drum (*Sciaenops ocellatus*). In 2005, the EFH for these managed species was redefined in Generic Amendment No. 3 to the various Fishery Management Plans (GMFMC, 2005). The EFH for most of these GMFMC-managed species is on the continental shelf in waters shallower than 183 m (600 ft). The shelf edge is the outer boundary for coastal migratory pelagic fishes, reef fishes, and shrimps. EFH for corals and coral reefs includes some shelf-edge topographic features on the Texas-Louisiana OCS located approximately 106 statute miles (170 km) from the project area (**Figure 3**).

Highly migratory pelagic fishes, which occur as transients in the project area, are the only remaining group for which EFH has been identified in the deepwater Gulf of America. Species in this group, including tunas, swordfishes, billfishes, and sharks, are managed by NMFS. **Table 7** lists the highly migratory fish species and their life stages with EFH at or near the project area.

Research indicates the central and western Gulf of America may be important spawning habitat for Atlantic bluefin tuna (*Thunnus thynnus*), and (NMFS, 2009c) has designated a Habitat Area of Particular Concern (HAPC) for this species. The HAPC covers much of the deepwater Gulf of America, including the project area (**Figure 3**). The areal extent of the HAPC is approximately 300,000 km² (115,831 mi²). Atlantic bluefin tuna follow an annual cycle of foraging in June through March off the eastern U.S. and Canadian coasts, followed by migration to the Gulf of America to spawn in April, May, and June (NMFS, 2009c). The Atlantic bluefin tuna has also been designated as a species of concern (NMFS, 2011). An amendment to the original EFH Generic Amendment was finalized in 2005 (GMFMC, 2005). One of the most significant proposed

changes in this amendment reduced the extent of EFH relative to the 1998 Generic Amendment by removing the EFH description and identification from waters between 100 fathoms and the seaward limit of the EEZ. The Highly Migratory Species Fisheries Management Plan was amended in 2009 to update EFH and HAPC to include the bluefin tuna spawning area (NMFS, 2009c).

Table 7. Migratory fish species with designated Essential Fish Habitat (EFH) at or near Walker Ridge Blocks 677 and 678, including life stage(s) potentially present within the project area.

Common Name	Scientific Name	Life Stage(s) Potentially Present Within or Near the Project Area
Albacore tuna	<i>Thunnus alalunga</i>	Juveniles, adults
Atlantic bluefin tuna	<i>Thunnus thynnus</i>	Spawning, eggs, adults
Bigeye tuna	<i>Thunnus obesus</i>	Juveniles, adults
Bigeye thresher shark	<i>Alopias superciliosus</i>	All
Blue marlin	<i>Makaira nigricans</i>	All
Longbill spearfish	<i>Tetrapturus pfluegeri</i>	All
Longfin mako shark	<i>Isurus paucus</i>	All
Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	All
Sailfish	<i>Istiophorus albicans</i>	Spawning, eggs, larvae
Shortfin mako shark	<i>Isurus oxyrinchus</i>	All
Silky shark	<i>Carcharhinus falciformis</i>	All
Skipjack tuna	<i>Katsuwonus pelamis</i>	All
Swordfish	<i>Xiphias gladius</i>	All
Whale shark	<i>Rhincodon typus</i>	All
White marlin	<i>Tetrapturus albidus</i>	Juveniles
Yellowfin tuna	<i>Thunnus albacares</i>	All

NTLs 2009-G39 and 2009-G40 provide guidance and clarification of the regulations (i.e., 50 CFR 600 Subpart J) with respect to biologically sensitive underwater features and areas and benthic communities that are considered EFH. As part of an agreement between BOEM and NMFS to complete a new programmatic EFH consultation for each new Five-Year Program, an EFH consultation was initiated between BOEM’s Gulf of America Region and NOAA’s Southeastern Region during the preparation, distribution, and review of BOEM’s 2024-2029 National OCS oil and gas leasing program Final Programmatic EIS (BOEM, 2023a).

Other HAPCs to protect corals and coral reefs have been identified by the GMFMC (2005). These include the Florida Middle Grounds, Madison-Swanson Marine Reserve, Tortugas North and South Ecological Reserves, Pulley Ridge, and several individual reefs and banks of the northwestern Gulf of America. Green Canyon Block 852 is the HAPC located nearest to the project area (approximately 54 statute miles [87 km]).

IPFs that potentially may affect EFH include vessel presence, marine sound, and lights; effluent discharges; water intake; and two types of accidents (a small fuel spill and a large oil spill).

Impacts of Drilling Rig Presence, Marine Sound, and Lights

The drilling rig, as a floating structure in the deepwater environment, will act as FADs with most pronounced effects on epipelagic fishes that include species with EFH designation (Holland, 1990; Higashi, 1994; Relini et al., 1994; Gates et al., 2017). The FAD effect would likely attract and concentrate smaller fish species and thus enhance feeding of epipelagic predators.

Drilling rig sound could potentially cause acoustic masking for fishes, thereby reducing their ability to hear biologically relevant sounds (Radford et al., 2014). Sound may also influence fish behaviors related to activities such as predator avoidance, foraging, reproduction, and intraspecific interactions (Picciulin et al., 2010; Bruintjes and Radford, 2013; McLaughlin and Kunc, 2015). The only defined acoustic threshold levels for non-impulsive sound are given by Popper et al. (2014) and apply only to species of fish with swim bladders, including some species with EFH designation, that provide some hearing (pressure detection) function. Popper et al. (2014) recommended SPL threshold levels of 170 dB re 1 μ Pa over a 48-hour period for onset of recoverable injury and an SPL threshold of 158 dB re 1 μ Pa over a 12-hour period for onset temporary auditory threshold shifts. No consistent behavioral thresholds for fish resulting from non-impulsive sound have been established (Hawkins and Popper, 2014) and the most widely recommended behavioral threshold for fish for all sound sources is SPL of 150 dB re 1 μ Pa as defined by the Fisheries Hydroacoustic Working Group (2008). Because the drilling rig is a temporary structure, any impacts on EFH for managed species are considered negligible.

Impacts of Effluent Discharges

Other effluent discharges affecting EFH by diminishing ambient water quality include drilling muds and cuttings, treated sanitary and domestic wastes, deck drainage, and miscellaneous discharges such as desalination unit brine and uncontaminated cooling water, fire water, and ballast water. Impacts on water quality have been discussed previously. No detectable impacts on EFH for managed species are expected from these discharges.

Impacts of Water Intake

As noted previously, cooling water intake will cause entrainment and impingement of plankton, including fish eggs and larvae (ichthyoplankton). Due to the limited scope and short duration of drilling activities, any short-term impacts on EFH for highly migratory pelagic fishes are not expected to be biologically significant. The multisale EIS (BOEM, 2017) discusses cooling water discharge. Water with an elevated temperature may accumulate around the discharge pipe. However, the warmer water should be diluted rapidly to ambient temperature levels within 100 m (328 ft) of the discharge pipe. Any impacts to pelagic species would be localized and brief (BOEM, 2014a).

Impacts of a Small Fuel Spill

Potential spill impacts on EFH are discussed by BOEM (2017). For this EP, there are no unique site-specific issues with respect to spill impacts.

The probability of a fuel spill is expected to be minimized by Chevron's preventative measures during routine operations, including fuel transfer procedures. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to help diminish the potential for impacts on EFH. EP Section H provides details on spill response measures. Given the open ocean location of

the project area, the duration of a small spill would be brief and the potential for impacts to EFH minimal.

A small fuel spill in offshore waters would produce a slick on the water surface and increase the concentrations of petroleum hydrocarbons and their degradation products. The extent and persistence of impacts would depend on the meteorological and oceanographic conditions at the time of the release and the effectiveness of spill response measures. **Section A.9.1** discusses the likely fate of a small fuel spill and indicates that over 90% would be dissipated naturally within 24 hours (NOAA, 2022). The area of the sea surface with diesel fuel on it would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions.

A small fuel spill could have localized impacts on EFH for highly migratory pelagic fishes, including tunas, swordfishes, billfishes, and sharks. These species occur as transients in the project area. A spill would produce short-term impact on water quality in the HAPC for spawning bluefin tuna, which covers much of the deepwater Gulf of America. The areal extent of impact from a small fuel spill would represent a negligible portion of the HAPC.

A small fuel spill would not likely affect EFH for corals and coral reefs, the nearest EFH being the topographic features located approximately 106 statute miles (170 km) from the project area. A small fuel spill would float and dissipate on the sea surface and would not contact these features.

Impacts of a Large Oil Spill

Potential spill impacts on EFH are discussed by BOEM (2017; 2023). For this EP, there are no unique site-specific issues with respect to EFH.

An oil spill in offshore waters would temporarily increase hydrocarbon concentrations on the water surface and potentially in the subsurface as well. Given the extent of EFH designations in the Gulf of America (GMFMC, 2005; NMFS, 2009c), some impact from a large oil spill on EFH would be unavoidable.

A large spill could affect EFH for many managed species including shrimps, stone crab, spiny lobster, reef fishes, coastal migratory pelagic fishes, and red drum. It would result in adverse impacts on water quality and consequentially on water column biota including phytoplankton, zooplankton, and nekton. In coastal waters, sediments could be contaminated and result in persistent degradation of the seafloor habitat for managed demersal fish and shellfish species.

The project area is within the HAPC for spawning Atlantic bluefin tuna (NMFS, 2009c). A large spill could temporarily degrade the HAPC due to increased hydrocarbon concentrations in the water column, with the potential for lethal or sublethal impacts on spawning tuna. Potential impacts would depend in part on the timing of a spill, as this species migrates to the Gulf of America to spawn in April, May, and June (NMFS, 2009c).

The topographic features located 106 statute miles (170 km) from the project area are designated as EFH under the corals and coral reefs management plan (GMFMC, 2005). An accidental spill would be unlikely to affect these features, since an oil spill plume or surface slick would be unlikely to reach them due to their shallower depth relative to the project area.

C.6 Archaeological Resources

C.6.1 Shipwreck Sites

The archaeological assessment identified no archaeologically significant artifacts or shipwrecks within 610 m (2,000 ft) of the proposed project activities based on an autonomous underwater vehicle survey (GEMS, 2025a,b). There is one unidentified sonar contact located approximately 284 m (933 ft) and 338 m (1,110 ft) southeast of the two proposed wellsites, respectively (GEMS Inc 2025a,b). Chevron and its contractors will abide by the applicable requirements of 30 CFR § 550.194I, which stipulate that work be stopped at the project site if any previously undetected archaeological resource is discovered after work has begun until appropriate surveys and evaluations have been completed.

Because there are no shipwreck sites within 610 m (2,000 ft) of the proposed wellsites, there are no routine IPFs that are likely to affect shipwrecks. The only IPF of relevance to shipwrecks is a large oil spill as listed in **Table 2** are discussed below. A small fuel spill would not affect shipwrecks because the fuel would float and dissipate on the sea surface.

Impacts of a Large Oil Spill

The 2017–2023 EIS (BOEM, 2017) estimated that a severe subsurface blowout could resuspend and disperse sediments within a 300-m (984-ft) radius. Because there are no historic shipwrecks within a 300-m (984-ft) radius of the proposed wellsite, this impact would not be relevant. Should there be any indication that potential shipwreck sites could be affected, in accordance with NTL 2005-G07, Chevron will immediately halt drilling or other project operations, take steps to ensure that the site is not disturbed in any way, and contact the BOEM Regional Supervisor, Leasing and Environment, within 48 hours of its discovery. Following shipwreck discovery, all operations within 305 m (1,000 ft) of the site would cease until the Regional Supervisor provides instructions on steps to take to protect the site and assess the potential historic significance.

Beyond this 300-m (984-ft) radius, there is the potential for impacts from oil, dispersants, and depleted oxygen levels. These impacts could include chemical contamination, alteration of the rates of microbial activity (BOEM, 2017), and reduced biodiversity at shipwreck-associated sediment microbiomes (Hamdan et al., 2018). During the *Deepwater Horizon* incident, subsurface plumes were reported at a water depth of about 1,100 m (3,600 ft), extending at least 22 miles (35 km) from the wellsite and persisting for more than a month (Camilli et al., 2010). While the behavior and impacts of subsurface plumes are not well known, a subsurface plume could have the potential to contact shipwreck sites beyond the 300-m (984-ft) radius estimated by BOEM (2012a), depending on its extent, trajectory, and persistence.

A spill entering shallow coastal waters could conceivably contaminate an undiscovered or known coastal shipwreck site. BOEM (2012a) stated that if an oil spill contacted a coastal historic site, such as a fort or a lighthouse, the major impact would be a visual impact from oil contact and contamination of the site and its environment.

C.6.2 Prehistoric Archaeological Sites

With a water depth at the location of the proposed wellsites of approximately 2,145 m (7,086 ft), the proposed project area is well beyond the 60-m (197-ft) depth contour used by BOEM as the seaward extent for potential prehistoric archaeological sites in the Gulf of America. Because prehistoric archaeological sites are not found in the project area, the only relevant IPF is a large oil spill. A small fuel spill would not affect prehistoric archaeological resources because the oil would float and dissipate on the sea surface.

Impacts of a Large Oil Spill

Because prehistoric archaeological sites are not found in the project area, they would not be affected by the physical effects of a subsea blowout. BOEM (2012a) estimated that a severe subsurface blowout could resuspend and disperse sediments within a 300-m (984-ft) radius.

Along the northern Gulf Coast, prehistoric sites exist along the barrier islands and mainland coast and along the margins of bays and bayous (BOEM, 2017). The 30-day OSRA modeling (**Table 4**) indicates nearshore waters and embayments from Calhoun County, Texas, to Plaquemines Parish, Louisiana could be affected within 30 days (1 to 2% conditional probability).

If a spill did reach a prehistoric site along these shorelines, it could coat fragile artifacts or site features and compromise the potential for radiocarbon dating of organic materials (other dating methods are available, and it is possible to decontaminate an oiled sample for radiocarbon dating). Coastal prehistoric sites could also be damaged by spill cleanup operations (e.g., by destroying fragile artifacts and disturbing the provenance of artifacts and site features).

C.7 Coastal Habitats and Protected Areas

Coastal habitats in the northeastern Gulf of America that may be affected by oil and gas activities are described by BOEM (2017) and by Mendelssohn et al (2017). Coastal habitats inshore of the project area include barrier beaches and dunes, wetlands, oyster reefs, and submerged seagrass beds. Generally, most of the northeastern Gulf is fringed by barrier beaches, with wetlands, oyster reefs and/or submerged seagrass beds occurring in sheltered areas behind the barrier islands and in estuaries.

Due to the distance from shore, the only IPF associated with routine activities in the project area that potentially may affect beaches and dunes, wetlands, oyster reefs, seagrass beds, coastal wildlife refuges, wilderness areas, or any other managed or protected coastal area is support vessel traffic from support bases at Port Fourchon and Galliano, Louisiana that are not in wildlife refuges or wilderness areas. Potential impacts of support vessel traffic are addressed briefly below.

The only other IPF of relevance for coastal habitats and protected areas is an accidental large oil spill. A small fuel spill in the project area would not affect coastal habitats, as the project area is 185 statute miles (298 km) from the nearest shoreline (Louisiana). As explained in **Section A.9.1**, a small fuel spill would not be expected to make landfall or reach coastal waters prior to dissipating. These IPFs with potential impacts listed in **Table 2** are discussed below.

Impacts of Support Vessel Traffic

Support operations, including crew boats and supply boats as detailed in EP Section L, may have a minor incremental impact on barrier beaches and dunes, wetlands, oyster reefs and protected areas. Over time, with a large number of vessel trips, vessel wakes can erode shorelines along

inlets, channels, and harbors, resulting in localized land loss. Impacts to barrier beaches and dunes, wetlands, oyster reefs and protected areas will be minimized by following the speed and wake restrictions in harbors and channels.

Support operations, including crew boats and supply boats are not anticipated to have a significant impact on submerged seagrass beds. While submerged seagrass beds could be uprooted, scarred, or lost due to direct contact from vessels, use of navigation channels and adherence to local requirements and implemented programs will decrease the likelihood of impacts to these resources (BOEM, 2017).

Impacts of a Large Oil Spill

Potential spill impacts on coastal habitats are discussed by BOEM (2017; 2023a,b). Coastal habitats inshore of the project area include barrier beaches and dunes, wetlands, oyster reefs and submerged seagrass beds. For this EP, there are no unique site-specific issues with respect to coastal habitats.

The 30-day OSRA modeling (**Table 4**) indicates nearshore waters and embayments from Calhoun County, Texas, to Plaquemines Parish, Louisiana could be affected within 30 days (1 to 2% conditional probability).

NWRs and other protected areas along the coast are discussed in BOEM (2017) and Chevron’s ROSRP. Coastal and near-coastal wildlife refuges, wilderness areas, and state and national parks within the geographic range of the potential shoreline contacts based on the 30-day OSRA model (**Table 4**) are presented in **Table 8**. The level of impacts from oil spills on coastal habitats depends on many factors, including the oil characteristics, the geographic location of the landfall, and the weather and oceanographic conditions at the time of the spill (BOEM, 2017).

Table 8. Wildlife refuges, wilderness areas, and state and national parks within the geographic range of the potential shoreline contacts after 30 days of a hypothetical spill from Launch Area C049 based on the 30-day OSRA model.

County or Parish, State	Wildlife Refuge, Wilderness Area, or State/National Park
Calhoun, TX	Aransas National Wildlife Refuge
	Chester Island Bird Sanctuary
	Guadalupe Delta Wildlife Management Area
	Matagorda Island Wildlife Management Area
	Welder Flats Wildlife Management Area
Matagorda, TX	Big Boggy National Wildlife Refuge
	Chamber Park
	Matagorda Bay Nature Park
	Oyster Lake Park
	San Bernard National Wildlife Refuge
	West Moring Dock Park
Brazoria, TX	Brazoria National Wildlife Refuge
	Christmas Bay Coastal Preserve
	Justin Hurst Wildlife Management Area
	San Bernard National Wildlife Refuge
Galveston, TX	Anahuac National Wildlife Refuge
	Apfell Park

Table 8. (Continued).

County or Parish, State	Wildlife Refuge, Wilderness Area, or State/National Park
	Bolivar Flats Shorebird Sanctuary
	Fort Travis Seashore Park
	Galveston Island State Park
	Horseshoe Marsh Bird Sanctuary
	Mundy Marsh Bird Sanctuary
	R. A. Apffel Park
	Seawolf Park
Jefferson, TX	McFaddin National Wildlife Refuge
	Sea Rim State Park
	Texas Point National Wildlife Refuge
Cameron, LA	Peveto Woods Sanctuary
	Rockefeller Wildlife Refuge
	State Wildlife Refuge
Vermillion, LA	Paul J. Rainey Wildlife Sanctuary
	Rockefeller Wildlife Reserve
	State Wildlife Refuge
Terrebonne, Louisiana	Isles Dernieres Barrier Islands Refuge
	Pointe aux Chenes Wildlife Management Area
Plaquemines, Louisiana	Breton National Wildlife Refuge
	Delta National Wildlife Refuge
	Pass a Loutre Wildlife Management Area

Coastal wetlands are highly sensitive to oiling and can be significantly affected because of the inherent toxicity of hydrocarbon and non-hydrocarbon components of the spilled substances (Beazley et al., 2012; Lin and Mendelssohn, 2012; Mendelssohn et al., 2012). Numerous variables such as oil concentration and chemical composition, vegetation type and density, season or weather, pre-existing stress levels, soil types, and water levels may influence the impacts of oil exposure on wetlands. Impacts to slightly oiled vegetation are considered short term and reversible as recent studies suggest that they will experience plant die-back, followed by recovery without replanting (BOEM, 2012a). Vegetation exposed to oil that persists in wetlands could take years to recover (BOEM, 2017). Vegetation coated with oil experiences the highest mortality rates due to decreased photosynthesis (BOEM, 2012a). A review of the literature and new studies indicated that oil spill impacts to seagrass beds are often limited and may be limited to when oil is in direct contact with these plants (Fonseca et al., 2017). Entrained oil within the sediments of a submerged vegetation area may pose the risk of periodic re-releases of oil in the area, causing potential secondary impacts to the localized area (BOEM, 2023). In addition to the direct impacts of oil, cleanup activities in marshes may accelerate rates of erosion and retard recovery rates (BOEM, 2017). Impacts associated with an extensive oiling of coastal wetland habitat from a large oil spill are expected to be significant.

C.8 Socioeconomic and Other Resources

C.8.1 Recreational and Commercial Fishing

Potential impacts to recreational and commercial fishing were assessed by BOEM (2017). The main commercial fishing activity in deep waters of the northern Gulf of America is pelagic

longlining for tunas, swordfishes, and other billfishes (Continental Shelf Associates, 2002; Beerkircher et al., 2009). Pelagic longlining has occurred historically in the project area, primarily during spring and summer seasons. In August 2000, the federal government closed two areas, outside the project area, in the northeastern Gulf of America to longline fishing (65 FR 47214).

Longline gear consists of monofilament line deployed from a moving vessel and generally allowed to drift for 4 to 5 hours (Continental Shelf Associates, 2002). As the mainline is put out, baited leaders and buoys are clipped in place at regular intervals. It takes 8 to 10 hours to deploy a longline and about the same time to retrieve it. Longlines are often set near oceanographic features such as fronts or downwellings, with the aid of sophisticated on-board temperature sensors, depth finders, and positioning equipment. Vessels typically are 10 to 30 m (33 to 98 ft) long, and their fishing trips last from about 1 to 3 weeks.

It is unlikely that any commercial fishing activity other than longlining occurs at or near the project area. Benthic species targeted by commercial fishers occur predominantly on the upper continental slope, well inshore of the project area. Royal red shrimp (*Pleoticus robustus*) are caught by trawlers in water depths of about 250 to 550 m (820 to 1,804 ft) (Stiles et al., 2007). Tilefishes (primarily *Lopholatilus chamaeleonticeps*) are caught by bottom longlining in water depths from about 165 to 450 m (540 to 1,476 ft) (Continental Shelf Associates, 2002).

Most recreational fishing activity in the region occurs in water depths <200 m (656 ft) (Continental Shelf Associates, 1997; 2002; Keithly and Roberts, 2017). In deeper water, the main attraction to recreational fishers would be petroleum platforms offshore Texas and Louisiana. Due to the distance from shore, it is unlikely that recreational fishing activity is occurring in the project area.

The only IPFs associated with routine operations that potentially may affect fishing are drilling rig presence, which may present an entanglement risk for pelagic longlining. Two types of potential accidents (a small fuel spill and a large oil spill) are the other IPFs of relevance. These IPFs with potential impacts listed in **Table 2** are discussed below.

Impacts of Drilling Rig Presence, Marine Sound, and Lights

There is a slight possibility of pelagic longlines drifting into and becoming entangled in the drilling rig. For example, in January 1999, a portion of a pelagic longline snagged on the acoustic Doppler current profiler of a drillship working in the Gulf of America (Continental Shelf Associates, 2002) and the line was removed without incident. Generally, longline fishers use radar and are aware of offshore structures and ships when placing their sets. Therefore, little or no impact on pelagic longlining is expected.

Because it is unlikely that any recreational fishing activity is occurring in the project area, no adverse impacts are anticipated. Other rig-related factors such as marine sound and lights are not relevant IPFs to commercial or recreational fishing.

Impacts of a Small Fuel Spill

The probability of a fuel spill is expected to be minimized by Chevron's preventative measures during routine operations, including fuel transfer. In the unlikely event of a spill, implementation of Chevron's ROSRP is expected to potentially mitigate and reduce the potential for impacts. EP Section H provides details on spill response measures. Given the open ocean location of the

project area, the duration of a small spill would be brief and opportunity for impacts to fishing activities would be minimal.

Pelagic longlining activities in the project area, if any, could be interrupted in the event of a small fuel spill. The area of the sea surface with diesel fuel on it would range from 0.5 to 5 ha (1.2 to 12 ac), depending on sea state and weather conditions (see **Section A.9.1**). Fishing activities could be interrupted due to the activities of response vessels operating in the project area. A small fuel spill would not affect coastal water quality because the spill would not be expected to make landfall or reach coastal waters prior to dissipating (see **Section A.9.1**).

Impacts of a Large Oil Spill

Potential spill impacts on fishing activities are discussed by BOEM (2017; 2023a,b). For this EP, there are no unique site-specific issues with respect to this activity.

Pelagic longlining activities in the project area and other fishing activities in the northern Gulf of America could be interrupted in the event of a large oil spill. A spill may or may not result in fishery closures, depending on the duration of the spill, the oceanographic and meteorological conditions at the time of the spill, and the effectiveness of spill response measures. The *Deepwater Horizon* incident provides information about the maximum potential extent of fishery closures in the event of a large oil spill in the Gulf of America (NMFS, 2010a). At its peak on 12 July 2010, closures encompassed 217,821 km² (84,101 mi²), or 34.8% of the U.S. Gulf of America EEZ.

According to BOEM (2012a; 2017), the potential impacts on commercial and recreational fishing activities from an accidental oil spill are anticipated to be minimal because the potential for oil spills is very low, the most typical events are small and of short duration, and the effects are so localized that fishers are typically able to avoid the affected area. Fish populations may be affected by an oil spill event should it occur, but they would be primarily affected if the oil reaches the productive shelf and estuarine areas where many fishes spend a portion of their life cycle (BOEM, 2012a). The probability of an offshore spill affecting these nearshore environments is also low. Should a large oil spill occur, economic impacts on commercial and recreational fishing activities would likely occur, but are difficult to predict because impacts would differ by fishery and season (BOEM, 2016b).

C.8.2 Public Health and Safety

There are no IPFs associated with routine operations that are expected to affect public health and safety. A small fuel spill would be unlikely to cause any impacts on public health and safety because it would affect only a small area of the open ocean 185 statute miles (298 km) from the nearest shoreline, and nearly all of the diesel fuel would evaporate or disperse naturally within 24 hours (see **Section A.9.1**). Impacts of a large oil spill are addressed below.

Impacts of a Large Oil Spill

In the event of a large spill from a blowout, the main safety and health concerns are those of the offshore personnel involved in the incident and those responding to the spill. Once released into the water column, crude oil weathers rapidly (National Research Council, 2003a). Depending on many factors such as spill rate and duration, the physical/chemical characteristics of the oil, meteorological, and oceanographic conditions at the time, and the effectiveness of spill

response measures, weathered oil may remain present on the sea surface and reach coastal shorelines.

Based on data collected during the *Deepwater Horizon* incident, the health risks resulting from a large oil spill appear to be minimal (Centers for Disease Control and Prevention, 2010). Health risks for spill responders and wildlife rehabilitation workers responding to a major oil spill are similar to the health risks incurred by response personnel during any large-scale emergency or disaster response (U.S. Department of Homeland Security, 2014), which includes the following:

- Possible accidents associated with response equipment;
- Hand, shoulder, or back pain, along with scrapes and cuts;
- Itchy or red skin or rashes due to potential chemical exposure;
- Heat or cold stress depending upon the working environment; and
- Possible upper respiratory symptoms due to potential dust inhalation, allergies, or potential chemical exposure.

Krishnamurthy et al. (2019) identified that exposure to both crude oil and oil dispersant among USCG spill responders during the *Deepwater Horizon* incident was more strongly associated with the suite of acute neurological symptoms that were evaluated than was exposure to oil alone. Those acute neurological symptoms noted in 1 to 3% of responders surveyed included headaches, lightheadedness/dizziness, difficulty concentrating, numbness/tingling sensation, blurred/double vision, and memory loss/confusion. Krishnamurthy et al. (2019) did conduct sensitivity analyses to exclude responders in the highest environmental heat categories and responders with relevant pre-existing conditions due to the symptoms being similar to heat stress.

McGowan et al. (2017) found approximately 1% of responders surveyed were still experiencing symptoms of coughing, wheezing, tightness in chest, shortness of breath, burning in nose, throat, and lungs, burning eyes, itching eyes, and skin irritation within 30 days of the 2011 to 2013 study (1 to 3 years after the oil spill cleanup response).

C.8.3 Employment and Infrastructure

There are no IPFs associated with routine operations that are expected to affect employment and infrastructure. The project involves drilling with support from existing shorebase facilities in Louisiana. No new or expanded facilities will be constructed, and no new employees are expected to move permanently into the area. The project will have a negligible impact on socioeconomic conditions such as local employment, existing offshore and coastal infrastructure (including major sources of supplies, services, energy, and water), and minority and lower income groups. A small fuel spill that dissipates within a few days would have little or no economic impact as the spill response would use existing facilities, resources, and personnel. Impacts of a large oil spill are addressed below.

Impacts of a Large Oil Spill

Potential socioeconomic impacts of an oil spill are discussed by BOEM (2017). For this EP, there are no unique site-specific issues with respect to employment and coastal infrastructure. A large spill could cause economic impacts in several ways: it could result in extensive fishery closures that put fishermen out of work; it could result in temporary employment as part of the response effort (including the establishment of spill response staging areas); it could result in adverse

publicity that affects employment in coastal recreation and tourism industries; and it could result in suspension of OCS drilling activities, including service and support operations that are an important part of local economies.

Non-market effects such as traffic congestion, strains on public services, shortages of commodities or services, and disruptions to the normal patterns of activities or expectations could also occur in the short-term. These negative, short-term social and economic consequences of a spill are expected to be modest in terms of projected cleanup expenditures and the number of people employed in cleanup and remediation activities (BOEM, 2017). Net employment impacts from a spill would not be expected to exceed 1% of baseline employment in any given year (BOEM, 2017).

C.8.4 Recreation and Tourism

There are no known recreational uses of the project area. Recreational resources and tourism in coastal areas would not be affected by any routine activities due to the distance from shore. Compliance with NTL BSEE-2015-G03 is intended to minimize the chance of trash or debris being lost overboard from the drilling rig and subsequently washing up on beaches. A small fuel spill in the project area would be unlikely to affect recreation and tourism because, as explained in **Section A.9.1**, it would not be expected to make landfall or reach coastal waters prior to dispersing naturally.

Impacts of a Large Oil Spill

Potential impacts of an oil spill on recreation and tourism are discussed by BOEM (2017; 2023). For this EP, there are no unique site-specific issues with respect to these impacts.

Impacts on recreation and tourism would vary depending on the duration of the spill and its fate, including the effectiveness of response measures. A large spill that reached coastal waters and shorelines could adversely affect recreation and tourism by contaminating beaches and wetlands, resulting in negative publicity that encourages people to stay away. The 30-day OSRA modeling (**Table 4**) indicates nearshore waters and embayments from Calhoun County, Texas, to Plaquemines Parish, Louisiana could be affected within 30 days (1 to 2% conditional probability).

According to BOEM (2017), should an oil spill occur and contact a beach area or other recreational resource, it could cause some disruption during the impact and cleanup phases of the spill. In the unlikely event that a spill occurs that is sufficiently large to affect large areas of the coast and, through public perception, have effects that reach beyond the damaged area, effects to recreation and tourism could be significant (BOEM, 2012a).

C.8.5 Land Use

Land use along the northern Gulf Coast is discussed by BOEM (2017; 2023a,b). There are no routine IPFs that potentially may affect land use. The project will use existing onshore support facilities in Louisiana where land use is industrial. The project will not involve any new construction or changes to existing land use and, therefore, will not have any impacts. Levels of boat and helicopter traffic as well as demand for goods and services including scarce coastal resources, will represent a small fraction of the level of activity occurring at the shorebases.

A large oil spill is the only relevant IPF. A small fuel spill should not have any impacts on land use, as the response would be staged out of existing shorebases and facilities.

Impacts of a Large Oil Spill

The initial response for a large oil spill would be staged out of existing facilities, with no expected effects on land use. A large spill could have limited temporary impacts on land use along the coast if additional staging areas were needed. For example, during the *Deepwater Horizon* incident, temporary staging areas were established in Louisiana, Mississippi, Alabama, and Florida for spill response and cleanup efforts. In the event of a large spill in the project area, similar temporary staging areas could be needed. These areas would eventually return to their original use as the response is demobilized. It is not expected that a large oil spill and subsequent cleanup would substantially reduce available space in nearby landfills or decrease their usable life (BOEM, 2014a).

An accidental oil spill is not likely to significantly affect land use and coastal infrastructure in the region, in part because an offshore spill would have a small probability of contacting onshore resources. BOEM (2016b) states that landfill capacity would probably not be an issue at any phase of an oil spill event or the long-term recovery. In the case of the *Deepwater Horizon* incident and response, the USEPA reported that existing landfills receiving oil spill waste had plenty of capacity to handle waste volumes; the wastes that were disposed of in landfills represented <7% of the total daily waste normally accepted at these landfills (USEPA, 2016).

C.8.6 Other Marine Uses

The project area is not located within any USCG-designated fairway, shipping lane, or Military Warning Area. Chevron intends to comply with BOEM requirements and lease stipulations to avoid impacts on uses of the area by military vessels and aircraft. The site clearance letters for the proposed wellsites (GEMS, 2025a,b) reported numerous pieces of existing infrastructure in the survey area.. A total of eight wells, 29 bulk oil pipelines, four umbilicals, and a water line are found within 610 m (2,000 ft) of the proposed wellsite (GEMS, 2025a,b).

There are no IPFs from routine project activities that are likely to affect other marine uses of the project area. A large oil spill is the only relevant IPF. A small fuel spill would not have any impacts on other marine uses because spill response activities would be mainly within the project area and the duration would be brief.

Impacts of a Large Oil Spill

A large accidental spill would be unlikely to significantly affect shipping or other marine uses. The project area is not located within any USCG-designated fairway, shipping lane, or Military Warning Area. In the event of a large spill requiring numerous response vessels, coordination would be required to manage the vessel traffic for safe operations. Chevron and its contractors intend to comply with BOEM requirements and lease stipulations to avoid impacts on uses of the area by military vessels and aircraft.

C.9 Cumulative Impacts⁵

Prior Studies. BOEM prepared a multi-lease sale EIS in which it analyzed the environmental impact of activities that might occur in the multi-lease sale area. The level and types of activities planned in Chevron’s EP are within the range of activities described and evaluated by BOEM in the 2024 to 2029 Programmatic EIS for the OCS Oil and Gas Leasing Program (BOEM, 2023a) and the 2017 to 2022 Programmatic EIS for the OCS Oil and Gas Leasing Program (BOEM, 2016a), and the Final Programmatic EIS for Gulf of Mexico OCS Oil and Gas Lease Sales 2017 to 2022 (BOEM, 2017). Past, present, and reasonably foreseeable activities were identified in these documents, which are incorporated by reference. The proposed action should not result in any additional impacts beyond those evaluated in the multi-lease sale and Final EISs (BOEM, 2012a; 2013; 2014a; 2015; 2016b; 2017; 2023a,b).

Description of Activities Reasonably Expected to Occur in the Vicinity of Project Area. Other exploration and development activities may occur in the vicinity of the project area but Chevron does not anticipate other projects beyond the types analyzed in the lease sale and Supplemental EISs (BOEM, 2012a; 2013; 2014a; 2015; 2016b; 2017; 2023a,b).

Cumulative Impacts of Planned Actions. The BOEM (2017) Final EIS included a discussion of cumulative impacts, which analyzed the incremental environmental and socioeconomic impacts of the 10 proposed lease sales, in addition to all activities (including non-OCS activities) projected to occur from past, proposed, and future lease sales. The EIS considered exploration, delineation, and development wells; platform installation; service vessel trips; and oil spills. The EIS examined the potential cumulative effects on each specific resource for the entire Gulf of America.

The level and type of activity proposed in Chevron’s EP are within the range of activities described and evaluated in the recent lease sale EISs. The EIA incorporates and builds on these analyses by examining the potential impacts on physical, biological, and socioeconomic resources from the work planned in Chevron’s EP, in conjunction with the other reasonably foreseeable activities expected to occur in the Gulf of America. For all impacts, the incremental contribution of Chevron’s proposed actions to the analyses in these prior reports are not expected to be significant.

⁵ On May 20, 2022, the National Environmental Policy Act (NEPA) original requirements came into effect and were reinstated by the Council on Environmental Quality (CEQ), which is responsible for Federal agency implementation of NEPA.

D. Environmental Hazards

D.1 Geologic Hazards

The site clearance letters (GEMS, 2025a,b) identified several buried faults that may intersect with the wellbore. See EP Section C for supporting geological and geophysical information.

D.2 Severe Weather

Under most circumstances, weather is not expected to have any effect on the proposed activities. Extreme weather, including high winds, strong currents, and large waves, was considered in the design criteria for the drilling rig selected for this project. High winds and limited visibility during a severe storm could disrupt support activities (vessel and helicopter traffic) and make it necessary to implement contingency plans to suspend some activities on the drilling rig for safety reasons until the storm or weather event passes. From 2011 to 2024, 22 tropical storms and/or hurricanes have shut down oil and gas activities in the Gulf of America (BSEE, 2024b). Damage was minimal from the storms in 2017 to 2023, and only Hurricane Ida in 2021 caused an accidental release from a ruptured pipeline and wellhead off the Louisiana coastline (BOEM, 2023b).

In the event of severe weather, guidance as outlined in Chevron's and/or Chevron's drilling contractor's site-specific Environmental Emergency Plan, its site-specific hurricane preparation checklist, and the Gulf of America Region Severe Weather Contingency Plan would be adhered to.

D.3 Currents and Waves

Meteorology and physical oceanography conditions such as sea states, wind speed, ocean currents, etc. will be continuously monitored. Under most circumstances, physical oceanographic conditions are not expected to have any effect on the proposed activities. Strong currents (e.g., caused by Loop Current eddies and intrusions) and large waves were considered in the design criteria for the drilling rig selected for this project. High waves during a severe storm could disrupt support activities (i.e., vessel and helicopter traffic), and risks to the drilling program brought on by such conditions would be closely monitored and managed by the team managing the project. In some cases, it may be necessary to suspend some activities on the drilling rig for safety reasons until the storm or weather event passes.

E. Alternatives

No formal alternatives were evaluated in the EIA for the proposed project. However, various technical and operational options, including the location of the wellsite and the selection of a potential drilling unit, were considered by Chevron. The activity being proposed is the result of a rigorous screening and right-scoping process. It was selected as the best design candidate to reduce risk and optimize deliverability, chosen from numerous options with varying well locations, trajectories, construction designs, and drilling strategies, amongst other variables.

F. Mitigation Measures

The proposed program includes numerous processes and actions that are intended to mitigate potential impact on the environment. The project is expected to comply with applicable federal, state, and local requirements as well as permit conditions of approval concerning protected species, air pollutant emissions, discharges to water, and waste management. See EP Section K for further information.

G. Consultation

No persons or agencies other than those listed as Preparers (**Section H**) were consulted during the preparation of the EIA.

H. Preparers

The EIA was prepared by CSA Ocean Sciences Inc. Contributors included:

- Jenna O'del (Project Scientist);
- John M. Tiggelaar II (Project Scientist);
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