

UNITED STATES GOVERNMENT
MEMORANDUM

July 21, 2026

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

Subject: Public Information copy of plan

Control #	-	S-08229
Type	-	Supplemental Development Operations Coordinations Document
Lease(s)	-	OCS-G18753 Block - 677 Walker Ridge Area OCS-G21245 Block - 678 Walker Ridge Area
Operator	-	Union Oil Company of California
Description	-	Production of wells, installation of lease term jumpers
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/IS001	G21245/WR/678	5663 FNL, 5438 FWL	G21245/WR/678
WELL/IS002	G21245/WR/678	4957 FNL, 173 FEL	G18753/WR/677
WELL/IS003	G21245/WR/678	2035 FNL, 6535 FWL	G21245/WR/678
WELL/PS001	G21245/WR/678	4613 FNL, 177 FEL	G18753/WR/677
WELL/PS002	G21245/WR/678	4854 FNL, 206 FEL	G18753/WR/677
WELL/PS003	G21245/WR/678	4637 FNL, 102 FEL	G18753/WR/677
WELL/PS004	G21245/WR/678	4851 FNL, 121 FEL	G18753/WR/677
WELL/PS005	G21245/WR/678	4842 FNL, 293 FEL	G18753/WR/677
WELL/PS006	G21245/WR/678	4836 FNL, 379 FEL	G18753/WR/677
WELL/PS007	G21245/WR/678	4585 FNL, 360 FEL	G18753/WR/677
WELL/PS008	G18753/WR/677	4600 FNL, 271 FEL	G18753/WR/677
WELL/PS009	G18753/WR/677	4924 FNL, 261 FWL	G21245/WR/678

SUPPLEMENTAL UNIT DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

Walker Ridge Blocks 634, 677, 678
Leases OCS-G 18745, 18753, 21245
Walker Ridge Block 678 Unit
(Unit Agreement No. 754307014)

St. Malo Development Field

Affected States: Louisiana

Estimated Startup Date: 2026

SUBMITTED BY:

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Covington, Louisiana 70433
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TABLE OF CONTENTS

SECTION 1 PLAN CONTENTS	1
1.1 PLAN INFORMATION.....	1
1.2 LOCATION.....	1
1.3 SAFETY AND POLLUTION PREVENTION FEATURES	2
1.4 STORAGE TANKS AND PRODUCTION VESSELS	2
1.5 POLLUTION PREVENTION MEASURES	2
1.6 ADDITIONAL MEASURES.....	2
1.7 COST RECOVERY FEE.....	2
SECTION 2 GENERAL INFORMATION.....	3
2.1 APPLICATIONS AND PERMITS.....	3
2.2 DRILLING FLUIDS.....	3
2.3 PRODUCTION.....	3
2.4 OIL CHARACTERISTICS.....	3
2.5 NEW OR UNUSUAL TECHNOLOGY.....	3
2.6 BONDING STATEMENT	3
2.7 OIL SPILL FINANCIAL RESPONSIBILITY (OSFR).....	3
2.8 DEEPWATER WELL CONTROL STATEMENT.....	4
2.9 SUSPENSION OF PRODUCTION.....	4
2.10 BLOWOUT SCENARIO AND WORST CASE DISCHARGE CALCULATIONS	4
SECTION 3 GEOLOGICAL AND GEOPHYSICAL INFORMATION	5
3.1 GEOLOGICAL DESCRIPTION	5
3.2 STRUCTURE CONTOUR MAPS	5
3.3 INTERPRETED SEISMIC LINES	5
3.4 GEOLOGICAL STRUCTURE CROSS-SECTIONS	5
3.5 SHALLOW HAZARDS REPORT	5
3.6 SHALLOW HAZARDS ASSESSMENT	5
3.7 HIGH-RESOLUTION SEISMIC LINES	5
3.9 TIME VS DEPTH TABLES	5
SECTION 4 HYDROGEN SULFIDE INFORMATION.....	6

4.1 CONCENTRATION	6
4.2 CLASSIFICATION.....	6
4.3 H ₂ S CONTINGENCY PLAN	6
4.4 MODELING REPORT.....	6
SECTION 5 MINERAL RESOURCE CONSERVATION INFORMATION.....	7
5.1 TECHNOLOGY & RESERVOIR ENGINEERING PRACTICES AND PROCEDURES.....	7
5.2 TECHNOLOGY AND RECOVERY PRACTICES AND PROCEDURES	7
5.3 RESERVOIR DEVELOPMENT.....	7
SECTION 6 BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION.....	8
6.1 DEEPWATER BENTHIC COMMUNITIES.....	8
6.2 TOPOGRAPHIC FEATURES (BANKS)	8
6.3 TOPOGRAPHIC FEATURES STATEMENT (SHUNTING).....	8
6.4 LIVE-BOTTOMS (PINNACLE TREND FEATURES)	8
6.5 LIVE BOTTOMS (LOW RELIEF).....	8
6.6 POTENTIALLY SENSITIVE BIOLOGICAL FEATURES	8
6.7 THREATENED AND ENDANGERED SPECIES, CRITICAL HABITAT AND MARINE MAMMAL INFORMATION.....	8
6.8 ARCHAEOLOGICAL REPORT	11
6.9 AIR AND WATER QUALITY INFORMATION	11
6.10 SOCIOECONOMIC INFORMATION.....	11
SECTION 7 WASTES AND DISCHARGES INFORMATION.....	12
7.1 PROJECTED GENERATED WASTES	12
7.2 MODELING REPORT.....	12
SECTION 8 AIR EMISSIONS INFORMATION	13
8.1 SUMMARY INFORMATION	13
SECTION 9 OIL SPILL INFORMATION	14
9.1 OIL SPILL RESPONSE PLANNING	14
9.2 SPILL RESPONSE SITES	14
9.3 OSRO INFORMATION	14
9.4 WORST-CASE DISCHARGE SCENARIO DETERMINATION	15
9.5 OIL SPILL RESPONSE DISCUSSION.....	15
SECTION 10 ENVIRONMENTAL MONITORING INFORMATION.....	24
10.1 MONITORING SYSTEMS.....	24

10.2 INCIDENTAL TAKES	24
10.3 FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY	25
SECTION 11 LEASE STIPULATIONS INFORMATION.....	26
11.1 MARINE PROTECTED SPECIES	26
SECTION 12 ENVIRONMENTAL MITIGATION MEASURES INFORMATION.....	28
12.1 MEASURES TAKEN TO AVOID, MINIMIZE, AND MITIGATE IMPACTS	28
12.2 INCIDENTAL TAKES	28
SECTION 13 RELATED FACILITIES AND OPERATIONS INFORMATION	29
13.1 RELATED OCS FACILITIES AND OPERATIONS	29
13.2 TRANSPORTATION SYSTEM.....	29
13.3 PRODUCED LIQUID HYDROCARBONS TRANSPORTATION VESSELS	29
SECTION 14 SUPPORT VESSELS AND AIRCRAFT INFORMATION	30
14.1 GENERAL	30
14.2 DIESEL OIL SUPPLY VESSELS	30
14.3 DRILLING FLUID TRANSPORTATION	30
14.4 SOLID AND LIQUID WASTE TRANSPORTATION	30
14.5 VICINITY MAP.....	30
SECTION 15 ONSHORE SUPPORT FACILITIES INFORMATION	31
15.1 GENERAL	31
15.2 SUPPORT BASE CONSTRUCTION OR EXPANSION	31
15.3 SUPPORT BASE CONSTRUCTION OR EXPANSION TIMETABLE.....	31
15.4 WASTE DISPOSAL.....	31
15.4 WASTE DISPOSAL.....	31
SECTION 16 COASTAL ZONE MANAGEMENT (CZM) INFORMATION.....	32
SECTION 17 ENVIRONMENTAL IMPACT ANALYSIS (EIA).....	33
SECTION 18 ADMINISTRATIVE INFORMATION	34
18.1 EXEMPTED INFORMATION DESCRIPTION	34
18.2 BIBLIOGRAPHY	34

SECTION ATTACHMENTS

Section 1	Plan Contents
1-A	OCS Plan Information Form
1-B	Well Location Plat
1-C	Pay.gov Receipt
Section 7	Wastes and Discharges Information
7-A	Waste You Will Generate, Treat and Downhole Dispose or Discharge to the GOM
Section 8	Air Emissions Information
8-A	Emissions Worksheets
Section 14	Support Vessels and Aircraft Information
14-A	Vicinity Map
Section 17	Environmental Impact Analysis (EIA)
17-A	Environmental Impact Analysis (EIA)

SECTION 1

PLAN CONTENTS

1.1 PLAN INFORMATION

Union Oil Company of California (Unocal), an affiliate of Chevron U.S.A., Inc. (Chevron). Unocal is the designated operator of Leases OCS-G 18745, 18753, and 21245, Walker Ridge (WR) Blocks 634, 677 and 678, which are part of the Walker Ridge Block 678 Unit (Agreement No. 754307014). The St. Malo field is comprised of subsea wells, operated by Unocal, and tied back to the Chevron operated Jack and St. Malo Floating Production Unit (JSM FPU) in WR 718, Right-of-Use and Easement OCS-G 30350.

Numerous Exploration Plans (EP) and Development Operations Coordination Documents (DOCD) have previously been approved for the St. Malo development field.

Under this Supplemental DOCD, Unocal proposes to provide for the following:

- 1) Provide for the production of one (1) new producer well (PS009), API No. 608124016200, with a surface location in WR 678 and a bottomhole location in WR 677; provide for the injection of one (1) new injector well (IS002), API No. 608124016100, with a surface and bottomhole location in WR 677. The PS009 well and the IS002 well will be drilled and completed under Supplemental EP, Control No. S-8214.
- 2) Provide for the installation of one (1) production jumper, three (3) flowline jumpers, one (1) injector jumper, one (1) suction pile and one (1) manifold.

Further, Unocal proposes to update the air emissions to include miscellaneous well intervention operations for the existing wells with surface locations in WR 677 and WR 678.

These development operations are in approximately 7,000 feet of water. The pipelines will be installed using dynamically positioned offshore construction/pipelay vessel and support vessels.

There are no drilling activities proposed in this DOCD. Further, the operations proposed will not utilize pile-driving, nor is Unocal proposing any new pipelines expected to make landfall.

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

1.2 LOCATION

Well Location Plats depicting the surface locations of the proposed wells and water depths are included as **Attachment 1-B**.

No anchors are associated with the activities proposed in this plan.

1.3 SAFETY AND POLLUTION PREVENTION FEATURES

No drilling operations are proposed in this plan. Safety of personnel and protection of the environment during the proposed operations is one of the primary concerns of Unocal. Unocal mandates regulatory compliance with the contractors and vendors associated with the proposed operations as follows:

The Bureau of Ocean Energy Management (BOEM) mandates that the operations described in this DOCD comply with well control, pollution prevention, construction, welding procedures, and training described in the Bureau of Safety and Environmental Enforcement (BSEE) regulations 30 CFR 250 C, D, E, O and S; and as further clarified by BSEE Notice to Lessees.

BSEE conducted periodic announced and unannounced onsite inspections of offshore facilities to confirm operators are complying with lease stipulations, regulatory requirements, approved plans, and other conditions, and complying with pollution prevention requirements. The National Potential Incident of Noncompliance (PINIC) List serves as the baseline for these inspections.

United States Coast Guard (USCG) regulations contained in Title 33 CFR Part 144 mandate that appropriate life rafts, life jackets, ring buoys, etc. be maintained on the facilities at all times. U.S. Environmental Protection Agency (EPA) regulations contained in the NPDES General Permit for Region VI mandate that supervisory and certain designated personnel on board the facility be familiar with the effluent limitations and guidelines for overboard discharges into the receiving waters.

There will be no disposal of equipment, cables, chains, containers, or other materials into offshore waters.

1.4 STORAGE TANKS AND PRODUCTION VESSELS

All storage tanks and production vessels associated with the St. Malo development are located at the Chevron operated JSM FPU located in WR 718.

1.5 POLLUTION PREVENTION MEASURES

These operations do not propose activities for which the State of Florida is an affected state.

1.6 ADDITIONAL MEASURES

Unocal has a robust Health Safety and Environment (HSE) system with a focus on Injury and Incident Free operations. The facility and its operations have been, and will continue to be, the focus of numerous hazard assessments and mitigations to reduce the risk of accidents and incidents, including pollution.

1.7 COST RECOVERY FEE

Documentation of the \$11,130.00 cost recovery fee payment is included as **Attachment 1-C**.

OCS PLAN INFORMATION FORM

General Information									
Type of OCS Plan:		Exploration Plan (EP)	XX	Development Operations Coordination Document (DOCD)					
Company Name: Union Oil Company of California				BOEM Operator Number: 00003					
Address:				Contact Person: Kelley Pisciola					
100 Northpark Boulevard				Phone Number: (281) 698-8519					
Covington, LA 70433				E-Mail Address: kelley.pisciola@iccteam.com					
If a service fee is required under 30 CFR 550.125(a), provide the				Amount paid	\$11,130.00	Receipt No.		2826T371	
Project and Worst Case Discharge (WCD) Information									
Leases OCS-G 18753 / 21245		Areas: Walker Ridge		Blocks: 677 / 678		Project Name: St. Malo			
Objectives	X	Oil		Gas		Sulphur		Salt	Onshore Support Base: Port Fourchon and Galliano, LA
Platform / Well Name: PS008				Total Volume of WCD: 44,785 bbls			API Gravity: 30°		
Distance to Closest Land (Miles): 182 miles				Volume from uncontrolled blowout: 32,335 BOPD					
Have you previously provided information to verify the calculations and assumptions for your WCD?						Yes	XX	No	
If so, provide the Control Number of the EP or DOCD with which this information was provided									
Do you propose to use new or unusual technology to conduct your activities?						Yes	XX	No	
Do you propose to use a vessel with anchors to install or modify a structure?						Yes	XX	No	
Do you propose any facility that will serve as a host facility for deepwater subsea development?						Yes	XX	No	
Description of Proposed Activities and Tentative Schedule (Mark all that apply)									
Proposed Activity				Start Date		End Date		No. of Days	
Installation of lease term jumper pipelines and infrastructure				12/15/2026		01/24/2027		40	
Commence 1st production at well location PS009				04/01/2027		04/01//2049		22 years	
Commence 1st water production at well location IS002				06/01/2027		06/01/2049		22 years	
Future Well Intervention Operations for St. Malo wells surfacing in WR 677/678				2026		2035		365/days/year	
Description of Drilling Rig				Description of Structure					
	Jackup	XX	Drillship		Caisson		Tension leg platform		
	Gorilla Jackup		Platform rig		Fixed platform		Compliant tower		
	Semisubmersible		Submersible		Spar		Guyed tower		
	DP Semisubmersible		Other (Attach description)		Floating production system		Other (Attach description)		
Drilling Rig Name (If known):									
Description of Lease Term Pipelines									
From (Facility/Area/Block)		To (Facility/Area/Block)		Diameter (Inches)		Length (Feet)			
WR 678		WR 678		10.75" OD		120'			
WR 678		WR 678		6.625" OD		109'			
WR 677		WR 677		6.625" OD		60'			
WR 677		WR 678		10.75" OD		70'			
WR 678		WR 678		10.75" OD		137'			

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): PS009				Previously reviewed under an approved EP or DOCD?		☒	Yes	☐	No
Is this an existing well or structure?		☒	Yes	☐	No	If this is an existing well or structure, list the Complex ID or API No.		60-812-40162-00	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						☒	Yes	☐	No
WCD info	For wells, volume of uncontrolled blowout (Bbbls/day): 32,335 BOPD			For structures, volume of all storage and pipelines (Bbbls): 12,450 bbls			API Gravity of fluid		30 degrees
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS OCS-G 21245						OCS OCS		
Area Name	Walker Ridge								
Block No.	678								
Blockline Departures (in feet)	N/S Departure: F <u>N</u> L 4924			N/S Departure: F <u>S</u> L			N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L		
	E/W Departure: F <u>W</u> L 261			E/W Departure: F <u>E</u> L			E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2265381			X:			X: X: X:		
	Y: 9546596			Y:			Y: Y: Y:		
Latitude/ Longitude	Latitude N 26 17 48.922			Latitude			Latitude Latitude Latitude		
	Longitude W 91 05 31.242			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 =					
			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): IS002				Previously reviewed under an approved EP or DOCD?		☒	Yes	☐	No
Is this an existing well or structure?	☒	Yes	☐	No	If this is an existing well or structure, list the Complex ID or API No.		60-812-40161-00		
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						☒	Yes	☐	No
WCD info	For wells, volume of uncontrolled blowout (Bbbls/day): 32,335 BOPD			For structures, volume of all storage and pipelines (Bbbls): 12,450 bbls			API Gravity of fluid		30 deg.
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G 18753			OCS G 21245			OCS OCS		
Area Name	Walker Ridge								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: F <u> N </u> L 4957			N/S Departure: F <u> N </u> L			N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L		
	E/W Departure: F <u> E </u> L 173			E/W Departure: F <u> W </u> L			E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2264947			X:			X: X: X:		
	Y: 9546563			Y:			Y: Y: Y:		
Latitude/ Longitude	Latitude N 26 17 48.657			Latitude			Latitude Latitude Latitude		
	Longitude W 91 05 36.01			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 =					
			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): IS001				Previously reviewed under an approved EP or DOCD?		☒	Yes	☐	No
Is this an existing well or structure?		☐	Yes	☒	No	If this is an existing well or structure, list the Complex ID or API No.		608124013500	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						☒	Yes	☐	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 32,335			For structures, volume of all storage and pipelines (Bbls): 12,450			API Gravity of fluid		30 deg.
	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> N </u> L 5663			N/S Departure: F <u> N </u> L			N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L		
	E/W Departure: F <u> W </u> L 5438			E/W Departure: F <u> W </u> L			E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2270558			X:			X: X: X:		
	Y: 9545857			Y:			Y: Y: Y:		
Latitude/ Longitude	Latitude N 26 17 40.8456			Latitude			Latitude Latitude Latitude		
	Longitude W 91 04 34.4828			Longitude			Longitude Longitude Longitude		
Water Depth (Feet): -6928				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):	
Anchor Radius (if applicable) in feet:				NA				TVD (Feet): TVD (Feet): TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor				
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): IS003				Previously reviewed under an approved EP or DOCD?		X		Yes	No
Is this an existing well or structure?		X	Yes	No	If this is an existing well or structure, list the Complex ID or API No.			60-812-40133-00	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						X		Yes	No
WCD info	For wells, volume of uncontrolled blowout (Bbbls/day): 32,335			For structures, volume of all storage and pipelines (Bbbls): 12,450			API Gravity of fluid		30 deg.
	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> N </u> L 2035			N/S Departure: F <u> N </u> L			N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L		
	E/W Departure: F <u> W </u> L 6535			E/W Departure: F <u> W </u> L			E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2271655			X:			X: X: X:		
	Y: 9549485			Y:			Y: Y: Y:		
Latitude/ Longitude	Latitude N 26 18 16.6098			Latitude			Latitude Latitude Latitude		
	Longitude W 91 04 21.8416			Longitude			Longitude Longitude Longitude		
Water Depth (Feet): -6915				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):	
Anchor Radius (if applicable) in feet:				NA				TVD (Feet): TVD (Feet): TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor				
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): PS001				Previously reviewed under an approved EP or DOCD?		☒	Yes		No
Is this an existing well or structure?		☒	Yes		No	If this is an existing well or structure, list the Complex ID or API No.		608124005700	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						☒	Yes		No
WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): 32,335		For structures, volume of all storage and pipelines (Bbls): 12,450			API Gravity of fluid		30°	
	Surface Location		Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS-G 18753					OCS OCS			
Area Name	Walker Ridge								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: 4,612.53' FNL		N/S Departure:			N/S Departure F __ L N/S Departure F __ L N/S Departure F __ L			
	E/W Departure: 177.04' FEL		E/W Departure:			E/W Departure F __ L E/W Departure F __ L E/W Departure F __ L			
Lambert X-Y coordinates	X: 2,264,942.96'		X:			X: X: X:			
	Y: 9,546,907.47'		Y:			Y: Y: Y:			
Latitude/ Longitude	Latitude: 26° 17' 52.069"		Latitude:			Latitude Latitude Latitude			
	Longitude: -91° 05' 36.002"		Longitude: -			Longitude Longitude Longitude			
Water Depth (Feet): 7,041'			MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):		TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:				N/A					
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor				
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): PS002				Previously reviewed under an approved EP or DOCD?		X	Yes		No
Is this an existing well or structure?		X	Yes		No	If this is an existing well or structure, list the Complex ID or API No. 608124011400			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						X	Yes		No
WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): 32,335		For structures, volume of all storage and pipelines (Bbls): 12,450			API Gravity of fluid		30°	
	Surface Location		Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS-G 18753					OCS OCS			
Area Name	Walker Ridge								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: 4,853.65' FNL		N/S Departure:			N/S Departure F <u> </u> L <u> </u> N/S Departure F <u> </u> L <u> </u> N/S Departure F <u> </u> L <u> </u>			
	E/W Departure: 206' FEL		E/W Departure:			E/W Departure F <u> </u> L <u> </u> E/W Departure F <u> </u> L <u> </u> E/W Departure F <u> </u> L <u> </u>			
Lambert X-Y coordinates	X: 2,264,913.97'		X:			X: X: X:			
	Y: 9,546,666.15'		Y:			Y: Y: Y:			
Latitude/ Longitude	Latitude: 26° 17' 49.684"		Latitude:			Latitude Latitude Latitude			
	Longitude: -91° 05' 36.359"		Longitude:			Longitude Longitude Longitude			
Water Depth (Feet): 7,039'			MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):		TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:			N/A						
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): PS003				Previously reviewed under an approved EP or DOCD?		☒	Yes		No
Is this an existing well or structure?		☒	Yes		No	If this is an existing well or structure, list the Complex ID or API No.		608124005600	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						☒	Yes		No
WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): 32,335		For structures, volume of all storage and pipelines (Bbls): 12,450			API Gravity of fluid		30°	
	Surface Location		Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS-G 18753					OCS OCS			
Area Name	Walker Ridge								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: 4,636.63' FNL		N/S Departure:			N/S Departure F __ L N/S Departure F __ L N/S Departure F __ L			
	E/W Departure: 102.09' FEL		E/W Departure:			E/W Departure F __ L E/W Departure F __ L E/W Departure F __ L			
Lambert X-Y coordinates	X: 2,265,017.91'		X:			X: X: X:			
	Y: 9,546,883.37'		Y:			Y: Y: Y:			
Latitude/ Longitude	Latitude: 26° 17' 51.820"		Latitude:			Latitude Latitude Latitude			
	Longitude: -91° 05' 35.182"		Longitude:			Longitude Longitude Longitude			
Water Depth (Feet): 7,040'			MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):		TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:				N/A					
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor				
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): PS004				Previously reviewed under an approved EP or DOCD?		☒	Yes		No
Is this an existing well or structure?		☒	Yes	☐	No	If this is an existing well or structure, list the Complex ID or API No.		608124005800	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						☒	Yes		No
WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): 32,335		For structures, volume of all storage and pipelines (Bbls): 12,450			API Gravity of fluid		30°	
	Surface Location		Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS-G 18753					OCS OCS			
Area Name	Walker Ridge								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: 4,851.40' FNL		N/S Departure:			N/S Departure F __ L N/S Departure F __ L N/S Departure F __ L			
	E/W Departure: 120.67' FEL		E/W Departure:			E/W Departure F __ L E/W Departure F __ L E/W Departure F __ L			
Lambert X-Y coordinates	X: 2,264,999.33'		X:			X: X: X:			
	Y: 9,546,668.60'		Y:			Y: Y: Y:			
Latitude/ Longitude	Latitude: 26° 17' 49.696"		Latitude:			Latitude Latitude Latitude			
	Longitude: -91° 05' 35.421"		Longitude: -			Longitude Longitude Longitude			
Water Depth (Feet): 7,035'			MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):		TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:				N/A					
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor				
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					
			X:	Y:					

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): PS005				Previously reviewed under an approved EP or DOCD?		☒	Yes		No
Is this an existing well or structure?		☒	Yes	☐	No	If this is an existing well or structure, list the Complex ID or API No.		608124011801	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						☒	Yes		No
WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): 32,335		For structures, volume of all storage and pipelines (Bbls): 12,450			API Gravity of fluid		30°	
	Surface Location		Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS-G 18753					OCS OCS			
Area Name	Walker Ridge								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: 4,841.60' FNL		N/S Departure:			N/S Departure F __ L			
	E/W Departure: 293.05' FEL		E/W Departure:			E/W Departure F __ L			
Lambert X-Y coordinates	X: 2,264,826.95'		X:			X:			
	Y: 9,546,678.4'		Y:			Y: Y: Y:			
Latitude/ Longitude	Latitude: 26° 17' 49.818"		Latitude:			Latitude Latitude Latitude			
	Longitude: -91° 05' 37.313"		Longitude:			Longitude Longitude Longitude			
Water Depth (Feet): 7,034'			MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):
Anchor Radius (if applicable) in feet:			N/A				MD (Feet):		TVD (Feet):
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): PS006				Previously reviewed under an approved EP or DOCD?		☒	Yes	☐	No
Is this an existing well or structure?		☒	Yes	☐	No	If this is an existing well or structure, list the Complex ID or API No.		608124013600	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						☒	Yes	☐	No
WCD info	For wells, volume of uncontrolled blowout (Bbbls/day): 32,335			For structures, volume of all storage and pipelines (Bbbls): 12,450			API Gravity of fluid		30°
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G 18753			OCS G			OCS OCS		
Area Name	WALKER RIDGE								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: F <u> N </u> L 4,836'			N/S Departure: F <u> N </u> L			N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L N/S Departure: F <u> </u> L		
	E/W Departure: F <u> E </u> L 379'			E/W Departure: F <u> W </u> L			E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2,264,741'			X:			X: X: X:		
	Y: 9,546,684'			Y:			Y: Y: Y:		
Latitude/ Longitude	Latitude 26° 17' 50"			Latitude			Latitude Latitude Latitude		
	Longitude -91° 05' 38"			Longitude			Longitude Longitude Longitude		
Water Depth (Feet): 7032'				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):	
Anchor Radius (if applicable) in feet:				NA				TVD (Feet): TVD (Feet): TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor				
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): PS007				Previously reviewed under an approved EP or DOCD?		☒	Yes		No
Is this an existing well or structure?		☒	Yes	☐	No	If this is an existing well or structure, list the Complex ID or API No.		608124012200	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						☒	Yes		No
WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): 32,335		For structures, volume of all storage and pipelines (Bbls): 12,450			API Gravity of fluid		30°	
	Surface Location		Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS-G 18753					OCS OCS			
Area Name	Walker Ridge								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: 4,584.67' FNL		N/S Departure:			N/S Departure F __ L			
	E/W Departure: 360.16' FEL		E/W Departure:			E/W Departure F __ L			
Lambert X-Y coordinates	X: 2,264,759.84'		X:			X:			
	Y: 9,546,935.33'		Y:			Y:			
Latitude/ Longitude	Latitude: 26° 17' 52.37"		Latitude:			Latitude			
	Longitude: -91° 05' 38.0088"		Longitude: -			Longitude			
Water Depth (Feet): 7,025'			MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):
Anchor Radius (if applicable) in feet:			N/A				MD (Feet):		TVD (Feet):
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				
			X:		Y:				

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): PS008				Previously reviewed under an approved EP or DOCD?		X	Yes		No
Is this an existing well or structure?		X	Yes		No	If this is an existing well or structure, list the Complex ID or API No.		608124015100	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						X	Yes		No
WCD info	For wells, volume of uncontrolled blowout (Bbbls/day): 32,335			For structures, volume of all storage and pipelines (Bbbls): 12,450			API Gravity of fluid		30°
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G 18753			OCS G			OCS OCS		
Area Name	WALKER RIDGE								
Block No.	677								
Blockline Departures (in feet)	N/S Departure: F <u> N </u> L 4,600'			N/S Departure: F <u> N </u> L			N/S Departure: F <u> </u> L		
	E/W Departure: F <u> E </u> L 271'			E/W Departure: F <u> E </u> L			E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2,264,849'			X:			X:		
	Y: 9,546,919'			Y:			Y:		
Latitude/ Longitude	Latitude 26° 17' 52'			Latitude			Latitude		
	Longitude -91° 05' 37'			Longitude			Longitude		
Water Depth (Feet): 7,038'				MD (Feet): ,		TVD (Feet):		MD (Feet): MD (Feet): MD (Feet):	
Anchor Radius (if applicable) in feet:				NA				TVD (Feet): TVD (Feet): TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor				
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					
			X =	Y =					

WR633

Y=9,551,520.00'

WR634



NAD27
ZONE 15 NORTH
UTM GRID NORTH
EPSG: 32065

OCS-G-18753
Well No. 001

OCS-G-21245
Well No. PS001,PS002,PS003
PS004,PS005,PS006,PS007, IS002
OCS-G-18753
Well No. PS005,PS008

OCS-G-21245
Well No. 003

OCS-G-21245
Well No. IS003

OCS-G-18753 Well PS009 ST00BP00 FINAL SEAFLOOR LOCATION	
X=	2,265,380.81'
Y=	9,546,596.10'
Lat=	26°17'48.922"N
Lon=	91°05'31.242"W
NAD83	
Lat=	26°17'49.996"N
Lon=	91°05'31.330"W

260.81' F.W.L.

OCS-G-21245
Well No. 002

OCS-G-21245
Well No. IS001

OCS-G-21245
Well No. 001

WR677
OCS-G-18753
UNOCAL

WR678
OCS-G-21245
UNOCAL

NOTES:

1. DP RIG *DEEPWATER CONQUEROR* SPUDDED WELL ON APRIL 04, 2026 INSIDE MARKER BUOY PATTERN. MARKER BUOYS SET BY OCEANEERING ABOARD THE *HARVEY DEEP-SEA* UTILIZING LBL POSITIONING ON AUGUST 12, 2025.
2. FINAL SEAFLOOR LOCATION REPRESENTS THE ARITHMETIC MEAN OF THE LBL INSTALLED MARKER BUOY COORDINATES.
3. NAD83(2011) COORDINATES TRANSFORMED TO NAD27 VIA NADCON 2.1, EQUIVALENT TO "EPSG:1241, NAD27 TO NAD83 (1)" WHERE NAD83(2011) AND NAD83(86) ARE CONSIDERED FUNCTIONALLY THE SAME. GEODETIC COORDINATES COMPUTED FROM GRID XY COORDINATES.
4. THE NUMBER OF SIGNIFICANT FIGURES OF THE COORDINATE VALUES AND DISTANCES SHOWN HEREON IS FOR THE SAKE OF MAINTAINING COMPUTATIONAL PRECISION/INTER CONVERTIBILITY AND SHOULD NOT BE CONSTRUED AS AN EXPRESSION OF ABSOLUTE SPATIAL ACCURACY.

WALKER RIDGE AREA

WR721

Y=9,535,680.00'

WR722

PUBLIC INFORMATION

I, ROBERT M. FROST, HEREBY CERTIFY THAT THE ABOVE FINAL SEAFLOOR LOCATION IS CORRECT.

NOT CERTIFIED UNLESS
SIGNED BY THE SURVEYOR
Robert M. Frost
ROBERT M. FROST
License No. 4573
PROFESSIONAL LAND SURVEYOR
LOUISIANA REGISTRATION No. 4573

Digitally signed by: Robert M. Frost, PLS
Date: 2026.04.14 11:48:23 -0500



OCS-G-18753 Well PS009 ST00BP00
Block 677 - Walker Ridge Area

2,000 0 2,000
U.S. SURVEY FEET (1"=2,000')

PREPARED
BY:



OCEANEERING INTERNATIONAL, INC.
202 STANTON STREET
BROUSSARD, LA 70518
(337) 210-0000
LA Reg. No. 747

JOB: 241565

DRW: M.Quattrochi

DATE: April 14, 2026

CKD: Z. Smith

APP: R. Frost

DOC: 241565-OII-DRW-ASD-001-01

SHEET 1 of 1

REV.
0



NAD27
ZONE 15 NORTH
UTM GRID NORTH
EPSG: 32065

WR633

Y=9,551,520.00'

WR634

OCS-G-21245
Well No. 003

OCS-G-21245
Well No. IS003

OCS-G-18753
Well No. 001

OCS-G-21245
Well No. PS001,PS002,PS003
PS004,PS005,PS006,PS007
OCS-G-18753
Well No. PS005,PS008

OCS-G-21245 Well IS002 ST00BP00 FINAL SEAFLOOR LOCATION	
X=	2,264,947.19'
Y=	9,546,562.93'
Lat=	26°17'48.657"N
Lon=	91°05'36.011"W
NAD83	
Lat=	26°17'49.731"N
Lon=	91°05'36.100"W

172.81' F.E.L.

4,957.07'

OCS-G-21245
Well No. 002

OCS-G-21245
Well No. IS001

OCS-G-21245
Well No. 001

Water Depth: 7,035'
RKB: 101'

WR677

OCS-G-18753

UNOCAL

NOTES:

1. DP RIG *DEEPWATER CONQUEROR* SPUDDED WELL ON MARCH 31, 2026 INSIDE MARKER BUOY PATTERN. MARKER BUOYS SET BY OCEANEERING ABOARD THE *HARVEY BLUE-SEA* UTILIZING LBL POSITIONING ON FEB. 11, 2026.
2. FINAL SEAFLOOR LOCATION REPRESENTS THE ARITHMETIC MEAN OF THE LBL INSTALLED MARKER BUOY COORDINATES.
3. NAD83(2011) COORDINATES TRANSFORMED TO NAD27 VIA NADCON 2.1, EQUIVALENT TO "EPSG:1241, NAD27 TO NAD83 (1)" WHERE NAD83(2011) AND NAD83(86) ARE CONSIDERED FUNCTIONALLY THE SAME. GEODETIC COORDINATES COMPUTED FROM GRID XY COORDINATES.
4. THE NUMBER OF SIGNIFICANT FIGURES OF THE COORDINATE VALUES AND DISTANCES SHOWN HEREON IS FOR THE SAKE OF MAINTAINING COMPUTATIONAL PRECISION/INTER CONVERTIBILITY AND SHOULD NOT BE CONSTRUED AS AN EXPRESSION OF ABSOLUTE SPATIAL ACCURACY.

WR678

OCS-G-21245

UNOCAL

WALKER RIDGE AREA

WR721

Y=9,535,680.00'

WR722

PUBLIC INFORMATION

I, ROBERT M. FROST, HEREBY CERTIFY THAT THE ABOVE FINAL SEAFLOOR LOCATION IS CORRECT.

ROBERT M. FROST
License No. 4573
PROFESSIONAL LAND SURVEYOR
LOUISIANA REGISTRATION No. 4573

Digitally signed by: Robert M. Frost, PLS
Date: 2026.04.16 10:53:02 -05'00'



OCS-G-21245 Well IS002 ST00BP00
Block 678 - Walker Ridge Area



PREPARED
BY:



OCEANEERING INTERNATIONAL, INC.
202 STANTON STREET
BROUSSARD, LA. 70518
(337) 210-0000
LA Reg. No. 747

JOB: 242245

DRW: M.Quattrochi

DATE: April 16, 2026

CKD: Z. Smith

APP: R. Frost

DOC: 242245-OII-DRW-ASD-001-01

SHEET 1 of 1

REV.
0

ATTACHMENT 1-C



Outlook

[EXTERNAL**] Pay.gov Payment Confirmation: BOEM Development/DOCD Plan - BD**

From notification@pay.gov <notification@pay.gov>

Date Mon 5/11/2026 7:17 AM

To Moss, Carly <Carly.Moss@chevron.com>

Be aware this external email contains an attachment and/or link.

Ensure the email and contents are expected. If there are concerns, please submit suspicious messages to the Cyber Intelligence Center using the Report Phishing button.



An official email of the United States government



Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact Bert Readinger at (703) 787-1863 or bseefinanceaccountsreceivable@bsee.gov.

Application Name: BOEM Development/DOCD Plan - BD

Pay.gov Tracking ID: 2826T37I

Agency Tracking ID: 77383824141

Transaction Type: Sale

Transaction Date: 05/11/2026 08:17:17 AM EDT

Account Holder Name: Carly Moss

Transaction Amount: \$11,130.00

Card Type: MasterCard

Card Number: *****3799

Region: Gulf of America

Contact: Carly Moss (337) 849-4936

Company Name/No: Union Oil Company of California, 00003

Lease Number(s): 18744, 18745, 18753, 21245

Area-Block: Walker Ridge WR, 633: Walker Ridge WR, 634: Walker Ridge WR, 677: Walker Ridge WR, 678

Type-Wells: Supplemental Plan, 2

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

SECTION 2 GENERAL INFORMATION

2.1 APPLICATIONS AND PERMITS

The table below provides the additional applications to be filed covering operations proposed in this DOCD.

Application/Permit	Issuing Agency	Status
Supplemental DWOP	BSEE	To be submitted
Lease Term Pipeline Permits	BSEE	To be submitted
Downhole Commingling Application	BSEE	To be submitted
Modification to Surface Commingling	BSEE	To be submitted
Production Safety Systems Modification	BSEE	To be submitted

2.2 DRILLING FLUIDS

No wells are proposed to be drilled as part of this DOCD.

2.3 PRODUCTION

Anticipated Production:

Type	Average Production Rate	Peak Production Rate	Life of Reservoir
Oil	3,600 BOPD	15,000 BOPD	22 years
Gas	0.8 MMcf/day	3.5 MMcf/day	22 years

2.4 OIL CHARACTERISTICS

Oil characteristics are not required to be submitted with this plan.

2.5 NEW OR UNUSUAL TECHNOLOGY

No new or unusual technology is proposed in this DOCD as defined by 30 CFR 550.200.

2.6 BONDING STATEMENT

The bond requirements for the activities and facilities proposed in this DOCD are satisfied by an area-wide bond, furnished and maintained according to 30 CFR 556.900 (a) and 30 CFR 556.901 (a) and (b) and NTL No. 2015-BOEM-N04, "General Financial Assurance"; and additional security under 30 CFR 556.901(d) – (f) and NTL No. 2016—BOEM-N01, "Requiring Additional Security" as required by BOEM.

2.7 OIL SPILL FINANCIAL RESPONSIBILITY (OSFR)

Union Oil Company of California (Company No. 00003) has demonstrated oil spill financial responsibility for the facilities proposed in this DOCD according to 30 CFR Part 553.15 (a); and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities".

2.8 DEEPWATER WELL CONTROL STATEMENT

Union Oil Company of California (Company No. 00003) has the financial capability to drill a relief well and conduct other emergency well control operations.

2.9 SUSPENSION OF PRODUCTION

Unocal does not anticipate filing any requests for Suspension of Production to hold the lease or unit addressed in this DOCD in active status.

2.10 BLOWOUT SCENARIO AND WORST CASE DISCHARGE CALCULATIONS

No drilling or completion operations are proposed in this plan.

SECTION 3

GEOLOGICAL AND GEOPHYSICAL INFORMATION

3.1 GEOLOGICAL DESCRIPTION

Proprietary Information.

3.2 STRUCTURE CONTOUR MAPS

Proprietary Information.

3.3 INTERPRETED SEISMIC LINES

Proprietary Information.

3.4 GEOLOGICAL STRUCTURE CROSS-SECTIONS

Proprietary Information.

3.5 SHALLOW HAZARDS REPORT

Proprietary Information.

3.6 SHALLOW HAZARDS ASSESSMENT

The proposed operations will be conducted from a previously approved surface location as provided for in S-EP (Control No. S-8214); therefore, a shallow hazards assessment is not provided.

3.7 HIGH-RESOLUTION SEISMIC LINES

Proprietary Information.

3.8 STRATIGRAPHIC COLUMN

Drilling activities are not proposed in this plan.

3.9 TIME VS DEPTH TABLES

Drilling activities are not proposed in this plan.

SECTION 4

HYDROGEN SULFIDE INFORMATION

4.1 CONCENTRATION

Unocal anticipates encountering 0 ppm H₂S during the proposed operations.

4.2 CLASSIFICATION

In accordance with Title 30 CFR 250.490(c), Unocal requests that the area of proposed operations be classified by the BOEM as H₂S absent.

4.3 H₂S CONTINGENCY PLAN

An H₂S Contingency Plan is not required for the activities proposed in this plan.

4.4 MODELING REPORT

Modeling reports are not required for the activities proposed in this plan.

SECTION 5

MINERAL RESOURCE CONSERVATION INFORMATION

5.1 TECHNOLOGY & RESERVOIR ENGINEERING PRACTICES AND PROCEDURES

Proprietary Information.

5.2 TECHNOLOGY AND RECOVERY PRACTICES AND PROCEDURES

Proprietary Information.

5.3 RESERVOIR DEVELOPMENT

Proprietary Information.

SECTION 6

BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

6.1 DEEPWATER BENTHIC COMMUNITIES

The proposed operations will be conducted from a previously approved surface location as provided for in S-EP, (Control No. S-8214).

6.2 TOPOGRAPHIC FEATURES (BANKS)

Activities proposed in this DOCD do not fall within 305 meters (1000 feet) of a topographic “No Activity Zone;” therefore, no map is required per NTL No. 2009-G39, “Biologically Sensitive Underwater Features and Areas.”

6.3 TOPOGRAPHIC FEATURES STATEMENT (SHUNTING)

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

6.4 LIVE-BOTTOMS (PINNACLE TREND FEATURES)

The leases in this DOCD are not located within 61 meters (200 feet) of any pinnacle trend feature; therefore, a separate bathymetric map is not required per NTL No. 2009-G39, “Biologically Sensitive Underwater Features and Areas.”

6.5 LIVE BOTTOMS (LOW RELIEF)

The leases in this DOCD are not located within 30 meters (100 feet) of any live bottom (low relief) feature with vertical relief equal to or greater than 8 feet; therefore, live bottom (low relief) maps are not required per NTL No. 2009-G39, “Biologically Sensitive Underwater Features and Areas.”

6.6 POTENTIALLY SENSITIVE BIOLOGICAL FEATURES

The leases in this DOCD are not located within 30 meters (100 feet) of potentially sensitive biological features. In accordance with NTL No. 2009-G39, “Biologically Sensitive Underwater Features and Areas,” biologically sensitive area maps are not required.

6.7 THREATENED AND ENDANGERED SPECIES, CRITICAL HABITAT AND MARINE MAMMAL INFORMATION

The federally listed endangered and threatened species potentially occurring in the lease area and along the Gulf Coast are provided in the table below.

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico
			Lease Area	Coastal	
Marine Mammals					
Manatee, West Indian	<i>Trichechus manatus latirostris</i>	T	--	X	Florida (peninsular)
Whale, Blue	<i>Balaenoptera masculus</i>	E	X ¹	--	None
Whale, Bryde's ⁴	<i>Balaenoptera brydei/edeni</i>	E	X	--	None

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico
			Lease Area	Coastal	
Whale, Fin	<i>Balaenoptera physalus</i>	E	X ¹	--	None
Whale, Humpback	<i>Megaptera novaeangliae</i>	E	X ¹	--	None
Whale, North Atlantic Right	<i>Eubalaena glacialis</i>	E	X ¹	--	None
Whale, Rice's ⁴	<i>Balaenoptera ricei</i>	E	X	--	None
Whale, Sei	<i>Balaenoptera borealis</i>	E	X ¹	--	None
Whale, Sperm	<i>Physeter catodon</i> (=macrocephalus)	E	X	--	None
Terrestrial Mammals					
Mouse, Beach (Alabama, Choctawatchee, Perdido Key, St. Andrew)	<i>Peromyscus polionotus</i>	E	-	X	Alabama, Florida (panhandle) beaches
Jaguarundi, Gulf Coast	<i>Puma yagouaroundi cacomitli</i>	E	-	X	None
Ocelot	<i>Leopardus</i> (=Felis) <i>pardalis</i>	E	-	X	None
Bat, Florida Bonneted	<i>Eumops floridanus</i>	E	-	X	None
Panther, Florida	<i>Puma</i> (=Felis) <i>concolor coryi</i>	E	-	X	None
Vole, Florida Salt Marsh	<i>Microtus pennsylvanicus dukecampbelli</i>	E	-	X	None
Deer, Key	<i>Odocoileus virginianus clavium</i>	E	-	X	None
Rabbit, Lower Keys Marsh	<i>Sylvilagus palustris hefneri</i>	E	-	X	None
Rat, Silver Rice	<i>Oryzomys palustris natator</i>	E	-	X	None
Birds					
Plover, Piping	<i>Charadrius melodus</i>	T	-	X	Coastal Texas, Louisiana, Mississippi, Alabama and Florida (panhandle)
Crane, Whooping	<i>Grus Americana</i>	E	-	X	Coastal Texas
Crane, Mississippi sandhill	<i>Grus canadensis pulla</i>	E	-	X	Coastal Mississippi
Caracara, Audubon's Crested	<i>Polyborus plancus audubonii</i>	T	-	X	None
Curlew, Eskimo	<i>Numenius borealis</i>	E	-	X	None
Falcon, Northern Aplomado	<i>Falco femoralis septentrionalis</i>	E	-	X	None
Prairie-chicken, Attwater's Greater	<i>Tympanuchus cupido attwateri</i>	E	-	X	None
Scrub-jay, Florida	<i>Aphelocoma coerulescens</i>	T	-	X	None
Kite, Everglade Snail	<i>Rostrhamus sociabilis plumbeus</i>	E	-	X	None
Knot, Red	<i>Calidris canutus rufa</i>	T	-	X	None

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico
			Lease Area	Coastal	
Rail, Eastern Black	<i>Laterallus jamaicensis ssp. jamaicensis</i>	T	-	X	None
Sparrow, Cape Sable Seaside	<i>Ammodramus maritimus mirabilis</i>	E	-	X	Everglades
Stork, Wood	<i>Mycteria americana</i>	T	-	X	None
Tern, Roseate	<i>Sterna dougallii dougallii</i>	T	-	X	None
Warbler, Bachman's	<i>Vermivora bachmanii</i>	E	-	X	None
Woodpecker, Red-cockaded	<i>Picoides borealis</i>	E	-	X	None
Reptiles					
Sea Turtle, Green	<i>Chelonia mydas</i>	T/E ³	X	X	None
Sea Turtle, Hawksbill	<i>Eretmochelys imbricata</i>	E	X	X	None
Sea Turtle, Kemp's Ridley	<i>Lepidochelys kempli</i>	E	X	X	None
Sea Turtle, Leatherback	<i>Dermochelys coriacea</i>	E	X	X	None
Sea Turtle, Loggerhead	<i>Caretta caretta</i>	T	X	X	Texas, Louisiana, Mississippi, Alabama, Florida
Turtle, Alabama Red-bellied	<i>Pseudemys alabamensis</i>	E	-	X	None
Crocodile, American	<i>Crocodylus acutus</i>	T	-	X	Everglades and Florida Keys
Snake, Eastern Indigo	<i>Drymarchon couperi</i>	T	-	X	None
Tortoise, Gopher	<i>Gopherus polyphemus</i>	T	-	X	None
Turtle, Ringed Map	<i>Graptemys oculifera</i>	T	-	X	None
Turtle, Yellow-blotched Map	<i>Graptemys flavimaculata</i>	T	-	X	None
Fish					
Sturgeon, Gulf	<i>Acipenser oxyrinchus (=oxyrhyinchus) desotoi</i>	T	X	X	Coastal Louisiana, Mississippi, Alabama and Florida (panhandle)
Shark, Oceanic Whitetip	<i>Carcharhinus longimanus</i>	E	X	—	None
Sawfish, Smalltooth	<i>Pristis pectinate</i>	E	-	X	None
Grouper, Nassau	<i>Epinephelus striatus</i>	T	-	X	Florida ⁵
Ray, Giant Manta	<i>Manta birostris</i>	E	X	--	None
Sturgeon, Pallid	<i>Scaphirhynchus albus</i>	E	-	X	None
Corals					
Coral, Elkhorn	<i>Acopora palmate</i>	T	X ²	X	Florida ⁵
Coral, Staghorn	<i>Acopora cervicornis</i>	T	X	X	Florida ⁵

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico
			Lease Area	Coastal	
Coral, Boulder Star	<i>Orbicella franksi</i>	T	X	X	Flower Garden Banks and Florida
Coral, Lobed Star	<i>Orbicella annularis</i>	T	X	X	Flower Garden Banks and Florida
Coral, Mountainous Star	<i>Orbicella faveolate</i>	T	X	X	Flower Garden Banks and Florida
Coral, Rough Cactus	<i>Mycetophyllia ferox</i>	T	-	X	Florida ⁵
Coral, Pillar	<i>Dendrogyra cylindrus</i>	T	-	X	Florida ⁵

Abbreviations: E = Endangered; T = Threatened

1 The Blue, Fin, Humpback, North Atlantic Right, and Sei Whales are rare or extralimital in the Gulf of Mexico and are unlikely to be present in the lease area.

2 According to the 2017 EIS, Elkhorn Coral, while uncommon, has been found in the Flower Garden Banks. (BOEM 2017-009)

3 Green Sea Turtles are considered threatened throughout the Gulf of Mexico; however, the breeding population off the coast of Florida is considered endangered.

4 The Bryde's whale, also known as the Bryde's whale complex, is a collection of baleen whales that are still being researched to determine if they are the same species or if they are individual species of whales. In 2021, the Rice's whale, formerly known as the Gulf of Mexico Bryde's whale, was determined to be a separate species. There are less than 100 Rice's whales living in the Gulf of Mexico year-round. These whales retain all the protections of the Gulf of Mexico Bryde's whale under the Endangered Species Act while the regulations are being updated to reflect the name change. Other Bryde's whales are migratory and may enter the Gulf of Mexico; however, the migratory Bryde's whales are rare or extralimital in the Gulf of Mexico and are unlikely to be present in the lease area.

5 Critical habitat is in the Gulf of Mexico, but outside of planning area. Species may still occur in the Gulf of Mexico.

6.8 ARCHAEOLOGICAL REPORT

The proposed operations will be conducted from previously approved surface locations as provided for in S-EP (Control No. S-8214); therefore, in accordance with NTL No. 2005-G07, "Archaeological Resource Surveys and Reports," and NTL No. 2011-JOINT-G01, "Revisions to the List of OCS Lease Blocks Requiring Archaeological Resource Surveys and Reports," an archaeological resource survey report is not provided.

6.9 AIR AND WATER QUALITY INFORMATION

Air and water quality information is not required to be included in this plan per NTL No. 2008-G04, "Information Requirements for Exploration Plans and Development Operations Coordination Documents."

6.10 SOCIOECONOMIC INFORMATION

Socioeconomic information is not required to be included in this plan per NTL No. 2008-G04, "Information Requirements for Exploration Plans and Development Operations Coordination Documents."

SECTION 7 WASTES AND DISCHARGES INFORMATION

7.1 PROJECTED GENERATED WASTES

“Wastes You Will Generate, Treat and Downhole Dispose or Discharge to the Gulf of America” is included as **Attachment 7-A**.

7.2 MODELING REPORT

Modeling reports are not required for the activities proposed in this plan.

ATTACHMENT 7-A

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

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

Projected generated waste				Projected ocean discharges			Projected Downhole Disposal
Type of Waste	Composition	Total Projected Annual Discharge Volume	units	Maxium Discharge rate	units	Discharge Method	Answer yes or no
Will humans be there? If yes, expect conventional waste							
EXAMPLE: Sanitary waste water	Sanitary waste from living quarters	bbl	X bbl/well			chlorinate and discharge overboard	No
Domestic waste	NA						No
Sanitary waste	NA						No
Is there a deck? If yes, there will be Deck Drainage							
Deck Drainage	NA						No
Miscellaneous discharges. If yes, only fill in those associated with your activity.							
Desalinization unit discharge	NA						No
Ballast water	NA						No
Bilge water	NA						No
Firewater	NA						No
Non-contact cooling water	NA						No
Uncontaminated Seawater	NA						No
Uncontaminated Freshwater	NA						No
Uncontaminated Freshwater	NA						No
Chemically treated seawater	NA						No
Subsea Production Control Fluids	Hydraulic control fluids used to actuate valves or replace chokes	60	bbl/yr	1	gal/valve/ per two	intermittent discharge at seafloor from sub sea valves (8 trees, 2 manifolds)	No
Hydrate inhibitor	Hydrate inhibitor (methanol) for replacing chokes	0.05	bbl/yr	0.05	bbl/day	intermittent discharge at seafloor from sub sea choke replacement. Estimated one to occur per year (<0.05bbl)	No
Miscellaneous discharges. Generated once only at commissioning - not annual discharges		Total discharge					
Chemically treated seawater	NA						No
Chemically treated seawater	NA						No
Chemically treated seawater	NA						No
Chemically treated seawater	NA						No
Will you produce hydrocarbons? If yes fill in for produced water.		Total Projected Annual Discharge Volume					
Produced water	NA						No
Will you be covered by an individual or general NPDES permit ?				General			General
				GMG290132			

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

SECTION 8

AIR EMISSIONS INFORMATION

8.1 SUMMARY INFORMATION

Included as **Attachment 8-A** are the Air Emissions Worksheets.

COMPANY	Chevron U.S.A.
AREA	Walker Ridge
BLOCK	677
LEASE	OCS-G 18753
FACILITY	N/A
WELL	PN001, PS008, PS009, IS002
COMPANY CONTACT	Danielle Wold
TELEPHONE NO.	713-372-6975
REMARKS	Installation of subsea infrastructure, including tie-in skid and injection jumpers.

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER OF PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2026	2	Construction is expected to take place between 4th quarter 2026 and 1st quarter 2027. Thus pipeline count and construction days will be attributed to both years. Construction is anticipated to last fewer than 30 days.
2027		
2028		
2029		
2030		
2031		
2032		
2033		
2034		
2035		

Note: This submittal is limited to installation of subsea infrastructure and drilling activities within Walker Ridge Block 677. The subsea system will be tied back to the existing production facility in Walker Ridge Block 718. This action does not modify existing platform operations; accordingly, emissions from the Walker Ridge 718 facility remain unchanged from prior AQR submittals.

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 DOCD 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 and DOCDs. We estimate that burden to average 700 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/chie1/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/chie1/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/chie1/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/chie1/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	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
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	
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	https://www3.epa.gov/ttn/chie1/ap42/ch13/final/C13S05_02-05-18.pdf
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	
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.aplwebstore.org/publications/item.cgi?9879d38a-8bc0-4abe-bb5c-9b623870125d
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	https://www.epa.gov/moves/nonroad2008a-installation-and-updates
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	
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_Newroom/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	

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

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

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

AIR EMISSIONS CALCULATIONS - 1ST YEAR

NOTE:
(1) This AQR includes contingency drilling days each year for recompletions, workovers, interventions, abandonment activities, and inspection or maintenance of subsea wells, equipment, and pipelines. In cases where possible, a smaller vessel of lesser HP may be used to complete the work.
(2) In cases where possible, a smaller vessel of lesser HP may be used to complete the work.

AIR EMISSIONS CALCULATIONS - 1ST YEAR

NOTE:
(1) This AQR includes contingency drilling days each year for recompletions, workovers, interventions, abandonment activities, and inspection or maintenance of subsea wells, equipment, and pipelines. In cases where possible, a smaller vessel of lesser HP may be used to complete the work.

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL					
Chevron U.S.A.	Walker Ridge	677	OCS-G 18753	N/A	PN001, PS008, PS009, IS002					
Year	Facility Emitted Substance									
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	
	2026 - 2027	206.29	124.46	120.72	3.00	4,942.43	142.11	0.01	775.21	1.44
	2028 - 2035	190.96	115.21	111.76	2.78	4,575.29	131.55	0.01	717.62	1.34
	Allowable	6,160.50			6,160.50	6,160.50	6,160.50		110,389.24	

COMPANY	Chevron U.S.A.
AREA	Walker Ridge
BLOCK	678
LEASE	OCS-G 21245
FACILITY	N/A
WELL	PN002, PN005, PS001, PS002, PS003, PS004, PS005, PS006, PS007, IS001, IS003
COMPANY CONTACT	Danielle Wold
TELEPHONE NO.	713-372-6975
REMARKS	Installation of subsea infrastructure including, suction piles, manifolds, tie-in skids, distribution units, and jumpers.

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER OF PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2026	8	Construction is expected to take place between 4th quarter 2026 and 1st quarter 2027. Thus pipeline count and construction days will be attributed to both years. Construction is anticipated to last fewer than 40 days.
2027		
2028		
2029		
2030		
2031		
2032		
2033		
2034		
2035		

Note: This submittal is limited to installation of subsea infrastructure and drilling activities within Walker Ridge Block 678. The subsea system will be tied back to the existing production facility in Walker Ridge Block 718. This action does not modify existing platform operations; accordingly, emissions from the Walker Ridge 718 facility remain unchanged from prior AQR submittals.

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 DOCD 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 and DOCDs. We estimate that burden to average 700 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/ch03/final/c03s04.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.aplwebstore.org/publications/item.cgi?9879d38a-8bc0-4abe-bb5c-9b623870125d
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	https://www.epa.gov/moves/nonroad2008a-installation-and-updates
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	
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_Newroom/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	

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

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

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

AIR EMISSIONS CALCULATIONS - 1ST YEAR

NOTE:

(1) This AQR includes contingency drilling days each year for recompletions, workovers, interventions, abandonment activities, and inspection or maintenance of subsea wells, equipment, and pipelines. In cases where possible, a smaller vessel of lesser HP may be used to complete the work.

(2) In cases where possible, a smaller vessel of lesser HP may be used to complete the work.

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	PN002, PN005, PS001, PS002, PS003, PS004, PS005, PS006, PS007, IS001, IS003				Danielle Wold	713-372-8975	Installation of subsea infrastructure including, suction piles, manifolds, tie-in skids, distribution units, and jumpers.													
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR									ESTIMATED TONS								
	Diesel Engines		HP	GAL/HR	GAL/D																				
	Nat. Gas Engines		HP	SCF/HR	SCF/D																				
	Burners		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel	(Note 1)	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
PIPELINE	VESSELS - Pipeline Laying Vessel - 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
INSTALLATION	VESSELS - Pipeline Burying - 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 - 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
PRODUCTION	RECIP. <600hp 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	--
	RECIP. >600hp 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	--
	VESSELS - Shuttle Tankers		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 - Well Stimulation		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
	Natural Gas Turbine		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	--
	Diesel Turbine		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	--
	Dual Fuel Turbine		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
	RECIP. 2 Cycle Lean Natural Gas		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	--
	RECIP. 4 Cycle Lean Natural Gas		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	--
	RECIP. 4 Cycle Rich Natural Gas		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	--
	Diesel Boiler					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
	Natural Gas Heater/Boiler/Burner		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
	MISC.		BPD	SCF/HR	COUNT																				
	STORAGE TANK				0.00	0	0	--	--	--	--	--	#DIV/0!	--	--	--	--	--	--	--	--	0.00	--	--	--
	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	--
	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	--
	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	--
	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	--
	COLD VENT				0.00	0	0	--	--	--	--	--	#DIV/0!	--	--	--	--	--	--	--	0.00	--	--	--	--
	FUGITIVES				0.00	0	0	--	--	--	--	--	0.00	--	--	--	--	--	--	--	0.00	--	--	--	--
	GLYCOL DEHYDRATOR				0.00	0	0	--	--	--	--	--	#DIV/0!	--	--	--	--	--	--	--	0.00	--	--	--	--
	WASTE INCINERATOR		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	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	--
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	
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	--
	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	--
	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	--
	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	--
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	
2028 - 2035	Facility Total Emissions																								

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL				
Chevron U.S.A.	Walker Ridge	678	OCS-G 21245	N/A	PN002, PN005, PS001, PS002, PS003, PS004, PS005, PS006, PS007, IS001, IS003				
Year	Facility Emitted Substance								
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
2026 - 2027	208.75	125.94	122.16	3.04	5,001.44	143.80	0.01	784.46	1.46
2028 - 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	

SECTION 9

OIL SPILL INFORMATION

9.1 OIL SPILL RESPONSE PLANNING

All the proposed activities and facilities in this DOCD will be covered by the Oil Spill Response Plan (OSRP) filed by Chevron Corporation's (Company No. 02335) Gulf of America Regional OSRP approved on March 22, 2016; Chevron submitted the Biennial Review of the OSRP in June of 2025 and it was deemed in compliance with 30 CFR 254 by BSEE on December 3, 2025. The following operators are covered under this OSRP:

Chevron Corporation (02335)
Chevron U.S.A. Inc. (00078)
Chevron Pipe Line Company (00400)
Sabine Pipe Line LLC (02950)
Union Oil Company of California (00003)
Unocal Pipeline Company (01113)
PRS Offshore, L.P. (01767)
Hess Corporation (00059)

9.2 SPILL RESPONSE SITES

Primary Response Equipment Location	Preplanned Staging Location
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

9.3 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 America Region. CGA and MSRC each maintain a dedicated fleet of vessels and other equipment strategically positioned along the Gulf Coast. CGA and MSRC each maintain a network of trained Oil Spill Removal Organizations (OSROs) to deploy and operate their equipment. CGA and 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 the Gulf of America coastal ports.

As per Chevron's Regional OSRP, 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 the Gulf Coast region.

9.4 WORST-CASE DISCHARGE SCENARIO DETERMINATION

Category	Production	
	Regional OSRP WCD	DOCD WCD
Type of Activity	>10 Miles Production	>10 Miles Production
Facility location (Area/Block)	GC 641	WR 677
Facility designation	A (Tahiti Spar)	PS008
Distance to nearest shoreline	118	182
Storage tanks & flowlines (bbl)	5,278	NA
Lease term pipelines (bbl)	4,044	12,450
Uncontrolled blowout (bbl)	186,452	32,335
Total Volume (bbl)	195,774	44,785
Type of oil(s) (crude, condensate, diesel)	Crude	Crude
API gravity	29.5°	30°

Chevron has determined that the worst-case scenario from the activities proposed in this DOCD does not supersede the worst-case scenario from our approved Regional OSRP.

Since Chevron has the capability to respond to the worst-case spill scenario included in our Regional OSRP approved on March 22, 2016 and the Biennial Review update BSEE acknowledged on December 3, 2025, and since the worst-case scenario determined for our DOCD does not replace the worst-case scenario in our Regional OSRP, 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 this DOCD.

9.5 OIL SPILL RESPONSE DISCUSSION

Chevron maintains numerous resources, equipment and expertise to respond to an oil spill in the Gulf of America. 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 America. 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 America.

- American Pollution Control (AmPol)
- Clean Gulf Associates Services
 - ES&H Environmental Services
 - OMI Environmental Services
 - T&T Marine Salvage Inc.

- U.S. Environmental Services
- Oil Spill Response (OSRL)

Oil Spill Cooperatives (OSC) – OSCs have equipment pre-staged in the Gulf of America, 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 is strictly dedicated to Gulf of America oil and gas developers and producers.
- Marine Spill Response Corporation (MSRC) – This national cooperative has extensive dedicated offshore resources located in the Gulf of America

Well Control Emergency Response Companies

- Marine Well Containment Company (MWCC)
- Wild Well Control Inc. (WWC)
- Boots & Coots

Oil Spill Management and Response Consultants

- The Response Group (TRG)

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

- Airborne Support, Inc via Clean Gulf Associates (CGA)
- Marine Well Containment Company (MWCC)
- Oil Spill Response (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 America 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 CGA and MSRC cooperatives. CGA and MSRC are the primary surface response equipment providers for Chevron in the Gulf of America Region. CGA and MSRC each maintain a dedicated fleet of vessels and other equipment strategically positioned along the Gulf Coast. CGA and MSRC each maintain a network of trained Oil Spill Removal Organizations (OSROs) deploy and operate their equipment. CGA and 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 America. Chevron pilots and helicopters provide aerial surveillance. The Chevron Chief Pilot fills the Air Operations Branch Director role during an emergency.

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 America 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	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.)

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 Gulf of America Regional 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 America OSRP 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 OSRP. The Chevron Regional Gulf of America OSRP is maintained by the Chevron Gulf of America Emergency Management Advisor.

9.6 MODELING REPORT

Modeling reports are not required for the activities proposed in this plan.

SECTION 10

ENVIRONMENTAL MONITORING INFORMATION

10.1 MONITORING SYSTEMS

Unocal will not utilize any new or unusual technology during the operations proposed under this Initial DOCD.

10.2 INCIDENTAL TAKES

There is no reason to believe that any of the endangered species or marine mammals as listed in the Endangered Species Act (ESA) will be “taken” as a result of the operations proposed under this plan.

Operations proposed in this plan may utilize a moon pool(s) to conduct various subsea activities. Accordingly, Unocal will adhere with the requirements set forth in the Appendices to the Biological Opinion on the Federally Regulated Oil and Gas Program in the Gulf of America issued on March 13, 2020, and the amendment issued on April 26, 2021.

Moon pool(s) will be regularly monitored while open to the water column and when the vessel is not underway. If water conditions are such that observers are unable to see within a meter of the surface, operations requiring lowering or retrieval of equipment through the moon pool will be conducted at a rate that will minimize potential harm, if safety allows.

Prior to and following hull door closure, the moon pool will be monitored continuously by a dedicated crew observer with no other tasks to ensure that no ESA listed species is present in the moon pool area. If visibility is not clear to the hull door from above (e.g., turbidity or low light), 30 minutes of monitoring will be conducted prior to hull door closure. Prior to movement of the vessel and/or deployment/retrieval of equipment, the moon pool will be monitored continuously for a minimum of 30 minutes, by a dedicated crew observer with no other tasks, to ensure no individual protected species are present in the moon pool area.

If an ESA listed species is observed in the moon pool, the vessel will not be moved and equipment will not be deployed or retrieved, to the extent practicable unless the safety of crew or vessel requires otherwise. NMFS will be contacted immediately at nmfs.psoreview@noaa.gov. If the observed animal leaves the moon pool, activities will commence.

Should an ESA listed species be observed in a moon pool prior to commencement of activity, recovery of the animal or other actions specific to the scenario may be required to prevent interaction with the animal. No action will be taken except at the direction of and after contact with NMFS.

Should an interaction with equipment or entanglement/entrapment of any ESA listed species occur (e.g., the animal cannot or does not leave the moon pool on its own volition), the interaction will be reported immediately. Any observation of a leatherback sea turtle within a moon pool, regardless of whether interaction with equipment or entanglement/entrapment is observed, will

be reported immediately to the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov).

Further, any interaction with equipment or entanglement/entrapment of any ESA listed species (i.e., the animal cannot or does not leave the pool of its own volition) will be reported immediately. For assistance with marine mammals and sea turtles, the stranding network listed at www.fisheries.noaa.gov/report and BSEE at protectedspecies@bsee.gov will be contacted for additional guidance on continued monitoring requirements, recovery assistance needs (if required), and incidental report information. Other ESA listed species (e.g., giant manta ray) will be reported to relevant state agency wildlife lines, the ESA Section 7 biologist, and BSEE at protectedspecies@bsee.gov. The vessel will not be moved and equipment will not be deployed or retrieved to/from the pool, to the extent practicable, until NMFS and BSEE are contacted and provide input on how to proceed.

Any individual protected species listed species observed within a moon pool that then leaves the moon pool of its own volition will be reported within 24 hours to NMFS at nmfs.psoreview@noaa.gov and BSEE at protectedspecies@bsee.gov. If the observed animal is no longer observed in the moon pool, monitoring will take place for at least 30 minutes to ensure it has left the moon pool. After 30 minutes, activities will commence.

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

Unocal and/or its contractor representatives 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:

- Appendices to the Biological Opinion on the Federally Regulated Oil and Gas Program in the Gulf of Mexico issued on March 13, 2020, and the amendment issued on April 26, 2021
 - Appendix A: "Seismic Survey Mitigation and Protected Species Observer Protocols"
 - Appendix B: "Marine Trash and Debris Awareness and Elimination Survey Protocols"
 - Appendix C: "Vessel Strike Avoidance and Injured/Dead Aquatic Protected Species Reporting Protocols"
 - Appendix J: "Sea Turtle Handling and Resuscitation Guidelines"

10.3 FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY

The leases covered under this DOCD are not located in the Flower Garden Banks National Marine Sanctuary; therefore, relevant information is not required in this DOCD.

SECTION 11

LEASE STIPULATIONS INFORMATION

Walker Ridge Blocks 633, 634, 677, and 678 have no known lease stipulations.

Although Stipulation Number 5 - Protected Species is not assigned, Unocal will follow all guidelines to implement these mitigation measures to reduce the potential taking of Federally protected species.

11.1 MARINE PROTECTED SPECIES

In accordance with the Federal Endangered Species Act and the Marine Mammal Protection Act, Unocal will:

- (a) Collect and remove flotsam resulting from activities related to exploration, development, and production of this lease;
- (b) 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;
- (c) 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;
- (d) 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;
- (e) 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
- (f) 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 Notices to Lessees (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. The lessee and its operators, personnel, and subcontractors, while undertaking activities authorized under this lease, must implement and comply with the specific mitigation measures outlined in

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;" and NTL No. 2015-BSEE-G03, "Marine Trash and Debris Awareness and Elimination." At the lessee's option, the lessee, 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 this lease, including but not limited to new or updated versions of the NTLs identified in this paragraph. The lessee 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 their plans or permits.

SECTION 12

ENVIRONMENTAL MITIGATION MEASURES INFORMATION

12.1 MEASURES TAKEN TO AVOID, MINIMIZE, AND MITIGATE IMPACTS

Unocal will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any marine and coastal environments and habitats, biota, and threatened and endangered species:

- Appendices to the Biological Opinion on the Federally Regulated Oil and Gas Program in the Gulf of Mexico issued on March 13, 2020, and the amendment issued on April 26, 2021
 - Appendix A: “Seismic Survey Mitigation and Protected Species Observer Protocols”
 - Appendix B: “Marine Trash and Debris Awareness and Elimination Survey Protocols”
 - Appendix C: “Vessel Strike Avoidance and Injured/Dead Aquatic Protected Species Reporting Protocols”
 - Appendix J: “Sea Turtle Handling and Resuscitation Guidelines”

12.2 INCIDENTAL TAKES

Unocal will adhere to the requirements 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:

- Appendices to the Biological Opinion on the Federally Regulated Oil and Gas Program in the Gulf of Mexico issued on March 13, 2020, and the amendment issued on April 26, 2021
 - Appendix A: “Seismic Survey Mitigation and Protected Species Observer Protocols”
 - Appendix B: “Marine Trash and Debris Awareness and Elimination Survey Protocols”
 - Appendix C: “Vessel Strike Avoidance and Injured/Dead Aquatic Protected Species Reporting Protocols”
 - Appendix J: “Sea Turtle Handling and Resuscitation Guidelines”

See **Section 6.7** for a list of Threatened and Endangered Species, Critical Habitat and Marine Mammal Information.

SECTION 13

RELATED FACILITIES AND OPERATIONS INFORMATION

13.1 RELATED OCS FACILITIES AND OPERATIONS

The St. Malo subsea development is supported by the existing Chevron operated JSM FPU host platform installed in WR 718 (CID No. 2440). The WR 677, PS009 well with a surface location in WR 678 will tie-in to existing infrastructure in WR 678 via four (4) new rigid lease term jumpers. The WR 677, IS002 injector well will connect to the existing WR 677 water injection manifold via one (1) new well jumper and one (1) new injection tie-in skid.

The pipeline system shuts-in according to the guidance contained in NTL 2009-G36. The boarding shut down valve will close in 45 seconds.

13.2 TRANSPORTATION SYSTEM

There are no new pipelines going to shore nor any new onshore facilities planned for this project.

The oil and gas will continue to depart the JSM FPU via export pipelines operated by third parties. The oil is transported via an existing 20-24 inch OD pipeline (SN-16329) operated by Chevron Pipeline Company that is approximately 138 miles long between the JSM FPU in WR 718 and Green Canyon (GC) Block 19, Platform A. From GC 19, Platform A, it ties into existing infrastructure for ultimate delivery to shore. The gas is transported via an existing 10.75-inch OD pipeline (SN 16327) operated by Enbridge Offshore Facilities, LLC, approximately 152 miles long between the JSM FPU in WR 718 and Ship Shoal (SS) Block 332, Platform A. From SS 332, Platform A, it ties into existing infrastructure for ultimate delivery to shore.

13.3 PRODUCED LIQUID HYDROCARBONS TRANSPORTATION VESSELS

There will not be any transfers of liquid hydrocarbons other than via pipeline.

SECTION 14

SUPPORT VESSELS AND AIRCRAFT INFORMATION

14.1 GENERAL

For vessel transit, the most practical, direct route from the proposed shorebase, as permitted by weather and traffic conditions will be utilized. Unocal does not anticipate that these routes will transit within the Rice's whale core area for the operations covered under this plan as designated by the March 13, 2020 NMFS programmatic Biological Opinion. In the event the vessel routes change, BSEE/BOEM will be contacted 15 days in advance

Information regarding the vessels and aircraft to be used to support the proposed activities is provided in the table below.

Type	Maximum Fuel Tank Capacity	Maximum Number in Area at Any Time	Trip Frequency or Duration
DP Pipelay Vessel	766,099 gals	1	40 days total (only during subsea installation)
Crew Boat	47,382 gals	1	3 / week
Supply Boat	303,093 gals	1	2 / week
Helicopter	760 gals	1	As Needed

14.2 DIESEL OIL SUPPLY VESSELS

Diesel oil supply vessel information is not required to be submitted with this plan.

14.3 DRILLING FLUID TRANSPORTATION

Drilling fluid transportation information is not required to be submitted with this plan.

14.4 SOLID AND LIQUID WASTE TRANSPORTATION

All solid and liquid wastes from the St. Malo development is collected at the Chevron operated JSM FPU located in WR 718 and combined with the Jack development wastes..

14.5 VICINITY MAP

A vicinity map showing the location of the activities proposed herein relative to the shoreline with the distance of the proposed activities from the shoreline and the primary routes of the support vessels and aircraft that will be used when traveling between the onshore support facilities and the activities proposed in this plan is included as **Attachment 14-A**.

ATTACHMENT 14-A

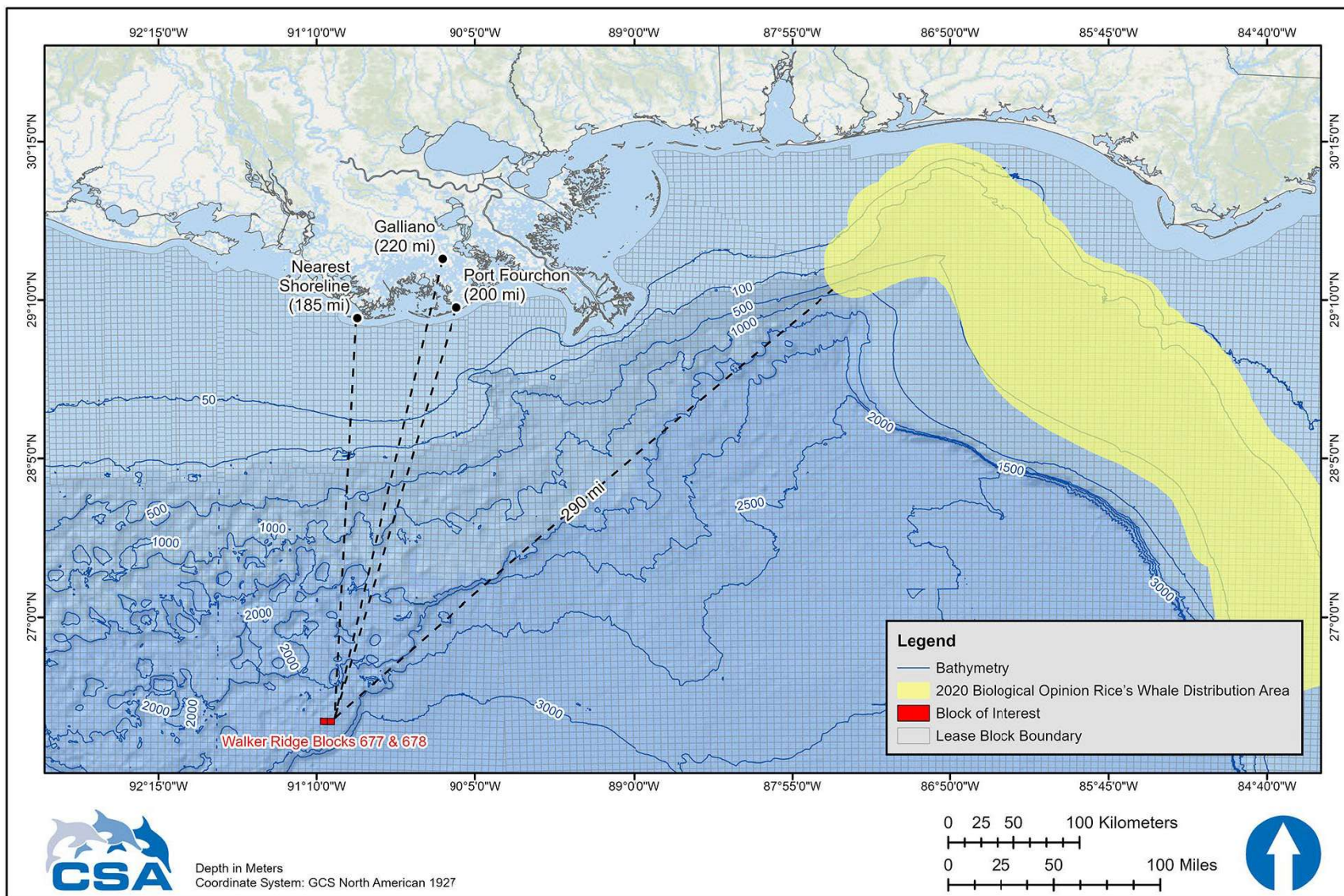


Figure 1. Location of Walker Ridge blocks 677 and 678 relative to the northern Gulf of America shoreline and offshore bathymetric contours.

SECTION 15

ONSHORE SUPPORT FACILITIES INFORMATION

15.1 GENERAL

The onshore facilities to be used to provide supply and service support for the proposed activities are provided in the table below.

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

15.2 SUPPORT BASE CONSTRUCTION OR EXPANSION

There will be no new construction of an onshore support base, nor will Unocal expand the existing shorebase as a result of the operations proposed in this DOCD.

15.3 SUPPORT BASE CONSTRUCTION OR EXPANSION TIMETABLE

A support base construction or expansion timetable is not required for the activities proposed in this plan.

15.4 WASTE DISPOSAL

Solid and liquid waste transportation information is not required for the activities proposed in this plan.

15.4 WASTE DISPOSAL

A table, "Wastes You Will Transport and/or Dispose of Onshore," is included as **Attachment 14-A**.

SECTION 16

COASTAL ZONE MANAGEMENT (CZM) INFORMATION

Coastal Zone Management certification is not required for activities proposed in this plan.

SECTION 17 ENVIRONMENTAL IMPACT ANALYSIS (EIA)

The Environmental Impact Analysis is included as **Attachment 17-A**.

ATTACHMENT 17-A

Union Oil Corporation of California (Unocal) Supplemental Development Operations Coordination Document Walker Ridge Blocks 677 and 678 OCS-G18753 and G21245

(A) Impact Producing Factors

ENVIRONMENTAL IMPACT ANALYSIS WORKSHEET

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

Footnotes for Environmental Impact Analysis Matrix

- 1) Activities that may affect a marine sanctuary or topographic feature. Specifically, if the well or platform site or any anchors will be on the seafloor within the:
 - 4-mile zone of the Flower Garden Banks, or the 3-mile zone of Stetson Bank;
 - 1000-meter, 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;
 - Essential Fish Habitat (EFH) criteria of 500 feet from any no-activity zone; or
 - Proximity of any submarine bank (500-foot buffer zone) with relief greater than two meters that is not protected by the Topographic Features Stipulation attached to an OCS lease.
- 2) Activities with any bottom disturbance within an OCS lease block protected through the Live Bottom (Pinnacle Trend) Stipulation attached to an OCS lease.
- 3) Activities within any Eastern Gulf OCS block where seafloor habitats are protected by the Live Bottom (Low-Relief) Stipulation attached to an OCS lease.
- 4) Activities on blocks designated by the BOEM as being in water depths 300 meters or greater.
- 5) Exploration or production activities where H₂S concentrations greater than 500 ppm might be encountered.
- 6) All activities that could result in an accidental spill of produced liquid hydrocarbons or diesel fuel that you determine would impact these environmental resources. If the proposed action is located a sufficient distance from a resource that no impact would occur, the EIA can note that in a sentence or two.
- 7) All activities that involve seafloor disturbances, including anchor emplacements, in any OCS block designated by the BOEM as having high probability for the occurrence of shipwrecks or prehistoric sites, including such blocks that will be affected that are adjacent to the lease block in which your planned activity will occur. If the proposed operations are located a sufficient distance from a shipwreck or a prehistoric site that no impact would occur, the EIA can note that in a sentence or two.
- 8) All activities that you determine might have an adverse effect on endangered or threatened marine mammals or sea turtles or their critical habitats.
- 9) Production activities that involve transportation of produced fluids to shore using shuttle tankers or barges.

TABLE 1: THREATENED AND ENDANGERED SPECIES, CRITICAL HABITAT, AND MARINE MAMMAL INFORMATION

The federally listed endangered and threatened species potentially occurring in the lease area and along the Gulf Coast are provided in the table below.

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of America	Gulf of America Range
			Lease Area	Coastal		
Marine Mammals						
Manatee, West Indian	<i>Trichechus manatus latirostris</i>	T	--	X	Florida (peninsular)	Coastal Louisiana, Mississippi, Alabama, and Florida
Whale, Blue	<i>Balaenoptera masculus</i>	E	X ¹	--	None	GOA
Whale, Bryde's ⁴	<i>Balaenoptera brydei/edeni</i>	E	X	--	None	Eastern GOA
Whale, Fin	<i>Balaenoptera physalus</i>	E	X ¹	--	None	GOA
Whale, Humpback	<i>Megaptera novaeangliae</i>	E	X ¹	--	None	GOA
Whale, North Atlantic Right	<i>Eubalaena glacialis</i>	E	X ¹	--	None	GOA
Whale, Rice's ⁴	<i>Balaenoptera ricei</i>	E	X	--	None	GOA
Whale, Sei	<i>Balaenopiera borealis</i>	E	X ¹	--	None	GOA
Whale, Sperm	<i>Physeter catodon</i> (= <i>macrocephalus</i>)	E	X	--	None	GOA
Terrestrial Mammals						
Mouse, Alabama Beach	<i>Peromyscus polionotus ammobates</i>	E	-	X	Alabama beaches	Alabama beaches
Mouse, Choctawatchee Beach	<i>Peromyscus polionotus allophrys</i>	E	-	X	Florida panhandle beaches	Florida panhandle beaches
Mouse, Perdido Key Beach	<i>Peromyscus polionotus trissyllepsis</i>	E	-	X	Alabama, Florida (panhandle) beaches	Alabama, Florida (panhandle) beaches
Mouse, St. Andrew Beach	<i>Peromyscus polionotus peninsularis</i>	E	-	X	Florida panhandle beaches	Florida panhandle beaches
Jaguarundi, Gulf Coast	<i>Puma yagouarundi cacomitli</i>	E	-	X	None	Texas

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of America	Gulf of America Range
			Lease Area	Coastal		
Ocelot	<i>Leopardus (=Felis) pardalis</i>	E	-	X	None	Texas
Bat, Florida Bonneted	<i>Eumops floridanus</i>	E	-	X	None	Florida
Panther, Florida	<i>Puma (=Felis) concolor coryi</i>	E	-	X	None	Florida
Vole, Florida Salt Marsh	<i>Microtus pennsylvanicus dukecampbelli</i>	E	-	X	None	Florida
Deer, Key	<i>Odocoileus virginianus clavium</i>	E	-	X	None	Florida Keys
Rabbit, Lower Keys Marsh	<i>Sylvilagus palustris hefneri</i>	E	-	X	None	Florida Keys
Rat, Silver Rice	<i>Oryzomys palustris natator</i>	E	-	X	None	Florida Keys
Birds						
Plover, Piping	<i>Charadrius melodus</i>	T	-	X	Coastal Texas, Louisiana, Mississippi, Alabama, and Florida (panhandle)	Coastal GOA
Crane, Whooping	<i>Grus Americana</i>	E	-	X	Coastal Texas	Coastal Texas and Louisiana
Crane, Mississippi sandhill	<i>Grus canadensis pulla</i>	E	-	X	Coastal Mississippi	Coastal Mississippi
Caracara, Audubon's Crested	<i>Polyborus plancus audubonii</i>	T	-	X	None	Coastal Florida Peninsula
Curlew, Eskimo	<i>Numenius borealis</i>	E	-	X	None	Coastal Texas
Falcon, Northern Aplomado	<i>Falco femoralis septentrionalis</i>	E	-	X	None	Coastal Texas
Prairie-chicken, Attwater's Greater	<i>Tympanuchus cupido attwateri</i>	E	-	X	None	Coastal Texas
Scrub-jay, Florida	<i>Aphelocoma coerulescens</i>	T	-	X	None	Coastal Florida
Kite, Everglade Snail	<i>Rostrhamus sociabilis plumbeus</i>	E	-	X	None	Coastal Southern Florida
Knot, Red	<i>Calidris canutus rufa</i>	T	-	X	None	Coastal GOA

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of America	Gulf of America Range
			Lease Area	Coastal		
Rail, Eastern Black	<i>Laterallus jamaicensis ssp. jamaicensis</i>	T	-	X	None	Coastal GOA
Sparrow, Cape Sable Seaside	<i>Ammodramus maritimus mirabilis</i>	E	-	X	Everglades	Coastal Florida
Stork, Wood	<i>Mycteria americana</i>	T	-	X	None	Coastal Alabama and Florida
Tern, Roseate	<i>Sterna dougallii dougallii</i>	T	-	X	None	Coastal Southern Florida
Warbler, Bachman's	<i>Vermivora bachmanii</i>	E	-	X	None	Coastal Southern Florida
Woodpecker, Red-cockaded	<i>Picoides borealis</i>	E	-	X	None	Coastal Louisiana and Florida
Marine Reptiles						
Sea Turtle, Green	<i>Chelonia mydas</i>	T/E ³	X	X	None	GOA
Sea Turtle, Hawksbill	<i>Eretmochelys imbricata</i>	E	X	X	None	GOA
Sea Turtle, Kemp's Ridley	<i>Lepidochelys kempli</i>	E	X	X	None	GOA
Sea Turtle, Leatherback	<i>Dermochelys coriacea</i>	E	X	X	None	GOA
Sea Turtle, Loggerhead	<i>Caretta caretta</i>	T	X	X	Texas, Louisiana, Mississippi, Alabama, Florida	GOA
Terrestrial Reptiles						
Turtle, Alabama Red-bellied	<i>Pseudemys alabamensis</i>	E	-	X	None	Coastal Mississippi and Alabama
Crocodile, American	<i>Crocodylus acutus</i>	T	-	X	Everglades and Florida Keys	Coastal Florida
Snake, Eastern Indigo	<i>Drymarchon couperi</i>	T	-	X	None	Coastal Mississippi, Alabama, and Florida
Tortoise, Gopher	<i>Gopherus polyphemus</i>	T	-	X	None	Coastal Louisiana, Mississippi, and Alabama
Turtle, Ringed Map	<i>Graptemys oculifera</i>	T	-	X	None	Coastal Louisiana and Mississippi
Turtle, Yellow-blotched Map	<i>Graptemys flavimaculata</i>	T	-	X	None	Coastal Mississippi
Fish						
Sturgeon, Gulf	<i>Acipenser oxyrinchus (oxyrhynchus) desotoi</i>	T	X	X	Coastal Louisiana, Mississippi, Alabama, and Florida (panhandle)	Coastal Louisiana, Mississippi, Alabama, and Florida (panhandle)

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of America	Gulf of America Range
			Lease Area	Coastal		
Shark, Oceanic Whitetip	<i>Carcharhinus longimanus</i>	T	X	—	None	GOA
Sawfish, Smalltooth	<i>Pristis pectinate</i>	E	-	X	None	Florida
Grouper, Nassau	<i>Epinephelus striatus</i>	T	-	X	Florida ⁵	Florida
Ray, Giant Manta	<i>Manta birostris</i>	T	X	--	None	GOA
Sturgeon, Pallid	<i>Scaphirhynchus albus</i>	E	-	X	None	Louisiana Coastal Rivers
Corals						
Coral, Elkhorn	<i>Acopora palmate</i>	T	X ²	X	Florida ⁵	Flower Garden Banks and Florida
Coral, Staghorn	<i>Acopora cervicornis</i>	T	X	X	Florida ⁵	Florida
Coral, Boulder Star	<i>Orbicella franksi</i>	T	X	X	Flower Garden Banks and Florida	Flower Garden Banks and Florida
Coral, Lobed Star	<i>Orbicella annularis</i>	T	X	X	Flower Garden Banks and Florida	Flower Garden Banks and Florida
Coral, Mountainous Star	<i>Orbicella faveolate</i>	T	X	X	Flower Garden Banks and Florida	Flower Garden Banks and Florida
Coral, Rough Cactus	<i>Mycetophyllia ferox</i>	T	-	X	Florida ⁵	Florida and Southern Gulf of America
Coral, Pillar	<i>Dendrogyra cylindrus</i>	T	-	X	Florida ⁵	Florida

Abbreviations: E = Endangered; T = Threatened

- 1 The Blue, Fin, Humpback, North Atlantic Right, and Sei Whales are rare or extralimital in the Gulf of America and are unlikely to be present in the lease area.
- 2 According to the 2017 EIS, Elkhorn Coral, while uncommon, has been found in the Flower Garden Banks. (BOEM 2017-009)
- 3 Green Sea Turtles are considered threatened throughout the Gulf of America; however, the breeding population off the coast of Florida is considered endangered.
- 4 The Bryde's whale, also known as the Bryde's whale complex, is a collection of baleen whales that are still being researched to determine if they are the same species or if they are individual species of whales. In 2021, the Rice's whale, formerly known as the Gulf of America Bryde's whale, was determined to be a separate species. There are less than 100 Rice's whales living in the Gulf of America year-round. These whales retain all the protections of the Gulf of America Bryde's whale under the Endangered Species Act while the regulations are being updated to reflect the name change. Other Bryde's whales are migratory and may enter the Gulf of America; however, the migratory Bryde's whales are rare or extralimital in the Gulf of America and are unlikely to be present in the lease area.
- 5 Critical habitat is in the Gulf of America, but outside of planning area. Species may still occur in the Gulf of America.

(B) Analysis

Site-Specific at Walker Ridge Blocks 677 and 678

Proposed operations consist of the drilling and placing into production of one (1) well (PS009) with a surface location in Walker Ridge Block 678 and a bottomhole location in Walker Ridge Block 677; the drilling and injection of one (1) injector well (IS002) with a surface and bottomhole location in Walker Ridge Block 677. The PS009 well and the IS002 well will be drilled and completed under the Supplemental Exploration Plan, Control No. S-8214.

The proposed operations also consist of the installation of one (1) production jumper, three (3) flowline jumpers, one (1) injector jumper, one (1) suction pile and one (1) manifold; further, Unocal proposes to update the air emissions to include miscellaneous well intervention operations for the existing wells with surface locations in Walker Ridge Blocks 677 and WR 678.

The proposed operations will be conducted with a drillship.

There are no seismic surveys, pile driving, or pipelines making landfall associated with the operations covered by this Plan.

1. Designated Topographic Features

Potential IPFs to topographic features as a result of the proposed operations include physical disturbances to the seafloor, effluents, and accidents.

Physical disturbances to the seafloor: Walker Ridge Blocks 677 and 678 are 116 miles from the closest designated Topographic Features Stipulation Block (Sweet Bank); therefore, no adverse impacts are expected. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Effluents: Walker Ridge Blocks 677 and 678 are 116 miles from the closest designated Topographic Features Stipulation Block (Sweet Bank); therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed operations (refer to statistics in **Item 5, Water Quality**). Oil spills cause damage to benthic organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10-meter depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on corals. Because the crests of topographic features in the Northern Gulf of America are found below 10 meters, oil from a surface spill is not expected to reach their sessile biota. Oil from a subsurface spill is not applicable due to the distance of these blocks from a topographic area. The activities proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

If dispersants were utilized as a response method, the fate and effects of spilled oil would be impacted. Dispersants have been utilized in previous spill response efforts and were used extensively in the response to the Deepwater Horizon oil spill, with both surface and sub-surface applications. Reports on dispersant usage on surface oil indicate that a majority of the dispersed

oil remains in the top 10 meters of the water column, with 60 percent of the oil in the top two meters of water (McAuliffe et al, 1981; Lewis and Aurand, 1997; OCS Report BOEM 2017-007). Lubchenco et al. (2010) report that most chemically dispersed surface oil from the Deepwater Horizon explosion and oil spill remained in the top six meters of the water column where it mixed with surrounding waters and biodegraded (BOEM 2017-007). None of the topographic features or potentially sensitive biological features in the GOA are shallower than 10 meters (33 feet), and only the Flower Garden Banks are shallower than 20 meters (66 feet).

In one extraordinary circumstance with an unusual combination of meteorological and oceanographic conditions, a tropical storm forced a large volume of Deepwater Horizon oil spill-linked surface oil/dispersant mixture to as deep as 75 meters (246 feet), causing temporary exposure to mesophotic corals in the Pinnacle Trend area and leading to some coral mortality and sublethal impacts (Silva et al., 2015; BOEM 2017-007).

Additionally, concentrations of dispersed and dissolved oil in the Deepwater Horizon oil-spill subsea plume were reported to be in the parts per million range or less and were generally lower away from the water's surface and away from the well head (Adcroft et al., 2010; Haddad and Murawski, 2010; Joint Analysis Group, 2010; Lubchenco et al, 2010; BOEM 2017-007).

In the case of subsurface spills like a blowout or pipeline leak, dispersants may be injected at the seafloor. This will increase oil concentrations near the source but tend to decrease them further afield, especially at the surface. Marine organisms in the lower water column will be exposed to an initial increase of water-soluble oil compounds that will dilute in the water column over time (Lee et al., 2013a; NAS 2020).

Dispersant application involves a trade-off between decreasing the risk to the surface and shoreline habitat and increasing the risk beneath the surface. The optimal trade-off must account for various factors, including the type of oil spilled, the spill volume, the weather and sea state, the water depth, the degree of turbulence, and the relative abundance and life stages of organisms (NRC, 2005; NAS 2020).

Chemical dispersants may increase the risk of toxicity to subsurface organisms by increasing bioavailability of the oil. However, it is important to note that at the 1:20 dispersant-to-oil ratio recommended for use during response operations, the dispersants currently approved for use are far less acutely toxic than oil is. Toxicity of chemically dispersed oil is primarily due to the oil itself and its enhanced bioavailability (Lee et al., 2015; NAS 2020).

With the exception of special Federal management areas or designated exclusion areas, dispersants have been preapproved for surface use, which provides the USCG On-Scene Coordinator with the authority to approve the use of dispersants. However, that approval would only be granted upon completion of the protocols defined in the appropriate Area Contingency Plan (ACP) and the Regional Response Team (RRT) Dispersant Plan. The protocols include conducting an environmental benefit analysis to determine if the dispersant use will prevent a substantial threat to the public health or welfare or minimize serious environmental damage. The Regional Response Team would be notified immediately to provide technical support and guidance in determining if the dispersant use meets the established criteria and provides an environmental benefit. Additionally, there is currently no preapproval for subsea dispersant

injection and the USCG On-Scene Coordinator must approve use of this technology before any subsea application. Due to the unprecedented volume of dispersants applied for an extended period of time, the U.S. National Response Team has developed guidance for atypical dispersant operations to ensure that planning and response activities will be consistent with national policy (BOEM 2017-007).

Dispersants were used extensively in the response to the Deepwater Horizon oil spill, both surface and sub-surface applications. However, during a May 2016 significant oil spill (approximately 1,926 barrels) in the Gulf of America dispersants were not utilized as part of the response. The Regional Response Team was consulted and recommended that dispersants not be used, despite acknowledging the appropriate protocols were correctly followed and that there was a net environmental benefit in utilizing dispersants. This demonstrates that the federal authorities (USCG and RRT) will be extremely prudent in their decision-making regarding dispersant use authorizations.

Due to the distance of these blocks from a topographic area and the coverage of the activities proposed in this plan by Unocal's Regional OSRP (refer to information submitted in **Section 9**), impacts to topographic features from surface or sub-surface oil spills are not expected.

There are no other IPFs (including emissions and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact topographic features.

2. Pinnacle Trend Area Live Bottoms

Potential IPFs to pinnacle trend area live bottoms from the proposed operations include physical disturbances to the seafloor, emissions (noise / sound), effluents, and accidents.

Physical disturbances to the seafloor: Walker Ridge Blocks 677 and 678 are 256.9 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms. Although there is little information available on sound detection and sound-mediated behaviors for marine invertebrates, the overall impacts on pinnacle and low-relief feature communities from anthropogenic noise are expected to be negligible (BOEM 2017-009). Additionally, Walker Ridge Blocks 677 and 678 are 256.9 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Effluents: Walker Ridge Blocks 677 and 678 are 256.9 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed operations (refer to statistics in **Item 5, Water Quality**). Oil spills have the potential to foul benthic communities and cause lethal and sublethal effects on live bottom organisms. Oil

from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10-meter depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine organisms. Oil from a subsurface spill is not expected to impact pinnacle trend area live bottoms due to the distance of these blocks from a live bottom (pinnacle trend) area and the coverage of the activities proposed in this plan by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

If dispersants were utilized as a response method, the fate and effects of spilled oil would be impacted. A detailed discussion on dispersants, their usage during the Deepwater Horizon oil spill, and their impacts on different levels of benthic communities can be found in **Item 1**.

There are no other IPFs (including wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact a live bottom (pinnacle trend) area.

3. Eastern Gulf Live Bottoms

Potential IPFs on Eastern Gulf live bottoms from the proposed operations include physical disturbances to the seafloor, emissions (noise / sound), effluents, and accidents.

Physical disturbances to the seafloor: Walker Ridge Blocks 677 and 678 are not located in an area characterized by the existence of live bottoms, and this lease does not contain a Live-Bottom Stipulation requiring a photo documentation survey and survey report. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms. Although there is little information available on sound detection and sound-mediated behaviors for marine invertebrates, the overall impacts on pinnacle and low-relief feature communities from anthropogenic noise are expected to be negligible (BOEM 2017-009). Additionally, Walker Ridge Blocks 677 and 678 are not located in an area characterized by the existence of live bottoms; therefore, no adverse impacts are expected.

Effluents: Walker Ridge Blocks 677 and 678 are not located in an area characterized by the existence of live bottoms; therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed operations (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to live bottom organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10-meter depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine invertebrates. Oil from a subsurface spill is not expected to impact Eastern Gulf live bottoms due to the distance of these blocks from a live bottom area and coverage of the activities proposed in this plan by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

If dispersants were utilized as a response method, the fate and effects of spilled oil would be impacted. A detailed discussion on dispersants, their usage during the Deepwater Horizon oil spill, and their impacts on different levels of benthic communities can be found in **Item 1**.

There are no other IPFs (including wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact an Eastern Gulf live bottom area.

4. Deepwater Benthic Communities

There are no IPFs (including emissions (noise / sound), physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, and accidents) from the proposed operations that are likely to impact deepwater benthic communities.

Walker Ridge Blocks 677 and 678 are located in water depths of 984 feet (300 meters) or greater. At such depth high-density, deepwater benthic communities may sometimes be found. However, Walker Ridge Blocks 677 and 678 are approximately 61.2 miles from a known deepwater benthic community site (Keathley Canyon Block 216), listed in NTL 2009-G40. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed. Due to the distance from the closest known deepwater benthic community and because physical disturbances to the seafloor will be minimized by the use of a drillship, Unocal's proposed operations in Walker Ridge Blocks 677 and 678 are not likely to impact deepwater benthic communities.

Deepwater benthic communities would potentially be subject to detrimental effects from a catastrophic seafloor blowout due to sediment and oiled sediment from the initial event (BOEM 2017-007). However, this is unlikely due to the distancing requirements described in NTL 2009-G40. Additionally, the potential impacts would be localized due to the directional movement of oil plumes by water currents and the scattered, patchy distribution of sensitive habitats. Although widely dispersed, biodegraded particles of a passing oil plume might impact patchy habitats, no significant impacts would be expected to the Gulfwide population. Most deepwater benthic communities are expected to experience no impacts from a catastrophic seafloor blowout due to the directional movement of oil plumes by the water currents and their scattered, patchy distribution. Impacts may be expected if a spill were to occur close to a deepwater benthic habitat, however, beyond the localized area of impact particles would become increasingly biodegraded and dispersed. Localized impacts to deepwater benthic organisms would be expected to be mostly sublethal (BOEM 2017-007).

If dispersants were utilized as a response method, the fate and effects of spilled oil would be impacted. A detailed discussion on dispersants, their usage during the Deepwater Horizon oil spill, and their impacts on different levels of benthic communities can be found in **Item 1**.

5. Water Quality

Potential IPFs that could result in water quality degradation from the proposed operations in Walker Ridge Blocks 677 and 678 include disturbances to the seafloor, effluents, and accidents.

Physical disturbances to the seafloor: Bottom area disturbances resulting from the emplacement of drill rigs, the drilling of wells and the installation of platforms and pipelines would increase water-column turbidity and re-suspension of any accumulated pollutants, such

as trace metals and excess nutrients. This would cause short-lived impacts on water quality conditions in the immediate vicinity of the emplacement operations. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Effluents: Levels of contaminants in drilling muds and cuttings and produced water discharges, discharge-rate restrictions and monitoring and toxicity testing are regulated by the EPA NPDES permit, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to water quality. Additionally, an analysis of the best available information from the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 *Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico* (NMFS, 2020) concludes that exposures to toxicants in discharges from oil and gas activities are not likely to adversely affect ESA-listed species.

Accidents: IPFs related to OCS oil- and gas-related accidental events primarily involve drilling fluid spills, chemical spills, and oil spills.

Drilling Fluid Spills

Water-based fluid (WBF) and Synthetic-based fluid (SBF) spills may result in elevated turbidity, which would be short term, localized, and reversible. The WBF is normally discharged to the seafloor during riserless drilling, which is allowable due to its low toxicity. For the same reasons, a spill of WBF would have negligible impacts. The SBF has low toxicity, and the discharge of SBF is allowed to the extent that it adheres onto drill cuttings. Both USEPA Regions 4 and 6 permit the discharge of cuttings wetted with SBF as long as the retained SBF amount is below a prescribed percent, meets biodegradation and toxicity requirements, and is not contaminated with the formation oil or PAH. A spill of SBF may cause a temporary increase in biological oxygen demand and locally result in lowered dissolved oxygen in the water column. Also, a spill of SBF may release an oil sheen if formation oil is present in the fluid. Therefore, impacts from a release of SBF are considered to be minor. Spills of SBF typically do not require mitigation because SBF sinks in water and naturally biodegrades, seafloor cleanup is technically difficult, and SBF has low toxicity. (BOEM 2017-009)

Chemical Spills

Accidental chemical spills could result in temporary localized impacts on water quality, primarily due to changing pH. Chemicals spills are generally small volume compared with spills of oil and drilling fluids. During the period of 2007 to 2014, small chemical spills occurred at an average annual volume of 28 barrels, while large chemical spills occurred at an average annual volume of 758 barrels. These chemical spills normally dissolve in water and dissipate quickly through dilution with no observable effects. Also, many of these chemicals are approved to be commingled in produced water for discharge to the ocean, which is a permitted activity. Therefore, impacts from chemical spills are considered to be minor and do not typically require mitigation because of technical feasibility and low toxicity after dilution (BOEM 2017-009).

Oil Spills

Oil spills have the greatest potential of all OCS oil-and gas-related activities to affect water quality. Small spills (<1,000 barrels) are not expected to substantially impact water quality in coastal or offshore waters because the oil dissipates quickly through dispersion and weathering

while still at sea. Reasonably foreseeable larger spills ($\geq 1,000$ barrels), however, could impact water quality in coastal and offshore waters (BOEM 2017-007). However, based on data provided in the BOEM 2016 Update of Occurrence Rates for Offshore Oil Spills, it is unlikely that an accidental surface or subsurface spill of a significant volume would occur from the proposed operations. Between 2001 and 2015 OCS operations produced eight billion barrels of oil and spilled 0.062 percent of this oil, or one barrel for every 1,624 barrels produced. (The overall spill volume was almost entirely accounted for by the 2010 Deepwater Horizon blowout and subsequent discharge of 4.9 million barrels of oil. Additional information on unlikely scenarios and impacts from very large oil spills are discussed in the Catastrophic Spill Event Analysis white paper (BOEM 2017-007).

If a spill were to occur, the water quality of marine waters would be temporarily affected by the dissolved components and small oil droplets. Dispersion by currents and microbial degradation would remove the oil from the water column and dilute the constituents to background levels. Historically, changes in offshore water quality from oil spills have only been detected during the life of the spill and up to several months afterwards. Most of the components of oil are insoluble in water and therefore float. Dispersants will only be used if approved by the Regional Response Team in coordination with the RRT Dispersant Plan and RRT Biological Assessment for Dispersants.

Oil spills, regardless of size, may allow hydrocarbons to partition into the water column in a dissolved, emulsion, and/or particulate phase. Therefore, impacts from reasonably foreseeable oil spills are considered moderate. Mitigation efforts for oil spills may include booming, burning, and the use of dispersants (BOEM 2017-009).

These methods may cause short-term secondary impacts to water quality, such as the introduction of additional hydrocarbon into the dissolved phase through the use of dispersants and the sinking of hydrocarbon residuals from burning. Since burning and the use of dispersants put additional hydrocarbons into the dissolved phase, impacts to water quality after mitigation efforts are still considered to be moderate, because dissolved hydrocarbons extend down into the water column. This results in additional exposure pathways via ingestion and gill respiration and may result in acute or chronic effects to marine life (BOEM 2017-009).

Most oil-spill response strategies and equipment are based upon the simple principle that oil floats. However, as evident during the Deepwater Horizon explosion, oil spill, and response, this is not always true. Sometimes it floats and sometimes it suspends within the water column or sinks to the seafloor (BOEM 2017-009).

Oil that is chemically dispersed at the surface moves into the top six meters of the water column where it mixes with surrounding waters and begins to biodegrade (U.S. Congress, Office of Technology Assessment, 1990). Dispersant use, in combination with natural processes, breaks up oil into smaller components that allows them to dissipate into the water and degrade more rapidly (Nalco, 2010). Dispersant use must be in accordance with an RRT Preapproved Dispersant Use Manual and with any conditions outlined within an RRT's site-specific, dispersant approval given after a spill event. Consequently, dispersant use must be in accordance with the restrictions for specific water depths, distances from shore, and monitoring requirements. At this time,

neither the Region IV nor the Region VI RRT dispersant use manuals, which cover the GOA region, give preapproval for the application of dispersant use subsea (BOEM 2017-009).

The operations proposed in this plan will be covered by Unocal's Regional Oil Spill Response Plan, which discusses potential response actions in more detail (refer to information submitted in **Section 9**).

There are no other IPFs (including emissions, physical disturbances to the seafloor, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact water quality.

6. Fisheries

There are multiple species of fish in the Gulf of America, including the endangered and threatened species listed in **Table 1** at the beginning of this Environmental Impact Assessment. More information regarding the endangered gulf sturgeon (**Item 20.2**), oceanic whitetip shark (**Item 20.3**), and giant manta ray (**Item 20.4**) can be found below. Potential IPFs to fisheries as a result of the proposed operations in Walker Ridge Blocks 677 and 678 include physical disturbances to the seafloor, emissions (noise / sound), effluents, and accidents.

Physical disturbances to the seafloor: The emplacement of a structure or drilling rig results in minimal loss of bottom trawling area to commercial fishermen. Pipelines cause gear conflicts which result in losses of trawls and shrimp catch, business downtime and vessel damage. Most financial losses from gear conflicts are covered by the Fishermen's Contingency Fund (FCF). The emplacement and removal of facilities are not expected to cause significant adverse impacts to fisheries. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms by stimulating behavioral response, masking biologically important signals, causing temporary or permanent hearing loss (Popper et al., 2005; Popper et al., 2014), or causing physiological injury (e.g., barotrauma) resulting in mortality (Popper and Hastings, 2009). The potential for anthropogenic sound to affect any individual organism is dependent on the proximity to the source, signal characteristics, received peak pressures relative to the static pressure, cumulative sound exposure, species, motivation, and the receiver's prior experience. In addition, environmental conditions (e.g., temperature, water depth, and substrate) affect sound speed, propagation paths, and attenuation, resulting in temporal and spatial variations in the received signal for organisms throughout the ensonified area (Hildebrand, 2009).

Sound detection capabilities among fishes vary. For most fish species, it is reasonable to assume hearing sensitivity to frequencies below 500 Hertz (Hz) (Popper et al., 2003 and 2014; Popper and Hastings, 2009; Slabbekoorn et al., 2010; Radford et al., 2014). The band of greatest interest to this analysis, low-frequency sound (30-500 Hz), has come to be dominated by anthropogenic sources and includes the frequencies most likely to be detected by most fish species. For

example, the noise generated by large vessel traffic typically results from propeller cavitation and falls within 40-150 Hz (Hildebrand, 2009; McKenna et al., 2012). This range is similar to that of fish vocalizations and hearing and could result in a masking effect.

Masking occurs when background noise increases the threshold for a sound to be detected; masking can be partial or complete. If detection thresholds are raised for biologically relevant signals, there is a potential for increased predation, reduced foraging success, reduced reproductive success, or other effects. However, fish hearing and sound production may be adapted to a noisy environment (Wysocki and Ladich, 2005). There is evidence that fishes are able to efficiently discriminate between signals, extracting important sounds from background noise (Popper et al., 2003; Wysocki and Ladich, 2005). Sophisticated sound processing capabilities and filtering by the sound sensing organs essentially narrows the band of masking frequencies, potentially decreasing masking effects. In addition, the low-frequency sounds of interest propagate over very long distances in deep water, but these frequencies are quickly lost in water depths between $\frac{1}{2}$ and $\frac{1}{4}$ the wavelength (Ladich, 2013). This would suggest that the potential for a masking effect from low-frequency noise on behaviors occurring in shallow coastal waters may be reduced by the receiver's distance from sound sources, such as busy ports or construction activities.

Pulsed sounds generated by OCS oil-and gas-related activities (e.g., impact-driven piles and airguns) can potentially cause behavioral response, reduce hearing sensitivity, or result in physiological injury to fishes and invertebrate resources. However, there are no pulsed sound generation activities proposed for these operations.

Support vessel traffic, drilling, production facilities, and other sources of continuous sounds contribute to a chronic increase in background noise, with varying areas of effect that may be influenced by the sound level, frequencies, and environmental factors (Hildebrand, 2009; Slabbekoorn et al., 2010; McKenna et al., 2012). These sources have a low potential for causing physiological injury or injuring hearing in fishes and invertebrates (Popper et al., 2014). However, continuous sounds have an increased potential for masking biologically relevant sounds than do pulsed signals. The potential effects of masking on fishes and invertebrates are difficult to assess in the natural setting for communities and populations of species, but evidence indicates that the increase to background noise as a result of OCS oil and gas operations would be relatively minor. Therefore, it is expected that the cumulative impact to fishes and invertebrate resources would be minor and would not extend beyond localized disturbances or behavioral modification.

Despite the importance of many sound-mediated behaviors and the potential biological costs associated with behavioral response to anthropogenic sounds, many environmental and biological factors limit potential exposure and the effects that OCS oil-and gas-related sounds have on fishes and invertebrate resources. The overall impact to fishes and invertebrate resources due to anthropogenic sound introduced into the marine environment by OCS oil-and gas-related routine activities is expected to be minor.

Effluents: Effluents such as drilling fluids and cuttings discharges contain components and properties which are detrimental to fishery resources. Moderate petroleum and metal contamination of sediments and the water column can occur out to several hundred meters down current from the discharge point. Offshore discharges are expected to disperse and dilute

to very near background levels in the water column or on the seafloor within 3,000 meters of the discharge point and are expected to have negligible effect on fisheries. Additionally, an analysis of the best available information from the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 *Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico* (NMFS, 2020) concludes that exposures to toxicants in discharges from oil and gas activities are not likely to adversely affect ESA-listed species.

Accidents: Collisions between support vessels and ESA-listed fish, would be unusual events, however, should one occur, death or injury to ESA-listed fish is possible. Contract vessel operators can avoid protected aquatic species and reduce potential deaths by maintaining a vigilant watch and a distance of 50 meters or greater, with the exception of animals that approach the vessel. Vessel personnel should use a Gulf of America reference guide that includes identifying information on marine mammals, sea turtles, and other marine protected species (i.e., Endangered Species Act listed species such as Gulf sturgeon, giant manta ray, or oceanic whitetip shark) that may be encountered in the Gulf of America OCS.

Contract vessel operators will comply with the measures included in Appendix C of the NMFS Biological Opinion and requirements of the Protected Species Lease Stipulation, except under extraordinary circumstances when the safety of the vessel or crew is in doubt or the safety of life at sea is in question.

Should an ESA-listed fish (e.g., giant manta ray, oceanic whitetip shark, or Gulf sturgeon) be entrapped, entangled, or injured, personnel should contact the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov) and report all incidents to takereport.nmfsser@noaa.gov. After making the appropriate notifications, Unocal may call BSEE at (985) 722-7902 for questions or additional guidance on recovery assistance needs, continued monitoring requirements, and incidental report information which at minimum is detailed below. Additional information may be found at the following website: <https://www.fisheries.noaa.gov/report>. Any injured or dead protected species should also be reported to takereport.nmfsser@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

An accidental oil spill has the potential to cause some detrimental effects on fisheries; however, it is unlikely that such an event would occur from the proposed operations (refer to **Item 5**, Water Quality). The effects of oil on mobile adult finfish or shellfish would likely be sublethal and the extent of damage would be reduced to the capacity of adult fish and shellfish to avoid the spill, to metabolize hydrocarbons, and to excrete both metabolites and parent compounds. The activities proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

There are no other IPFs (including wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact fisheries.

7. Marine Mammals

The latest population estimates for the Gulf of America revealed that cetaceans of the continental shelf and shelf-edge were almost exclusively bottlenose dolphin and Atlantic spotted dolphin. Squid eaters, including dwarf and pygmy killer whale, Risso's dolphin, rough-toothed dolphin, and Cuvier's beaked whale, occurred most frequently along the upper slope in areas outside of anticyclones. The Rice's whale (née Gulf of America Bryde's whale) is the only commonly occurring baleen whale in the northern Gulf of America and has been sighted off western Florida and in the De Soto Canyon region. Florida manatees have been sighted along the entire northern GOA but are mainly found in the shallow coastal waters of Florida, which are unassociated with the proposed operations. A complete list of all endangered and threatened marine mammals in the GOA may be found in **Table 1** at the beginning of this Environmental Impact Assessment. More information regarding the endangered Rice's whale can be found in **Item 20.1** below. Potential IPFs to marine mammals as a result of the proposed operations in Walker Ridge Blocks 677 and 678 include emissions (noise / sound), effluents, discarded trash and debris, and accidents.

Emissions (noise / sound): Noises from drilling activities, support vessels and helicopters (i.e., non-impulsive anthropogenic sound) may elicit a startle reaction from marine mammals. This reaction may lead to disruption of marine mammals' normal activities. Stress may make them more vulnerable to parasites, disease, environmental contaminants, and/or predation (Majors and Myrick, 1990). Responses to sound exposure may include lethal or nonlethal injury, temporary hearing impairment, behavioral harassment and stress, or no apparent response. Noise-induced stress is possible, but it is little studied in marine mammals. Tyack (2008) suggests that a more significant risk to marine mammals from sound are these less visible impacts of chronic exposure. There is little conclusive evidence for long-term displacements and population trends for marine mammals relative to noise.

Vessels are the greatest contributors to increases in low-frequency ambient sound in the sea (Andrew et al. 2011). Sound levels and tones produced are generally related to vessel size and speed. Larger vessels generally emit more sound than smaller vessels, and vessels underway with a full load, or those pushing or towing a load, are noisier than unladen vessels. Cetacean responses to aircraft depend on the animals' behavioral state at the time of exposure (e.g., resting, socializing, foraging, or traveling) as well as the altitude and lateral distance of the aircraft to the animals (Luksenburg and Parsons 2009). The underwater sound intensity from aircraft is less than produced by vessels, and visually, aircraft are more difficult for whales to locate since they are not in the water and move rapidly (Richter et al. 2006). Perhaps not surprisingly then, when aircraft are at higher altitudes, whales often exhibit no response, but lower flying aircraft (e.g., approximately 500 meters or less) have been observed to elicit short-term behavioral responses (Luksenburg and Parsons 2009; NMFS 2017b; NMFS 2017f; Patenaude et al. 2002; Smultea et al. 2008a; Wursig et al. 1998). Thus, aircraft flying at low altitude, at close lateral distances and above shallow water elicit stronger responses than aircraft flying higher, at greater lateral distances and over deep water (Patenaude et al. 2002; Smultea et al. 2008a). Routine OCS helicopter traffic would not be expected to disturb animals for extended periods, provided pilots do not alter their flight patterns to more closely observe or photograph marine mammals. Helicopters, while flying offshore, generally maintain altitudes above 700 feet during transit to

and from a working area, and at an altitude of about 500 feet between platforms. The duration of the effects resulting from a startle response is expected to be short-term during routine flights, and the potential effects will be insignificant to sperm whales and Rice's whales. Therefore, we find that any disturbance that may result from aircraft associated with the proposed operations is not likely to adversely affect ESA-listed whales.

Drilling and production noise would contribute to increases in the ambient noise environment of the GOA, but they are not expected in amplitudes sufficient to cause either hearing or behavioral impacts (BOEM 2017-009). There is the possibility of short-term disruption of movement patterns and/or behavior caused by vessel noise and disturbance; however, these are not expected to impact survival and growth of any marine mammal populations in the GOA. Additionally, the National Marine Fisheries Service published a final recovery plan for the sperm whale, which identified anthropogenic noise as either a low or unknown threat to sperm whales in the GOA (USDOC, NMFS, 2010b). Sirenians (i.e., manatees) are not located within the area of operations. Additionally, there were no specific noise impact factors identified in the latest BOEM environmental impact statement for sirenians related to GOA OCS operations (BOEM 2017-009). See **Item 20.1** for details on the Rice's whale.

Impulsive sound impacts (i.e., pile driving, seismic surveys) are not included among the activities proposed under this plan.

Effluents: Drilling fluids and cuttings discharges contain components which may be detrimental to marine mammals. Most operational discharges are diluted and dispersed upon release. Any potential impact from drilling fluids would be indirect, either as a result of impacts on prey items or possibly through ingestion in the food chain (API, 1989).

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

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g., helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), *Think*

About It (previously All Washed Up: The Beach Litter Problem). Thereafter, all personnel will view the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Unocal management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

Accidents: Collisions between support vessels and marine mammals, including cetaceans, would be unusual events; however, should one occur, death or injury to marine mammals is possible. Contract vessel operators can avoid marine mammals and reduce potential deaths by maintaining a vigilant watch for marine mammals and maintaining a safe distance of 500 meters or greater from baleen whales, 100 meters or greater from sperm whales, and a distance of 50 meters or greater from all other aquatic protected species, with the exception of animals that approach the vessel. If unable to identify the marine mammal, the vessel will act as if it were a baleen whale and maintain a distance of 500 meters or greater. If a manatee is sighted, all vessels in the area will operate at “no wake/idle” speeds in the area, while maintaining proper distance. When assemblages of cetaceans are observed, including mother/calf pairs, vessel speeds will be reduced to 10 knots or less. Vessel personnel should use a Gulf of America reference guide that includes identifying information on marine mammals, sea turtles, and other marine protected species (i.e., Endangered Species Act listed species such as Gulf sturgeon, giant manta ray, or oceanic whitetip shark) that may be encountered in the Gulf of America OCS.

Contract vessel operators will comply with the measures included in Appendix C of the NMFS Biological Opinion and requirements of the Protected Species Lease Stipulation, except under extraordinary circumstances when the safety of the vessel or crew is in doubt or the safety of life at sea is in question.

Vessel personnel must report sightings of any injured or dead protected marine mammal species immediately, regardless of whether the injury or death is caused by their vessel, to the NMFS Southeast Marine Mammal Stranding Hotline at (877) WHALE-HELP (877-942-5343). Additional information may be found at the following website: <https://www.fisheries.noaa.gov/report>. Any injured or dead protected species should also be reported to takereport.nmfs@noaa.gov. In addition, if the injury or death was caused by a collision with the operator’s vessel, an entrapment within the operator’s equipment or vessel (e.g. moon pool), or an entanglement within the operator’s equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

These proposed operations will utilize a moon pool(s) to conduct various subsea activities. Unocal’s contractor or company representative will provide a dedicated crew member to monitor and continually survey the moon pool area during the operations for marine mammals. If any marine mammal is detected in the moon pool, Unocal will cease operations and contact NMFS at nmfs.psoreview@noaa.gov and BSEE at protectedspecies@bsee.gov and 985-722-7902 for additional guidance and incident report information.

Oil spills have the potential to cause sublethal oil-related injuries and spill-related deaths to marine mammals. However, it is unlikely that an accidental oil spill would occur from the

proposed operations (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could impact cetacean behavior and/or distribution, thereby causing additional stress to the animals. The effect of oil dispersants on cetaceans is not known. Removing oil from the surface would reduce the likelihood of oil adhering to marine mammals. Laboratory experiments have shown that the dispersants used during the Deepwater Horizon response are cytotoxic to sperm whale cells; however, it is difficult to determine actual exposure levels in the GOA. Therefore, dispersants will only be used if approved by the Regional Response Team in coordination with the RRT Dispersant Plan and RRT Biological Assessment for Dispersants. The acute toxicity of oil dispersant chemicals included in Unocal's OSRP is considered to be low when compared with the constituents and fractions of crude oils and diesel products. The activities proposed in this plan will be covered by Unocal's OSRP (refer to information submitted in accordance with **Section 9**).

The NMFS Office of Protected Resources coordinates agency assessment of the need for response and leads response efforts for spills that may impact cetaceans. If a spill may impact cetaceans, NMFS Protected Resources Contacts should be notified (see contact details below), and they will initiate notification of other relevant parties.

NMFS Protected Resources Contacts for the Gulf of America:

- Marine mammals – Southeast emergency stranding hotline 1-877-433-8299
- Other endangered or threatened species – ESA section 7 consulting biologist: nmfs.ser.emergency.consult@noaa.gov

There are no other IPFs (including physical disturbances to the seafloor) from the proposed operations that are likely to impact marine mammals.

8. Sea Turtles

GulfCet II studies sighted most loggerhead, Kemp's ridley and leatherback sea turtles over shelf waters. Historically these species have been sighted up to the shelf's edge. They appear to be more abundant east of the Mississippi River than they are west of the river (Fritts et al., 1983b; Lohoefer et al., 1990). Deep waters may be used by all species as a transitory habitat. A complete list of endangered and threatened sea turtles in the GOA may be found in **Table 1** at the beginning of this Environmental Impact Assessment. Additional details regarding the loggerhead sea turtle's critical habitat in the GOA are located in **Item 20.5**. Potential IPFs to sea turtles as a result of the proposed operations include emissions (noise / sound), effluents, discarded trash and debris, and accidents.

Emissions (noise / sound): Noise from drilling activities, support vessels, and helicopters (i.e., non-impulsive anthropogenic sound) may elicit a startle reaction from sea turtles, but this is a temporary disturbance. Responses to sound exposure may include lethal or nonlethal injury, temporary hearing impairment, behavioral harassment and stress, or no apparent response. Vessels are the greatest contributors to increases in low-frequency ambient sound in the sea (Andrew et al. 2011). Sound levels and tones produced are generally related to vessel size and speed. Larger vessels generally emit more sound than smaller vessels, and vessels underway with a full load, or those pushing or towing a load, are noisier than unladen vessels. Routine OCS helicopter traffic would not be expected to disturb animals for extended periods, provided pilots

do not alter their flight patterns to more closely observe or photograph marine mammals. Helicopters, while flying offshore, generally maintain altitudes above 700 feet during transit to and from a working area, and at an altitude of about 500 feet between platforms. The duration of the effects resulting from a startle response is expected to be short-term during routine flights and the potential effects will be insignificant to sea turtles. Therefore, we find that any disturbance that may result from aircraft associated with the proposed operations is not likely to adversely affect sea turtles. Construction and operational sounds other than pile driving should have insignificant effects on sea turtles; effects would be limited to short-term avoidance of construction activity itself rather than the sound produced. As a result, sound sources associated with support vessel movement as part of the proposed operations are insignificant and therefore are not likely to adversely affect sea turtles.

Overall noise impacts on sea turtles from the proposed operations are expected to be negligible to minor depending on the location of the animal(s) relative to the sound source and the frequency, intensity, and duration of the source. The National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion Appendix C explains how operators must implement measures to minimize the risk of vessel strikes to protected species and report observations of injured or dead protected species. This guidance should also minimize the chance of sea turtles being subject to the increased noise level of a service vessel in very close proximity.

Effluents: Drilling fluids and cuttings discharges are not known to be lethal to sea turtles. Most operational discharges are diluted and dispersed upon release. Any potential impact from drilling fluids would be indirect, either as a result of impacts on prey items or possibly through ingestion in the food chain (API, 1989).

Discarded trash and debris: Both entanglement in, and ingestion of, debris have caused the death or serious injury of sea turtles (Balazs, 1985). The limited amount of marine debris, if any, resulting from the proposed operations is not expected to substantially harm sea turtles. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies, including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

Informational placards will be posted on all vessels and facilities having sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g., helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video (or Microsoft PowerPoint presentation), *Think About It (previously All Washed Up: The Beach Litter Problem)*. Thereafter, all personnel will view

the marine trash and debris training video annually. Offshore personnel will also receive an explanation from Unocal management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

Accidents: Collisions between support vessels and sea turtles would be unusual events; however, should one occur, death or injury to sea turtles is possible. Contract vessel operators can avoid sea turtles and reduce potential deaths by maintaining a vigilant watch for sea turtles and maintaining a safe distance of 50 meters or greater when they are sighted, with the exception of sea turtles that approach the vessel. Vessel crews should use a reference guide to help identify the five species of sea turtles that may be encountered in the Gulf of America OCS as well as other marine protected species (i.e., Endangered Species Act listed species). Contract vessel operators will comply with the measures included in Appendix C of the NMFS Biological Opinion and requirements of the Protected Species Lease Stipulation, except under extraordinary circumstances when the safety of the vessel or crew is in doubt or the safety of life at sea is in question.

Vessel crews must report sightings of any injured or dead protected sea turtle species immediately, regardless of whether the injury or death is caused by their vessel, to the State Coordinators for the Sea Turtle Stranding and Salvage Network (STSSN) at http://www.sefsc.noaa.gov/species/turtles/stranding_coordinators.htm (phone numbers vary by state). Additional information may be found at the following website: <https://www.fisheries.noaa.gov/report>. Any injured or dead protected species should also be reported to takereport.nmfs@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

These proposed operations will utilize a moon pool(s) to conduct various subsea activities. Unocal's contractor or company representative will provide a dedicated crew member to monitor and continually survey the moon pool area during the operations for sea turtles. If any sea turtle is detected in the moon pool, Unocal will cease operations and contact NMFS at nmfs.psoreview@noaa.gov and BSEE at protectedspecies@bsee.gov and 985-722-7902 for additional guidance and incidental report information. The procedures found in Appendix J of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion will be employed to free entrapped or entangled marine life safely.

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

in this plan will be covered by Unocal's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Section 9**).

The NMFS Office of Protected Resources coordinates agency assessment of the need for response and leads response efforts for spills that may impact sea turtles. If a spill may impact sea turtles, the following NMFS Protected Resources Contacts should be notified, and they will initiate notification of other relevant parties.

- Dr. Brian Stacy at brian.stacy@noaa.gov and 352-283-3370 (cell); or
- Stacy Hargrove at stacy.hargrove@noaa.gov and 305-781-7453 (cell)

There are no other IPFs (including physical disturbances to the seafloor) from the proposed operations that are likely to impact sea turtles.

9. Air Quality

Potential IPFs to air quality as a result of the proposed operations include accidents.

The projected air emissions identified in **Section 8** are not expected to affect the OCS air quality primarily due to distance to the shore or to any Prevention of Significant Deterioration Class I air quality area such as the Breton Wilderness Area. Walker Ridge Blocks 677 and 678 are beyond the 200-kilometer (124 mile) buffer for the Breton Wilderness Area and are 185 miles from the coastline. Therefore, no special mitigation, monitoring, or reporting requirements apply with respect to air emissions.

Accidents and blowouts can release hydrocarbons or chemicals, which could cause the emission of air pollutants. However, these releases should not impact onshore air quality because of the prevailing atmospheric conditions, emission height, emission rates, and the distance of Walker Ridge Blocks 677 and 678 from the coastline.

There are no other IPFs (including effluents, physical disturbances to the seafloor, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact air quality.

10. Shipwreck Sites (known or potential)

In accordance with BOEM NTL 2005-G07, Unocal will submit an archaeological resource report per 30 CFR 550.194 if directed to do so by the Regional Director.

Potential IPFs to known or unknown shipwreck sites as a result of the proposed operations in Walker Ridge Blocks 677 and 678 include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: A drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed. Because physical disturbances to the seafloor will be minimized by the use of a drillship, Unocal's proposed operations in Walker Ridge Blocks 677 and 678 that are not likely to impact shipwreck sites.

Additionally, Walker Ridge Blocks 677 and 678 are not located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks. Should Unocal discover any evidence of a shipwreck, they will immediately halt operations within a 1000-foot radius, report to BOEM within 48 hours, and make every reasonable effort to preserve and protect that cultural resource.

Accidents: An accidental oil spill has the potential to cause some detrimental effects to shipwreck sites if the release were to occur subsea. However, it is unlikely that an accidental oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Unocal's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Section 9**).

There are no other IPFs (including emissions, effluents, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact shipwreck sites.

11. Prehistoric Archaeological Sites

In accordance with BOEM NTL 2005-G07, Unocal will submit an archaeological resource report per 30 CFR 550.194 if directed to do so by the Regional Director.

Potential IPFs to prehistoric archaeological sites as a result of the proposed operations in Walker Ridge Blocks 677 and 678 include disturbances to the seafloor and accidents. Walker Ridge Blocks 677 and 678 are located outside the Archaeological Prehistoric high probability line, therefore, no adverse impacts are expected. Should Unocal discover any object of prehistoric archaeological significance, they will immediately halt operations within a 1000-foot radius, report to BOEM within 48 hours, and make every reasonable effort to preserve and protect that cultural resource.

Physical disturbances to the seafloor: A drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed. Because physical disturbances to the seafloor will be minimized by the use of a drillship, Unocal's proposed operations in Walker Ridge Blocks 677 and 678 are not likely to impact prehistoric archaeological sites.

Accidents: An accidental oil spill has the potential to cause some detrimental effects to prehistoric archaeological sites if the release were to occur subsea. However, it is unlikely that an accidental oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Unocal's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Section 9**).

There are no other IPFs (including emissions, effluents, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact prehistoric archaeological sites.

Vicinity of Offshore Location

12. Essential Fish Habitat (EFH)

Potential IPFs to EFH as a result of the proposed operations in Walker Ridge Blocks 677 and 678 include physical disturbances to the seafloor, effluents, and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of America.

Physical disturbances to the seafloor: Turbidity and sedimentation resulting from the bottom disturbing activities included in the proposed operations would be short term and localized. Fish are mobile and would avoid these temporarily suspended sediments. Additionally, the Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf Pinnacle Trend Stipulation have been put in place to minimize the impacts of bottom disturbing activities. Additionally, a drillship is being used for the proposed operations; therefore, only an

insignificant amount of seafloor will be disturbed. Therefore, the bottom disturbing activities from the proposed operations would have a negligible impact on EFH.

Effluents: The Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf Pinnacle Trend Stipulation would prevent most of the potential impacts on live-bottom communities and EFH from operational waste discharges. Levels of contaminants in drilling muds and cuttings and produced-water discharges, discharge-rate restrictions, and monitoring and toxicity testing are regulated by the EPA NPDES permit, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to EFH.

Accidents: An accidental oil spill has the potential to cause some detrimental effects on EFH. Oil spills that contact coastal bays and estuaries, as well as OCS waters when pelagic eggs and larvae are present, have the greatest potential to affect fisheries. However, it is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

There are no other IPFs (including emissions and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact essential fish habitat.

13. Marine and Pelagic Birds

Potential IPFs to marine birds as a result of the proposed operations include emissions (air, noise / sound), accidental oil spills, and discarded trash and debris from vessels and the facilities.

Emissions:

Air Emissions

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

Noise / Sound Emissions

The OCS oil-and gas-related helicopters and vessels have the potential to cause noise and disturbance. However, flight altitude restrictions over sensitive habitat, including that of birds, may make serious disturbance unlikely. Birds are also known to habituate to noises, including airport noise. It is an assumption that the OCS oil-and gas-related vessel traffic would follow regular routes; if so, seabirds would find the noise to be familiar. Therefore, the impact of OCS oil-and gas-related noise from helicopters and vessels to birds would be expected to be negligible.

The use of explosives for decommissioning activities may potentially kill one or more birds from barotrauma if a bird (or several birds because birds may occur in a flock) is present at the location of the severance. For the impact of underwater sound, a threshold of 202 dB sound exposure level (SEL) for injury and 208 dB SEL for barotrauma was recommended for the *Brahmophagus marmoratus*, a diving seabird (USDOI, FWS, 2011). However, the use of explosive severance of facilities for decommissioning are not included in these proposed operations, therefore these impacts are not expected.

Accidents: An oil spill would cause localized, low-level petroleum hydrocarbon contamination. However, it is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). Marine and pelagic birds feeding at the spill location may experience chronic, nonfatal, physiological stress. It is expected that few, if any, coastal and marine birds would actually be affected to that extent. The activities proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Marine and pelagic birds could become entangled and snared in discarded trash and debris, or ingest small plastic debris, which can cause permanent injuries and death. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies, including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

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

ESA bird species: Seven species found in the GOA are listed under the ESA. BOEM consults on these species and requires mitigations that would decrease the potential for greater impacts due to small population size.

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

14. Public Health and Safety Due to Accidents.

There are no IPFs (including emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, and accidents, including an accidental H₂S release) from the proposed operations that are likely to impact public health and safety. In accordance with

NTL No.'s 2008-G04, 2009-G27, and 2009-G31, sufficient information is included in **Section 4** to justify our request that our proposed operations be classified by BSEE as H₂S absent.

Coastal and Onshore

15. Beaches

Potential IPFs to beaches from the proposed operations include accidents and discarded trash and debris.

Accidents: Oil spills contacting beaches would have impacts on the use of recreational beaches and associated resources. Due to the distance from shore (185 miles) and the response capabilities that would be implemented, no significant adverse impacts are expected. The operations proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Trash on the beach is recognized as a major threat to the enjoyment and use of beaches. There will only be a limited amount of marine debris, if any, resulting from the proposed operations. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies, including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

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

There are no other IPFs (including emissions, effluents, physical disturbances to the seafloor, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact beaches.

16. Wetlands

Potential IPFs to wetlands from the proposed operations include accidents and discarded trash and debris.

Accidents: It is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). Due to the distance from shore (185 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: There will only be a limited amount of marine debris, if any, resulting from the proposed operations. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies, including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

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

There are no other IPFs (including emissions, effluents, physical disturbances to the seafloor, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact wetlands.

17. Shore Birds and Coastal Nesting Birds

Potential IPFs to shore birds and coastal nesting birds as a result of the proposed operations include accidents and discarded trash and debris.

Accidents: Oil spills could impact shore birds and coastal nesting birds. However, it is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). Given the distance from shore (185 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Shore birds and coastal nesting birds are highly susceptible to entanglement in floating, submerged, and beached marine debris: specifically, plastics. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

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

There are no other IPFs (including emissions, effluents, physical disturbances to the seafloor, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact shore birds and coastal nesting birds.

18. Coastal Wildlife Refuges

Potential IPFs to coastal wildlife refuges as a result of the proposed operations include accidents and discarded trash and debris.

Accidents: An accidental oil spill from the proposed operations could impact coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed operations (refer to Item 5, Water Quality). Due to the distance from shore (185 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act and regulations imposed by various agencies, including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

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

There are no other IPFs (including emissions, effluents, physical disturbances to the seafloor, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact coastal wildlife refuges.

19. Wilderness Areas

Potential IPFs to wilderness areas as a result of the proposed operations include accidents and discarded trash and debris.

Accidents: An accidental oil spill from the proposed operations could impact wilderness areas. However, it is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5, Water Quality**). Due to the distance from the nearest designated Wilderness Area (245.7 miles) and the response capabilities that would be implemented, no significant adverse impacts are expected. The operations proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

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

There are no other IPFs (including emissions, effluents, physical disturbances to the seafloor, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact wilderness areas.

20. Other Environmental Resources Identified

20.1 – Rice’s Whale (née Gulf of America Bryde’s Whale)

The Bryde’s whale, also known as the Bryde’s whale complex, is a collection of baleen whales that are still being researched to determine if they are the same species or if they are individual species of whales. In 2021, the Rice’s whale, formerly known as the Gulf of America Bryde’s whale, was determined to be a separate species from other Bryde’s whales. There are less than 100 Rice’s whales living in the Gulf of America year-round. These whales retain all the protections of the Gulf of America Bryde’s whale under the Endangered Species Act while the regulations are being updated to reflect the name change.

The Rice’s whale (née Gulf of America Bryde’s whale) is the only commonly occurring baleen whale in the northern Gulf of America and has been sighted off western Florida and in the De Soto Canyon region. The Rice’s whale area is over 260.6 miles from the proposed operations. Additionally, vessel traffic associated with the proposed operations will not flow through the Rice’s whale area. Therefore, there are no IPFs from the proposed operations that are likely to impact the Rice’s whale. Additional information on marine mammals may be found in **Item 7**.

20.2 – Gulf Sturgeon

The Gulf sturgeon resides primarily in inland estuaries and rivers from Louisiana to Florida and a small population of the species enters the Gulf of America seasonally in western Florida. Potential IPFs to the Gulf sturgeon from the proposed operations include accidents, emissions (noise / sound), and discarded trash and debris. Additional information on ESA-listed fish may be found in **Item 6**.

Accidents: Collisions between support vessels and the Gulf sturgeon would be unusual events; however, should one occur, death or injury to the Gulf sturgeon is possible. Contract vessel operators can avoid protected aquatic species and reduce potential deaths by maintaining a vigilant watch and a distance of 50 meters or greater, with the exception of animals that approach the vessel. Vessel personnel should use a Gulf of America reference guide that includes identifying information on marine mammals, sea turtles, and other marine protected species

(i.e., Endangered Species Act listed species such as Gulf sturgeon, giant manta ray, or oceanic whitetip shark) that may be encountered in the Gulf of America OCS.

Contract vessel operators will comply with the measures included in Appendix C of the NMFS Biological Opinion and requirements of the Protected Species Lease Stipulation, except under extraordinary circumstances when the safety of the vessel or crew is in doubt or the safety of life at sea is in question.

Should an ESA-listed fish (e.g., giant manta ray, oceanic whitetip shark, or Gulf sturgeon) be entrapped, entangled, or injured, personnel should contact the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov) and report all incidents to takereport.nmfs@noaa.gov. After making the appropriate notifications, Unocal may call BSEE at (985) 722-7902 for questions or additional guidance on recovery assistance needs, continued monitoring requirements, and incidental report information which at minimum is detailed below. Additional information may be found at the following website: <https://www.fisheries.noaa.gov/report>. Any injured or dead protected species should also be reported to takereport.nmfs@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

Due to the distance from the nearest identified Gulf sturgeon critical habitat (260.6 miles) and the response capabilities that would be implemented during a spill, no significant adverse impacts are expected to the Gulf sturgeon. Considering the information from the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, the location of this critical habitat in relation to proposed operations, the likely dilution of oil reaching nearshore areas, and the on-going weathering and dispersal of oil over time, we do not anticipate the effects from oil spills will appreciably diminish the value of Gulf sturgeon designated critical habitat for the conservation of the species. The operations proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms. The National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion found that construction and operational sounds other than pile driving will have insignificant effects on Gulf sturgeon (NMFS, 2020). There are no pile driving activities associated with the proposed operations, therefore noise impacts are not expected to significantly affect Gulf sturgeon

Discarded trash and debris: Trash and debris are not expected to impact the Gulf sturgeon. There will only be a limited amount of marine debris, if any, resulting from the proposed

operations. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

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

There are no other IPFs (including effluents, physical disturbances to the seafloor, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact the Gulf sturgeon.

20.3 – Oceanic Whitetip Shark

Oceanic whitetip sharks may be found in tropical and subtropical waters around the world, including the Gulf of America (Young 2016). According to the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, Essential Fish Habitat (EFH) for the oceanic whitetip shark includes localized areas in the central Gulf of America and Florida Keys. Oceanic whitetip sharks were listed as threatened under the Endangered Species Act in 2018 due to worldwide overfishing. Oceanic whitetip sharks had an abundant worldwide population, which has been threatened in recent years by inadequate regulatory measures governing fisheries; therefore, there is little research regarding the impact of oil and gas operations on oceanic whitetip sharks (NMFS, 2020). IPFs that have been determined by NMFS to be discountable to oceanic whitetip sharks include vessel strike, emissions (noise / sound), discharges, entanglement and entrapment, and marine debris. Potential IPFs to oceanic whitetip sharks as a result of the proposed operations in Walker Ridge Blocks 677 and 678 include accidents. Additional information on ESA-listed fish may be found in **Item 6**.

Accidents: Collisions between support vessels and the oceanic whitetip shark would be unusual events, however, should one occur, death or injury to the oceanic whitetip shark is possible. Contract vessel operators can avoid protected aquatic species and reduce potential deaths by

maintaining a vigilant watch and a distance of 50 meters or greater, with the exception of animals that approach the vessel. Vessel personnel should use a Gulf of America reference guide that includes identifying information on marine mammals, sea turtles, and other marine protected species (i.e., Endangered Species Act listed species such as Gulf sturgeon, giant manta ray, or oceanic whitetip shark) that may be encountered in the Gulf of America OCS.

Contract vessel operators will comply with the measures included in Appendix C of the NMFS Biological Opinion and requirements of the Protected Species Lease Stipulation, except under extraordinary circumstances when the safety of the vessel or crew is in doubt or the safety of life at sea is in question.

Should an ESA-listed fish (e.g., giant manta ray, oceanic whitetip shark, or Gulf sturgeon) be entrapped, entangled, or injured, personnel should contact the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov) and report all incidents to takereport.nmfs@noaa.gov. After making the appropriate notifications, Unocal may call BSEE at (985) 722-7902 for questions or additional guidance on recovery assistance needs, continued monitoring requirements, and incidental report information which at minimum is detailed below. Additional information may be found at the following website: <https://www.fisheries.noaa.gov/report>. Any injured or dead protected species should also be reported to takereport.nmfs@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

There is little information available on the impacts of oil spills or dispersants on oceanic whitetip sharks. It is expected that exposure of oil or dispersants to oceanic whitetip sharks would likely result in effects similar to other marine species, including fitness reduction and the possibility of mortality (NMFS, 2020). Due to the sparse population in the Gulf of America, it is possible that a small number of oceanic whitetip sharks could be impacted by an oil spill. However, it is unlikely that such an event would occur from the proposed operations (refer to **Item 5**, Water Quality). The operations proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: There is little available information on the effects of marine debris on oceanic whitetip sharks. Since these sharks are normally associated with surface waters, they may be susceptible to entanglement. However, due to the small, widely dispersed, and highly mobile population in the Gulf of America, and the localized and patchy distribution of marine debris, it is extremely unlikely that oceanic whitetip sharks would be impacted by marine debris.

There will only be a limited amount of marine debris, if any, resulting from the proposed operations. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies, including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

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

There are no IPFs (including effluents, physical disturbances to the seafloor, and wastes sent to shore for treatment or disposal) from the proposed operations that are likely to impact oceanic whitetip sharks.

20.4 – Giant Manta Ray

According to the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, the giant manta ray lives in tropical, subtropical, and temperate oceanic waters and productive coastlines throughout the Gulf of America. While uncommon in the Gulf of America, there is a population of approximately 70 giant manta rays in the Flower Garden Banks National Marine Sanctuary (Miller and Klimovich 2017). Giant manta rays were listed as threatened under the Endangered Species Act in 2018 due to worldwide overfishing. Giant manta rays had an abundant worldwide population, which has been threatened in recent years by inadequate regulatory measures governing fisheries; therefore, there is little research regarding the impact of oil and gas operations on giant manta rays (NMFS, 2020). IPFs that have been determined by NMFS to be discountable to giant manta rays include vessel strike, emissions (noise / sound), discharges, entanglement and entrapment, and marine debris. Potential IPFs to giant manta rays as a result of the proposed operations in Walker Ridge Blocks 677 and 678 include accidents. Additional information on ESA-listed fish may be found in **Item 6**.

Accidents: Collisions between support vessels and the giant manta ray would be unusual events, however, should one occur, death or injury to the giant manta ray is possible. Contract vessel operators can avoid protected aquatic species and reduce potential deaths by maintaining a vigilant watch and a distance of 50 meters or greater, with the exception of animals that approach the vessel. Vessel personnel should use a Gulf of America reference guide that includes identifying information on marine mammals, sea turtles, and other marine protected species (i.e., Endangered Species Act listed species such as Gulf sturgeon, giant manta ray, or oceanic whitetip shark) that may be encountered in the Gulf of America OCS.

Contract vessel operators will comply with the measures included in Appendix C of the NMFS Biological Opinion and requirements of the Protected Species Lease Stipulation, except under extraordinary circumstances when the safety of the vessel or crew is in doubt or the safety of life at sea is in question.

Should an ESA-listed fish (e.g., giant manta ray, oceanic whitetip shark, or Gulf sturgeon) be entrapped, entangled, or injured, personnel should contact the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov) and report all incidents to takereport.nmfs@noaa.gov. After making the appropriate notifications, Unocal may call BSEE at (985) 722-7902 for questions or additional guidance on recovery assistance needs, continued monitoring requirements, and incidental report information which at minimum is detailed below. Additional information may be found at the following website: <https://www.fisheries.noaa.gov/report>. Any injured or dead protected species should also be reported to takereport.nmfs@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

There is little information available on the impacts of oil spills or dispersants on giant manta rays. It is expected that exposure of oil or dispersants to giant manta rays would likely result in effects similar to other marine species, including fitness reduction and the possibility of mortality (NMFS, 2020). It is possible that a small number of giant manta rays could be impacted by an oil spill in the Gulf of America. However, due to the distance to the Flower Garden Banks (125.5 miles), the low population dispersed throughout the Gulf of America, and the response capabilities that would be implemented during a spill, no significant adverse impacts are expected to impact giant manta rays. Additionally, it is unlikely that such an event would occur from the proposed operations (refer to **Item 5**, Water Quality). The operations proposed in this plan will be covered by Unocal's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: There is little available information on the effects of marine debris on giant manta rays. Since these sharks are normally associated with surface waters, they may be susceptible to entanglement. However, due to the small, widely dispersed, and highly mobile population in the Gulf of America, and the localized and patchy distribution of marine debris, it is extremely unlikely that oceanic whitetip sharks would be impacted by marine debris.

There will only be a limited amount of marine debris, if any, resulting from the proposed operations. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies, including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Unocal will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion and also avoid accidental loss of solid waste items by maintaining waste management plans,

manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Unocal will also collect and remove flotsam resulting from activities related to proposed operations.

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

There are no other IPFs (including effluents, physical disturbances to the seafloor, and wastes sent to shore for disposal) from the proposed operations that are likely to impact giant manta rays.

20.5 – Loggerhead Sea Turtle

The loggerhead sea turtles inhabit continental shelf and estuarine environments throughout the temperate and tropical regions of the Atlantic Ocean, with nesting beaches along the northern and western Gulf of America. NMFS issued a Final Rule in 2014 (79 FR 39855) designating a critical habitat including 38 marine areas within the Northwest Atlantic Ocean, with seven of those areas residing within the Gulf of America. These areas contain one or a combination of habitat types: nearshore reproductive habitats, winter areas, breeding areas, constricted migratory corridors, and/or *Sargassum* habitats. Winter areas, breeding areas, and constricted migratory corridors are not located in the planning area.

There are multiple IPFs that may impact loggerhead sea turtles (see **Item 8**). However, the closest loggerhead nearshore reproductive critical habitat is located 306.1 miles from Walker Ridge Blocks 677 and 678; therefore, no adverse impacts are expected. Additionally, considering the information from the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, we do not expect proposed operations to affect the ability of *Sargassum* to support adequate prey abundance and cover for loggerhead turtles.

20.6 - Protected Corals

Protected coral habitats, including designated critical habitats, are noncontiguous and occur in the Flower Garden Banks National Marine Sanctuary and Florida. Five banks in the Flower Garden Banks National Marine Sanctuary have been designated as critical habitats for boulder star (*Orbicella franksi*), lobed star (*Orbicella annularis*), and mountainous star (*Orbicella faveolate*) corals. Elkhorn coral can also be found in the Flower Garden Banks, though the area is not a designated critical habitat for this coral. Various coastal counties in Florida are also designated as critical habitats for protected coral species. These coral habitats are located outside of the planning area and are not expected to be impacted by the proposed operations. The following

table comprehensively details the designated critical habitat for each protected coral species in the Flower Garden Banks National Marine Sanctuary and Florida.

		Protected Corals						
		Elkhorn Coral <i>Acopora palmate</i>	Staghorn Coral <i>Acopora cervicornis</i>	Boulder Star Coral <i>Orbicella franksi</i>	Lobed Star Coral <i>Orbicella annularis</i>	Mountainous Star Coral <i>Orbicella faveolate</i>	Rough Cactus Coral <i>Mycetophyllia ferox</i>	Pillar Coral <i>Dendrogyra cylindrus</i>
Designated Critical Habitat	Flower Garden Banks National Marine Sanctuary							
	East Flower Garden Bank			X	X	X		
	West Flower Garden Bank			X	X	X		
	Rankin Bank			X	X	X		
	Rankin Bank			X	X	X		
	Geyer Bank			X	X	X		
	McGrail Bank			X	X	X		
	Florida (outside of planning area)							
	Martin County					X		
	Palm Beach County	X	X	X	X	X		X
	Broward County	X	X	X	X	X	X	X
	Miami-Dade County	X	X	X	X	X	X	X
	Monroe County	X	X	X	X	X	X	X

Potential IPFs to protected corals from the proposed operations include accidents.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed operations (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to corals only if the oil contacts the organisms. Due to the distance from the Flower Garden Banks National Marine Sanctuary (125.5 miles) and other critical coral habitats, no adverse impacts are expected. The operations proposed in this plan will be covered by Unocal’s Regional OSRP (refer to information submitted in **Section 9**).

There are no other IPFs (including emissions, effluents, physical disturbances to the seafloor, and wastes sent to shore for disposal) from the proposed operations that are likely to impact protected corals.

20.7 - Endangered Beach Mice

There are four subspecies of endangered beach mouse that are found in the dune systems along parts of Alabama and northwest Florida. Due to the location of Walker Ridge Blocks 677 and 678 and the beach mouse critical habitat (above the intertidal zone), there are no IPFs that are likely to impact endangered beach mice.

20.8 - Navigation

The current system of navigation channels around the northern GOA is believed to be generally adequate to accommodate traffic generated by the future Gulfwide OCS Program. As exploration and development activities increase on deepwater leases in the GOA, port channels may need to be expanded to accommodate vessels with deeper drafts and longer ranges. However, current navigation channels will not be changed, and new channels will not be required as a result of the operations proposed in this plan.

(C) Impacts on proposed operations

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

(D) Environmental Hazards

During the hurricane season, June through November, the Gulf of America is impacted by an average of ten tropical storms (39-73 mph winds), of which six become hurricanes (> 74 mph winds). Due to their location in the Gulf, Walker Ridge Blocks 677 and 678 may experience hurricane and tropical storm force winds and related sea currents. These factors can adversely impact the integrity of the operations covered by this plan. A significant storm may present physical hazards to operators and vessels, damage exploration or production equipment, or result in the release of hazardous materials (including hydrocarbons). Additionally, the displacement of equipment may disrupt the local benthic habitat and pose a threat to local species.

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

1. Drilling & completion
 - a. Secure well
 - b. Secure rig / platform
 - c. Evacuate personnel

Drilling activities will be conducted in accordance with NTL No.'s 2008-G09, 2009-G10, and 2010-N10.

2. Platform / Structure Installation

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

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

(E) Alternatives

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

(F) Mitigation Measures

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

(G) Consultation

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

(H) Preparer(s)

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

- Hazard Surveys

SECTION 18

ADMINISTRATIVE INFORMATION

18.1 EXEMPTED INFORMATION DESCRIPTION

The proposed bottomhole locations of the planned wells have been removed from the Public Information copy of the DOCD as well as any discussions of the target objectives, geologic or geophysical data, and interpreted geology.

18.2 BIBLIOGRAPHY

1. Supplemental Exploration Plan (Control No. S-8214).