

UNITED STATES GOVERNMENT
MEMORANDUM

October 27, 2022

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

Subject: Public Information copy of plan
Control # - N-10200
Type - Initial Development Operations Coordinations Document
Lease(s) - OCS-G34451 Block - 607 Mississippi Canyon Area
Operator - Chevron U.S.A. Inc.
Description - Subsea Wells BP001, BP002 and BP003
Rig Type - Not Found

Attached is a copy of the subject plan.

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

Leslie Wilson
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
WELL/BP001	G34451/MC/607	2059 FSL, 5174 FWL	G34451/MC/607
WELL/BP002	G34451/MC/607	2059 FSL, 5174 FWL	G34451/MC/607
WELL/BP003	G34451/MC/607	2059 FSL, 5174 FWL	G34451/MC/607



**Chevron North America Exploration and Production
Gulf of Mexico Business Unit**

Ballymore Project

Initial Development Operations
Coordination Document (DOCD)
(Public)

DOCUMENT NO.: BLFB1-0000-RGL-PMT-CHV-00000-00003-00

REV	DATE	DESCRIPTION	ORIG	CHK	APPR
U01	Sept 2022	Issued for Use			GRZK

APPROVED BY:

DATE:

**Greg Kusinski,
Ph.D.**

Digitally signed by Greg Kusinski,
Ph.D.

Date: 2022.09.19 12:35:08 -05'00'

**INITIAL DEVELOPMENT OPERATIONS
COORDINATION DOCUMENT**



CHEVRON U.S.A. INC.

MISSISSIPPI CANYON BLOCKS 607, 650, 651 AND 652

LEASES OCS-G 34451, 34905, 34454 AND 34906

OFFSHORE ALABAMA / LOUISIANA

“BALLYMORE” PROJECT

SUBMITTED BY:

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1-B	Ballymore Field Layout
1-C	Pay.gov Receipt
Section 2	General Information
2-A	Blowout Scenario
Section 3	Geological and Geophysical Information
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17-A	Environmental Impact Analysis (EIA)

SECTION 1

PLAN CONTENTS

1.1 PLAN INFORMATION

Chevron U.S.A. Inc. (Chevron) is the operator of Leases OCS-G 34451, 34905, 34454 and 34906, Mississippi Canyon (MC) Blocks 607, 650, 651 and 652, Ballymore project.

Chevron filed an Initial Exploration Plan (EP) (Control No. N-9955) for MC Blocks 607 and 651, which provided for the drilling and completion of ten well locations. Subsequently, Chevron filed a Revised EP (Control No. R-6710) and a Supplemental EP (Control No. S-7903) which provided for the drilling and completion of eight well locations.

The Ballymore field is being developed using subsea wells tied back to the Chevron operated Blind Faith 'A' Semi-Submersible Floating Production Unit (FPU), MC 650, Right-of-Use and Easement (RUE) OCS-G 23688. This Initial Development Operations Coordination Document (DOCD) covers three subsea production wells (BP001, BP002 and BP003) that will be connected to a four well slot subsea manifold to be located in MC 607. The wells will be drilled and completed under a Supplemental EP (*to be submitted*). **Note: the proposed Ballymore MC 607 drill center surface location for Well Nos. BP001, BP002 and BP003 is within 500 feet of a previously cleared surface location in Supplemental EP (Control No. S-7903), Well Location RW2.**

Further, Chevron proposes the following:

- Installation of a new production manifold to be installed on a suction pile at the Ballymore MC 607 drill center;
- Installation of one new lease-term 10.75-inch flowline jumper, approximately 100 feet in length, MC 607;
- Installation of four new lease-term 6.81-inch well jumpers, each approximately 120 feet in length, MC 607;
- Installation of one lease-term 6.69-inch control umbilical, approximately 19,970 feet in length from the existing Blind Faith 'A' FPU, MC 650 to a subsea umbilical termination assembly (SUTA), MC 607

A new Right-of-Way (ROW) 10.75-inch flowline and riser will be installed, and will flow from the new Pipeline End Termination (PLET) in MC 607 to the existing Blind Faith 'A' FPU, MC 650.

These development operations are in approximately 6,400 to 6,800 feet of water. The manifold and pipelines will be installed using dynamically positioned offshore construction and support vessels.

No drilling or completion activities are proposed in this DOCD.

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

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

1.2 LOCATION

The Ballymore field layout is 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 Chevron. Chevron 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 (PINC) 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 Ballymore development are located at the Chevron operated Blind Faith 'A' FPU located in MC 650 (RUE OCS-G 23688).

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

Chevron does not propose any additional safety, pollution prevention, or early spill detection measures beyond those required by 30 CFR Part 250.

1.7 COST RECOVERY FEE

Documentation of the \$12,714.00 cost recovery fee payment is included as **Attachment 1-C**.

Attachment 1-A

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

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

OCS PLAN INFORMATION FORM

General Information											
Type of OCS Plan:		Exploration Plan (EP)	<input checked="" type="checkbox"/>	Development Operations Coordination Document (DOCD)							
Company Name: Chevron U.S.A. Inc.				BOEM Operator Number: 00078							
Address: 1500 Louisiana Street				Contact Person: Kelley Pisciola							
Houston, Texas. 77002				Phone Number: 281-698-8519							
				E-Mail Address: kelley.pisciola@jcteam.com							
If a service fee is required under 30 CFR 550.125(a), provide the			Amount paid	\$12,714.00	Receipt No.		271GKOVF				
Project and Worst Case Discharge (WCD) Information											
Leases: G-34451			Area: Mississippi Canyon		Blocks: 607		Project Name (If Applicable): Ballymore				
Objective(s)	<input checked="" type="checkbox"/>	Oil	<input type="checkbox"/>	Gas	<input type="checkbox"/>	Sulphur	<input type="checkbox"/>	Salt	Onshore Support Base(s): Port Fourchon, LA		
Platform / Well Name:				Total Volume of WCD:			API Gravity: 36°				
Distance to Closest Land (Miles): 69				Volume from uncontrolled blowout: 990							
Have you previously provided information to verify the calculations and assumptions for your WCD?							Yes	<input checked="" type="checkbox"/>	No		
If so, provide the Control Number of the EP or DOCD with which this information was provided											
Do you propose to use new or unusual technology to conduct your activities?							Yes	<input checked="" type="checkbox"/>	No		
Do you propose to use a vessel with anchors to install or modify a structure?							Yes	<input checked="" type="checkbox"/>	No		
Do you propose any facility that will serve as a host facility for deepwater subsea development?							Yes	<input checked="" type="checkbox"/>	No		
Description of Proposed Activities and Tentative Schedule (Mark all that apply)											
Proposed Activity					Start Date		End Date		No. of Days		
Install suction piles, manifold and production pipeline					2023		2023		120 days		
Install umbilical, jumpers and flying leads					2024		2024		80 days		
Commence production at Well Locations BP001, BP002 & BP003					09/29/2024		09/29/2032		8 years		
Future Well Intervention Operations (BP001, BP002, BP003)					2025		2033		150 days/year		
Description of Drilling Rig					Description of Structure						
Jackup		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)			
MC 609 BP001 (PJ-BMP11)			MC 609 Production Manifold (PMFD-BMP01)			6.81 OD		120 feet			
MC 609 BP002 (PJ-BMP12)			MC 609 Production Manifold (PMFD-BMP01)			6.81 OD		120 feet			
MC 609 BP003 (PJ-BMP13)			MC 609 Production Manifold (PMFD-BMP01)			6.81 OD		120 feet			
MC 609 (future well) (PJ-BMP14)			MC 609 Production Manifold (PMFD-BMP01)			6.81 OD		120 feet			
MC 609 (FJ-BMP01-02)			MC 609 PLET (BMP31)			10.75 OD		100 feet			
MC 650 (UC-BMP-01)			MC 609 SUTA (SUT BMP61)			6.69 OD		19,970 feet			

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): MC 607 BP001				Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid		
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G 34451			OCS			OCS OCS		
Area Name	MISSISSIPPI CANYON								
Block No.	607								
Blockline Departures (in feet)	N/S Departure: F ^s ___ L			N/S Departure:			N/S Departure: F ___ L		
	2059						N/S Departure: F ___ L		
	E/W Departure: F ^w ___ L			E/W Departure:			E/W Departure: F ___ L		
	5174						E/W Departure: F ___ L		
Lambert X-Y coordinates	X: 1240877			X:			X:		
	Y: 10298299			Y:			Y: Y: Y:		
Latitude/ Longitude	Latitude N 28 22 21.2010			Latitude			Latitude Latitude Latitude		
	Longitude W 88 14 34.0771			Longitude			Longitude Longitude Longitude		
Water Depth (Feet): 6540				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet):	
Anchor Radius (if applicable) in feet:				NA				TVD (Feet): TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				

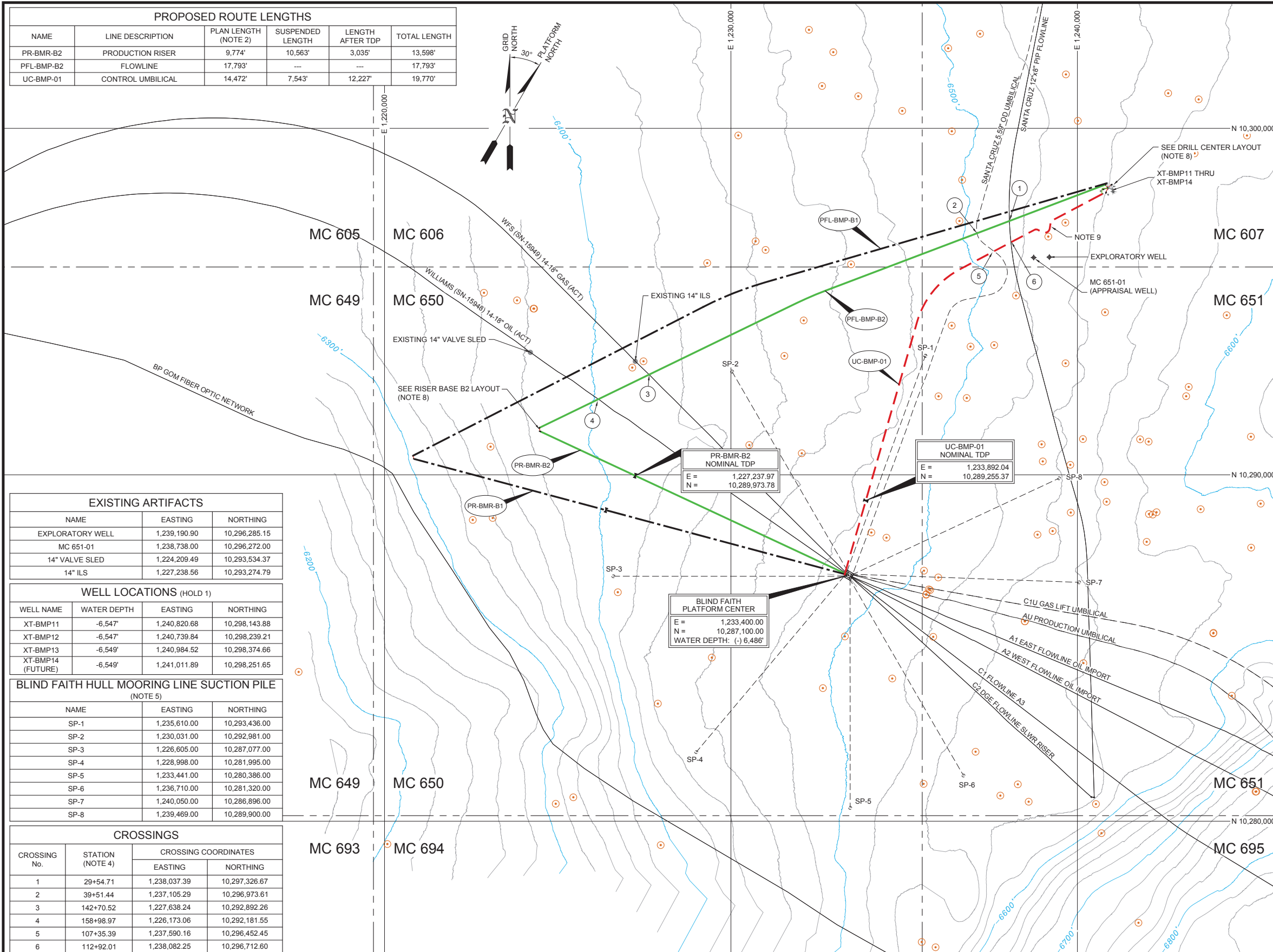
OCS PLAN INFORMATION FORM (CONTINUED)
Include one copy of this page for each proposed well/structure

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): MC 607 BP002				Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid		
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G 34451			OCS			OCS OCS		
Area Name	MISSISSIPPI CANYON								
Block No.	607								
Blockline Departures (in feet)	N/S Departure: F ^s ___ L			N/S Departure:			N/S Departure: F ___ L		
	2059						F ___ L		
	E/W Departure: F ^w ___ L			E/W Departure:			E/W Departure: F ___ L		
	5174						F ___ L		
Lambert X-Y coordinates	X: 1240877			X:			X:		
	Y: 10298299			Y:			Y:		
Latitude/ Longitude	Latitude N 28 22 21.2010			Latitude			Latitude Latitude Latitude		
	Longitude W 88 14 34.0771			Longitude			Longitude Longitude Longitude		
Water Depth (Feet): 6540				MD (Feet):		TVD (Feet):		MD (Feet): MD (Feet):	
Anchor Radius (if applicable) in feet:				NA				TVD (Feet): TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				

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

Proposed Well/Structure Location									
Well or Structure Name/Number (If renaming well or structure, reference previous name): MC 607 BP003				Previously reviewed under an approved EP or DOCD?		Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid		
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS G 34451			OCS			OCS OCS		
Area Name	MISSISSIPPI CANYON								
Block No.	607								
Blockline Departures (in feet)	N/S Departure: F ^s ___ L			N/S Departure:			N/S Departure: F ___ L		
	2059						F ___ L		
	E/W Departure: F ^w ___ L			E/W Departure:			E/W Departure: F ___ L		
	5174						F ___ L		
Lambert X-Y coordinates	X: 1240877			X:			X:		
	Y: 10298299			Y:			Y: Y: Y:		
Latitude/ Longitude	Latitude N 28 22 21.2010			Latitude			Latitude Latitude Latitude		
	Longitude W 88 14 34.0771			Longitude			Longitude Longitude Longitude		
Water Depth (Feet): 6540				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 =					

Attachment 1-B



PROPOSED ROUTE LENGTHS				
NAME	LINE DESCRIPTION	PLAN LENGTH (NOTE 2)	SUSPENDED LENGTH	TOTAL LENGTH
PR-BMR-B2	PRODUCTION RISER	9,774'	10,563'	13,598'
PFL-BMP-B2	FLOWLINE	17,793'	---	17,793'
UC-BMP-01	CONTROL UMBILICAL	14,472'	7,543'	19,770'

- ### NOTES
- ALL DIMENSIONS AND COORDINATES ARE IN FEET AND ALL ANGLES IN DEGREES UNLESS NOTED OTHERWISE. ALL HEADINGS ARE RELATIVE TO GRID NORTH UNLESS NOTED OTHERWISE.
 - THE SPECIFIED "PLAN LENGTH" IS THE HORIZONTAL PROJECTION. THE "TOTAL LENGTH" INCLUDES THE LENGTH OF SUSPENDED RISERS.
 - BLOCKS MC 650, 651, 606, AND 607 ARE LEASED BY CHEVRON.
 - STATIONS ARE MEASURED FROM PRODUCTION DRILL CENTER FOR PFL-BMP-B1 AND PFL-BMP-B2; RISER HANG-OFF AT PLATFORM FOR UC-BMP-01; AND RISER BASE PLEM FOR PR-BMR-B1 AND PR-BMR-B2.
 - FLOWLINES ARE ROUTED WITH A MINIMUM OF 500 FT CLEARANCE TO MOORING LINE SUCTION PILES.
 - ALL DRILL CENTER LOCATIONS ARE BASED ON COMPANY PROVIDED LOCATIONS. ANY CHANGES TO THESE LOCATIONS WILL REQUIRE UPDATING THIS DRAWING.
 - FLOWLINE AND RISER BUOYANCY LOCATIONS, INSULATION COATING, FLOWLINE AND UMBILICAL CROSSING CONFIGURATIONS ARE NOT SHOWN IN THIS DRAWING. THESE ARE INCLUDED SEPARATELY IN ALIGNMENT CHARTS, RISER PROFILE DRAWING AND CROSSING DRAWINGS.
 - REQUIREMENTS FOR INITIATION PILES, FOUNDATION / HOLD-BACK PILES ARE CURRENTLY UNDER ASSESSMENT BY THE COMPANY. THE DRAWING WILL BE UPDATED IN THE NEXT PHASE, BASED ON THE CONCLUSIONS FROM THIS ASSESSMENT.
 - LOCATION OF THE OVERAGE LOOP TO BE DETERMINED BY THE UMBILICAL INSTALLATION CONTRACTOR.

LEGEND

- PROPOSED BALLYMORE RISER / FLOWLINE
- PROPOSED BALLYMORE UMBILICAL
- FUTURE BALLYMORE RISER / FLOWLINE
- EXISTING FLOWLINE / PIPELINE
- EXISTING UMBILICAL
- MOORING LINES
- BLOCK BOUNDARY
- MOORING LINE ANCHOR
- TOUCHDOWN POINT
- WATER DEPTH CONTOUR IN 100' INTERVALS
- WATER DEPTH CONTOUR IN 20' INTERVALS
- CROSSING LOCATION NUMBER
- SONAR CONTACT WITH 100' BUFFER ZONE

ABBREVIATIONS

BMP	BALLYMORE PRODUCTION DRILL CENTER
BMR	BALLYMORE RISER BASE
ILS	INLINE SLED
MC	MISSISSIPPI CANYON
PFL	PRODUCTION FLOWLINE
PIP	PIPE-IN-PIPE
PR	PRODUCTION RISER
SP	SUCTION PILE
TDP	TOUCHDOWN POINT
UC	CONTROL UMBILICAL
XT	PRODUCTION TREE

EXISTING ARTIFACTS

NAME	EASTING	NORTHING
EXPLORATORY WELL	1,239,190.90	10,296,285.15
MC 651-01	1,238,738.00	10,296,272.00
14" VALVE SLED	1,224,209.49	10,293,534.37
14" ILS	1,227,238.56	10,293,274.79

WELL LOCATIONS (HOLD 1)

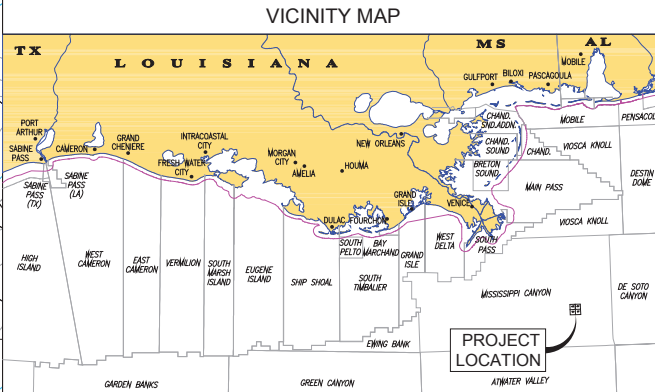
WELL NAME	WATER DEPTH	EASTING	NORTHING
XT-BMP11	-6,547'	1,240,820.68	10,298,143.88
XT-BMP12	-6,547'	1,240,739.84	10,298,239.21
XT-BMP13	-6,549'	1,240,984.52	10,298,374.66
XT-BMP14 (FUTURE)	-6,549'	1,241,011.89	10,298,251.65

BLIND FAITH HULL MOORING LINE SUCTION PILE (NOTE 5)

NAME	EASTING	NORTHING
SP-1	1,235,610.00	10,293,436.00
SP-2	1,230,031.00	10,292,981.00
SP-3	1,226,605.00	10,287,077.00
SP-4	1,228,998.00	10,281,995.00
SP-5	1,233,441.00	10,280,386.00
SP-6	1,236,710.00	10,281,320.00
SP-7	1,240,050.00	10,286,896.00
SP-8	1,239,469.00	10,289,900.00

CROSSINGS

CROSSING No.	STATION (NOTE 4)	CROSSING COORDINATES	
		EASTING	NORTHING
1	29+54.71	1,238,037.39	10,297,326.67
2	39+51.44	1,237,105.29	10,296,973.61
3	142+70.52	1,227,638.24	10,292,892.26
4	158+98.97	1,226,173.06	10,292,181.55
5	107+35.39	1,237,590.16	10,296,452.45
6	112+92.01	1,238,082.25	10,296,712.60



GEODETTIC INFORMATION

PROJECTION:	UTM	DATUM:	NAD 27
ZONE:	16N	CENTRAL MERIDIAN:	87°W
ELLIPSOID:	CLARK 1866	GRID UNITS:	US SURVEY FEET

REFERENCE DRAWINGS

DRAWING NO.	TITLE
BLFB1-SSGN-USY-LAY-ISI-00000-00002-02	OVERALL FIELD LAYOUT - BLIND FAITH PLATFORM
BLFB1-SSGN-USY-LAY-ISI-00000-00001-02	APPROACH
BLFB1-SSGN-USY-LAY-ISI-00000-00002-03	OVERALL FIELD LAYOUT - RISER BASE
BLFB1-SSGN-USY-LAY-ISI-00000-00001-01	STAGE 1 TIEBACK DRILL CENTER LAYOUT
BLFB1-SSGN-USY-LAY-ISI-00000-00002-02	B2 PRODUCTION FLOWLINE ALIGNMENT SHEET 1 OF 2
BLFB1-SSGN-USY-LAY-ISI-00000-00002-02	B2 PRODUCTION FLOWLINE ALIGNMENT SHEET 2 OF 2
BLFB1-SSGN-USY-LAY-ISI-00000-00001-01	B2 PRODUCTION FLOWLINE CROSSING SANTA CRUZ
BLFB1-SSGN-USY-LAY-ISI-00000-00003-01	GENERAL ARRANGEMENT
BLFB1-SSGN-USY-LAY-ISI-00000-00003-02	FLOWLINE / UMBILICAL GENERAL ARRANGEMENT
BLM01-S000-UFR-GAR-ISI-00000-00001-02	RISER PROFILE DRAWING MAIN UMBILICAL
BLFB1-SSGN-USY-LAY-ISI-00000-00003-02	B2 PRODUCTION FLOWLINE CROSSING WILLIAMS 14-16"
MC-650-A-MAR-LAY-GOM-0003-00	MOORING PROFILE
BLFB1-SSGN-USY-LAY-ISI-00000-00002-02	OIL / GAS LINES GENERAL ARRANGEMENT

REVISIONS

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED	CLIENT
G01	08 DEC 2021	ISSUED FOR FEED DESIGN	MR / KS	JM	SS	
E01	28 MAY 2021	ISSUED FOR FEED COMPANY REVIEW	KGS / KS	JM	SS	
D01	26 MAY 2021	ISSUED FOR FEED INTERDISCIPLINARY CHECK	MR / KS	JM		

NOTICE

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CHEVRON NORTH AMERICA

EXPLORATION AND PRODUCTION COMPANY

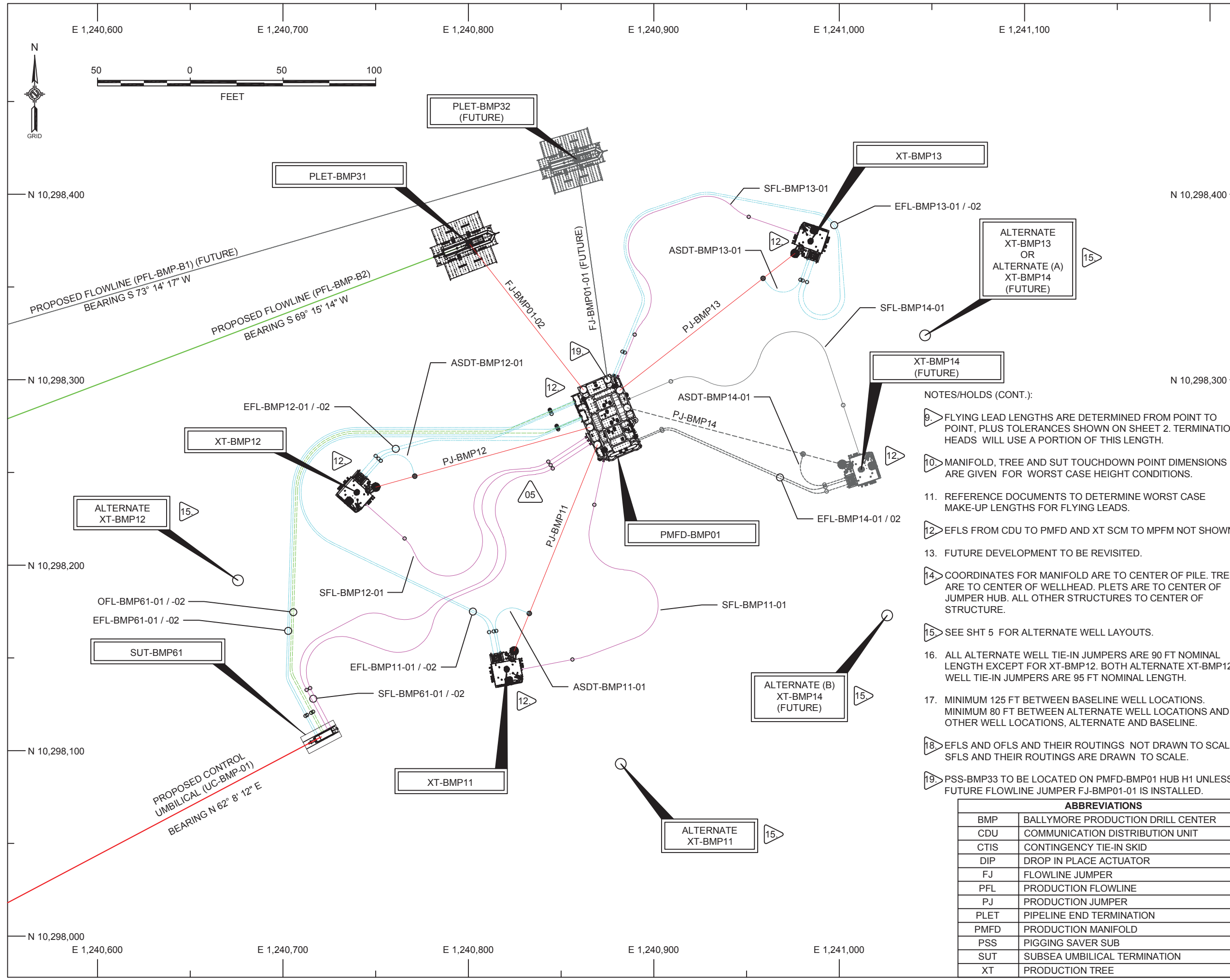
BALLYMORE PROJECT

OVERALL FIELD LAYOUT

CHV DRAWING NO: BLFB1-SSGN-USY-LAY-ISI-00000-00002-01

CHV REV: G01

\\WORLEY.com\ntecaseal\HOU\Projects\Design\Current\41800500547_Chevron_Ballymore Phase 3 FEED\USY-LAY-ISI-00000-00002-01_12/9/2021 11:13:02 AM, Scruggs, Kimberly (Houston)



EQUIPMENT TAG NUMBER:
SEE SHEET 2 FOR EQUIPMENT TAG NUMBERING

KEY PLAN LEGEND:

- 📌 DENOTES SPECIFIC NOTES
- ❓ DENOTES ITEM NUMBER ON INITIAL USED BOM
- 🔄 DENOTES ONESUBSEA REVISION

- 🟢 BALLYMORE PRODUCTION FLOWLINE
- 🔴 BALLYMORE UMBILICAL
- 🟡 JUMPER
- 🟠 ELECTRICAL FLYING LEAD
- 🟡 STEEL FLYING LEAD
- 🟢 OPTICAL FLYING LEAD

STRUCTURE HEADING DATUMS:

- NOTES/HOLDS:
- ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.
 - MBR FOR SFLS IS 19 FT. MBR FOR EFLS/OFLS IS 10 FT, EXCEPT FOR ROUTING ALONG TOP OF MANIFOLDS WHEN MBR IS 3 FT.
 - STRUCTURES SHOWN ARE PRELIMINARY. FINAL STRUCTURES TO BE DETERMINED AND CONNECTION POINTS TO BE VERIFIED.
 - EFLS CONNECTING COMPONENTS WITHIN THE SAME STRUCTURE (CIMVS, ISOLATION VALVES, MPFM, DIP) NOT SHOWN FOR CLARITY.
 - ALL HEADINGS BASED ON GRID NORTH.
 - ALL CONNECTION LENGTHS ARE BASED ON THE HORIZONTAL PLANE AND DO NOT REFLECT VARIANCES IN SEAFLOOR TOPOGRAPHY.
 - MINIMUM STRAIGHT LENGTH IS ASSUMED TO BE 10 FT FOR EFLS/FOFLS. FOR SFLS SEE SHEET 3.
 - FLYING LEAD LENGTHS DEPICTED IN THE TABLE. FLYING LEADS OF SIMILAR SIZES ARE GROUPED FOR EASE OF LOADOUT, INSTALLATION AND SPARING.

NOTES/HOLDS (CONT.):

- FLYING LEAD LENGTHS ARE DETERMINED FROM POINT TO POINT, PLUS TOLERANCES SHOWN ON SHEET 2. TERMINATION HEADS WILL USE A PORTION OF THIS LENGTH.
- MANIFOLD, TREE AND SUT TOUCHDOWN POINT DIMENSIONS ARE GIVEN FOR WORST CASE HEIGHT CONDITIONS.
- REFERENCE DOCUMENTS TO DETERMINE WORST CASE MAKE-UP LENGTHS FOR FLYING LEADS.
- EFLS FROM CDU TO PMFD AND XT SCM TO MPFM NOT SHOWN.
- FUTURE DEVELOPMENT TO BE REVISITED.
- COORDINATES FOR MANIFOLD ARE TO CENTER OF PILE. TREES ARE TO CENTER OF WELLHEAD. PLETs ARE TO CENTER OF JUMPER HUB. ALL OTHER STRUCTURES TO CENTER OF STRUCTURE.
- SEE SHT 5 FOR ALTERNATE WELL LAYOUTS.
- ALL ALTERNATE WELL TIE-IN JUMPERS ARE 90 FT NOMINAL LENGTH EXCEPT FOR XT-BMP12. BOTH ALTERNATE XT-BMP12 WELL TIE-IN JUMPERS ARE 95 FT NOMINAL LENGTH.
- MINIMUM 125 FT BETWEEN BASELINE WELL LOCATIONS. MINIMUM 80 FT BETWEEN ALTERNATE WELL LOCATIONS AND OTHER WELL LOCATIONS, ALTERNATE AND BASELINE.
- EFLS AND OFLS AND THEIR ROUTINGS NOT DRAWN TO SCALE. SFLS AND THEIR ROUTINGS ARE DRAWN TO SCALE.
- PSS-BMP33 TO BE LOCATED ON PMFD-BMP01 HUB H1 UNLESS FUTURE FLOWLINE JUMPER FJ-BMP01-01 IS INSTALLED.

ABBREVIATIONS	
BMP	BALLYMORE PRODUCTION DRILL CENTER
CDU	COMMUNICATION DISTRIBUTION UNIT
CTIS	CONTINGENCY TIE-IN SKID
DIP	DROP IN PLACE ACTUATOR
FJ	FLOWLINE JUMPER
PFL	PRODUCTION FLOWLINE
PJ	PRODUCTION JUMPER
PLET	PIPELINE END TERMINATION
PMFD	PRODUCTION MANIFOLD
PSS	PIGGING SAVER SUB
SUT	SUBSEA UMBILICAL TERMINATION
XT	PRODUCTION TREE

ISSUED FOR CONSTRUCTION	DATE	REV
ISSUED FOR CONSTRUCTION	28 MAR 2022	U05
ISSUED FOR CONSTRUCTION	28 JAN 2022	U04
ISSUED FOR CONSTRUCTION	07 DEC 2021	U03
ISSUED FOR CONSTRUCTION	20 OCT 2021	U02
ISSUED FOR CONSTRUCTION	13 JUL 2021	U01
ISSUED FOR REVIEW	14 APR 2021	A02
ISSUED FOR REVIEW	28 APR 2020	A01
REASON FOR ISSUE	DATE	CLIENT REV.

Chevron CHEVRON NORTH AMERICA
EXPLORATION AND PRODUCTION COMPANY

BALLYMORE PROJECT

CONTRACT NUMBER: CW1732080 CLIENT DOCUMENT NUMBER: BLFB1-SSGN-USY-PLT-OSS-00000-00002-00

AUTHORIZED USE ONLY

ESTIMATED WEIGHT: -LBS/ -KG

DRAWN BY: M. NGUYEN DATE: 20 FEB 20

CHECKED BY: S. WILSON DATE: 21 APR 20

APPROVED BY: A. OKOLO DATE: 21 APR 20


SCALE: NTS INITIAL USE BOM: N/A SHEET: 1 OF 5

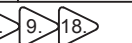
OneSubsea SUBSEA SYSTEMS
A Schlumberger Company

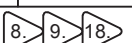











DRILL CENTER LAYOUT


SD-053456-01 REV: 05


AUTOCAD - D

STEEL-TUBE FLYING LEAD 			
TAG NO.	SFL LENGTH [FT]	FROM	TO
SFL-BMP61-01	280	SUT-BMP61	PMFD-BMP01
SFL-BMP61-02	280	SUT-BMP61	PMFD-BMP01
SFL-BMP11-01	200	PMFD-BMP01	XT-BMP11
SFL-BMP12-01	200	PMFD-BMP01	XT-BMP12
SFL-BMP13-01	200	PMFD-BMP01	XT-BMP13
SFL-BMP14-01	200	PMFD-BMP01	XT-BMP14 (FUTURE)



OPTICAL FLYING LEAD 			
TAG NO.	OFL LENGTH [FT]	FROM	TO
OFL-BMP61-01	361	SUT-BMP61	CDU-BMP61-01
OFL-BMP61-02	361	SUT-BMP61	CDU-BMP61-02


ELECTRICAL FLYING LEAD 			
TAG NO.	EFL LENGTH [FT]	FROM	TO
EFL-BMP61-01	394	SUT-BMP61	CDU-BMP61-01
EFL-BMP61-02	394	SUT-BMP61	CDU-BMP61-02
EFL-BMP11-01	394	CDU-BMP61-01	SCM-BMP11 (XT-BMP11)
EFL-BMP11-02	394	CDU-BMP61-02	SCM-BMP11 (XT-BMP11)
EFL-BMP12-01	328	CDU-BMP61-01	SCM-BMP12 (XT-BMP12)
EFL-BMP12-02	328	CDU-BMP61-02	SCM-BMP12 (XT-BMP12)
EFL-BMP13-01	394	PMFD-BMP01	SCM-BMP13 (XT-BMP13)
EFL-BMP13-02	394	PMFD-BMP01	SCM-BMP13 (XT-BMP13)
EFL-BMP13-03 	20	CDU-BMP61-01	PMFD-BMP01
EFL-BMP13-04 	20	CDU-BMP61-02	PMFD-BMP01
EFL-BMP14-01	328	PMFD-BMP01	SCM-BMP14 (XT-BMP14) (FUTURE)
EFL-BMP14-02	328	PMFD-BMP01	SCM-BMP14 (XT-BMP14) (FUTURE)
EFL-BMP14-03 	20	CDU-BMP61-01	PMFD-BMP01
EFL-BMP14-04 	20	CDU-BMP61-02	PMFD-BMP01
EFL-BMP01-01 	20	CDU-BMP61-01	PMFD-BMP01
EFL-BMP01-02 	20	CDU-BMP61-02	PMFD-BMP01
EFL-BMP01-03 	20	PMFD-BMP01	DIP-BMP01-01
EFL-BMP11-05 	52.5	SCM-BMP11 (XT-BMP11)	MPFM-BMP11 (XT-BMP11)
EFL-BMP12-05 	52.5	SCM-BMP12 (XT-BMP12)	MPFM-BMP12 (XT-BMP12)
EFL-BMP13-05 	52.5	SCM-BMP13 (XT-BMP13)	MPFM-BMP13 (XT-BMP13)
EFL-BMP14-05 	52.5	SCM-BMP14 (XT-BMP14)	MPFM-BMP14 (XT-BMP14)

ACOUSTIC SAND DETECTOR HARNESSSES 			
TAG NO.	LENGTH [FT]	FROM	TO
ASDT-BMP11-01	115	PJ-BMP11	XT-BMP11
ASDT-BMP12-01	115	PJ-BMP12	XT-BMP12
ASDT-BMP13-01	115	PJ-BMP13	XT-BMP13
ASDT-BMP14-01 (FUTURE)	115	PJ-BMP14 (FUTURE)	XT-BMP14 (FUTURE)

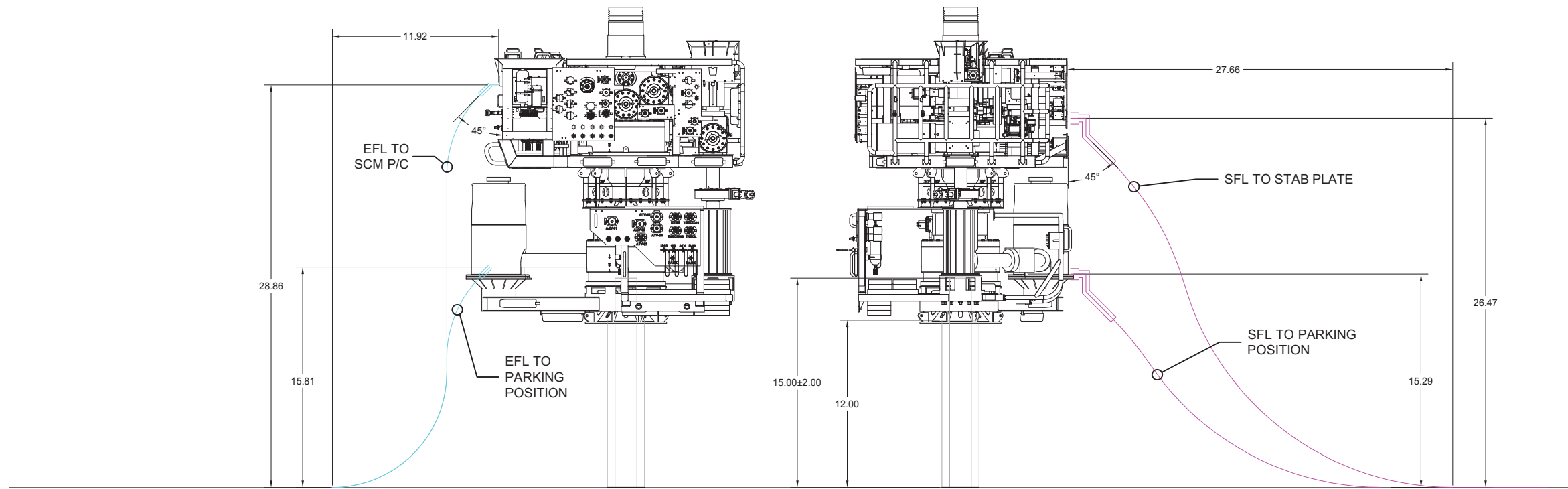
EQUIPMENT LOCATION 					ALTERNATE LOCATION		
TAG NO.	NAME	EASTING [FT]	NORTHING [FT]	HEADING [DEG]	EASTING [FT]	NORTHING [FT]	HEADING [DEG]
PMFD-BMP01	PRODUCTION MANIFOLD	1240876.00	10298279.77	337	N/A	N/A	N/A
XT-BMP11	PRODUCTION TREE 1	1240820.68	10298143.88	259	1240882.20	10298092.89	202
XT-BMP12	PRODUCTION TREE 2	1240739.84	10298239.21	311	1240675.75	10298191.78	304
XT-BMP13	PRODUCTION TREE 3	1240984.52	10298374.66	109	1241046.32	10298323.86	168
XT-BMP14 (FUTURE)	PRODUCTION TREE 4	1241011.89	10298251.65	162	1241046.32 (A)	10298323.86 (A)	105 (A)
					1241025.90 (B)	10298172.88 (B)	203 (B)
SUT-BMP61	SUBSEA UMBILICAL TERMINATION	1240720.60	10298107.38	242	N/A	N/A	N/A
PLET-BMP31	PIPELINE END TERMINATION	1240800.52	10298373.32	249	N/A	N/A	N/A
PLET-BMP32 (FUTURE)	PIPELINE END TERMINATION	1240858.36	10298418.85	254	N/A	N/A	N/A
CTIS-BMP11	CTIS ALTERNATE TREE 1	N/A	N/A	N/A	1240829.30	10298180.73	23
CTIS-BMP12	CTIS ALTERNATE TREE 2	N/A	N/A	N/A	1240775.20	10298236.00	49
CTIS-BMP13	CTIS ALTERNATE TREE 3	N/A	N/A	N/A	1240950.32	10298357.43	219
CTIS-BMP14 (A)	CTIS ALTERNATE TREE 4 (A)	N/A	N/A	N/A	1240969.99	10298253.81	200
CTIS-BMP14 (B)	CTIS ALTERNATE TREE 1 (B)	N/A	N/A	N/A	1240970.97	10298259.02	209

JUMPERS		
TAG NO.	TYPE	NOMINAL LENGTH [FT]
PJ-BMP11	WELL JUMPER	120
PJ-BMP12	WELL JUMPER	120
PJ-BMP13	WELL JUMPER	120
PJ-BMP14	WELL JUMPER	120
FJ-BMP01-01 (FUTURE)	FLOWLINE JUMPER	120
FJ-BMP01-02	FLOWLINE JUMPER	100
ALTERNATE WELL JUMPERS		
PJ-BMP11-01	ALT XT-BMP11 TO CTIS-BMP11	90
PJ-BMP11-02	CTIS-BMP11 TO PFMD-BMP01	90
PJ-BMP12-01	ALT XT-BMP12 TO CTIS-BMP12	95
PJ-BMP12-02	CTIS-BMP12 TO PFMD-BMP01	95
PJ-BMP13-01	ALT XT-BMP13 TO CTIS-BMP13	90
PJ-BMP13-02	CTIS-BMP13 TO PFMD-BMP01	90
PJ-BMP14-01 (A)	ALT XT-BMP14 (A) TO CTIS-BMP14 (A)	90
PJ-BMP14-02 (A)	CTIS-BMP14 (A) TO PFMD-BMP01	90
PJ-BMP14-01 (B)	ALT XT-BMP14 (B) TO CTIS-BMP14 (B)	90
PJ-BMP14-02 (B)	CTIS-BMP14 (B) TO PFMD-BMP01	90

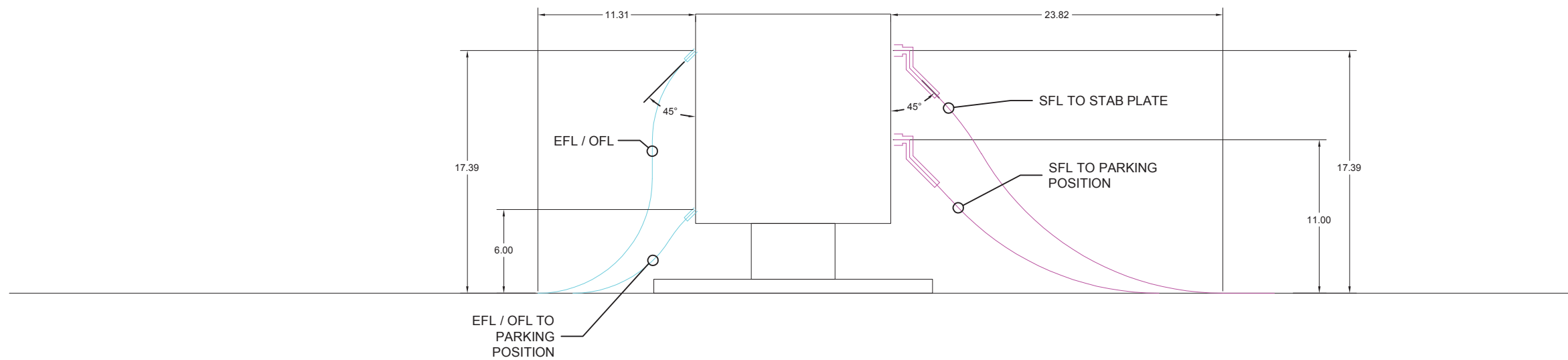
ALTERNATE WELL STEEL-TUBE FLYING LEAD 			
TAG NO.	SFL LENGTH [FT]	FROM	TO
SFL-BMP11-01	200	PMFD-BMP01	ALT XT-BMP11
SFL-BMP12-01	250	PMFD-BMP01	ALT XT-BMP12
SFL-BMP13-01	250	PMFD-BMP01	ALT XT-BMP13
SFL-BMP14-01	200	PMFD-BMP01	ALT A XT-BMP14 (FUTURE)
SFL-BMP14-01	250	PMFD-BMP01	ALT B XT-BMP14 (FUTURE)
ALTERNATE WELL ELECTRICAL FLYING LEAD 			
TAG NO.	EFL LENGTH [FT]	FROM	TO
EFL-BMP11-01	459	CDU-BMP61-01	ALT XT-BMP11
EFL-BMP11-02	459	CDU-BMP61-02	ALT XT-BMP11
EFL-BMP12-01	328	CDU-BMP61-01	ALT XT-BMP12
EFL-BMP12-02	328	CDU-BMP61-02	ALT XT-BMP12
EFL-BMP13-01	459	PMFD-BMP01	ALT XT-BMP13
EFL-BMP13-02	459	PMFD-BMP01	ALT XT-BMP13
EFL-BMP14-01	328	PMFD-BMP01	ALT A XT-BMP14 (FUTURE)
EFL-BMP14-02	328	PMFD-BMP01	ALT A XT-BMP14 (FUTURE)
EFL-BMP14-01	328	PMFD-BMP01	ALT B XT-BMP14 (FUTURE)
EFL-BMP14-02	328	PMFD-BMP01	ALT B XT-BMP14 (FUTURE)

CONTRACT NUMBER: CW1732080		CLIENT DOCUMENT NUMBER: BLFB1-SSGN-USY-PLT-OSS-00000-00002-00		CLIENT REV: U05
AUTHORIZED USE ONLY				
ESTIMATED WEIGHT: -LBS/		-KG		 OneSubsea <small>A Schlumberger Company</small>
DESIGNED IN INCHES	DRAWN BY: M. NGUYEN	DATE 20 FEB 20		
DIMENSIONAL UNITS INCHES (MILLIMETERS)	CHECKED BY: S. WILSON	DATE 21 APR 20		
	APPROVED BY: A. OKOLO	DATE 21 APR 20		
SCALE: NTS		INITIAL USE BM: N/A	SHEET 2 OF 5	
			DRILL CENTER LAYOUT	
			SD-053456-01	
			REV: 05	

XT TOUCHDOWN POINTS



SUT TOUCHDOWN POINTS



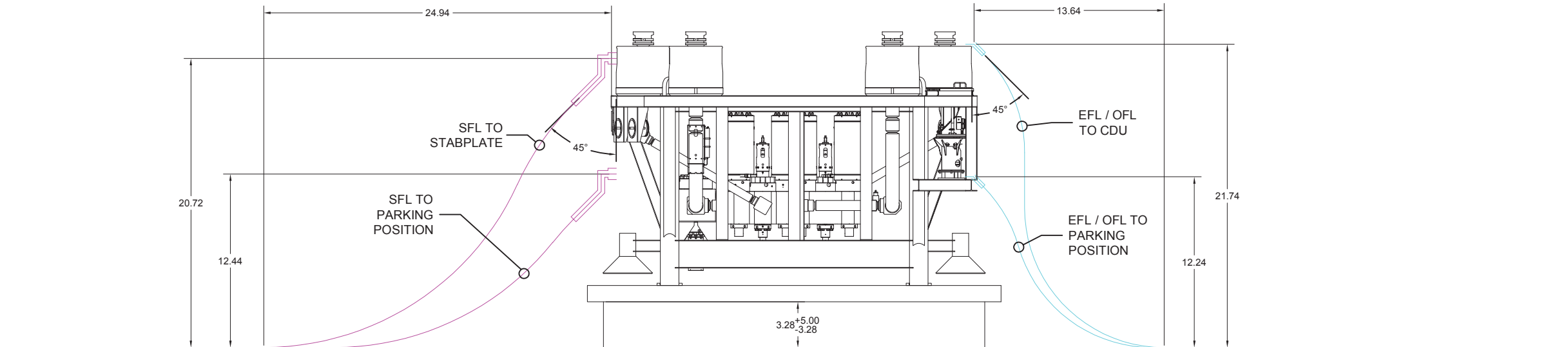
CONTRACT NUMBER: CW1732080	CLIENT DOCUMENT NUMBER: BLFB1-SSGN-USY-PLT-OSS-00000-00002-00	CLIENT REV: U05
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AUTHORIZED USE ONLY

ESTIMATED WEIGHT: -LBS/	-KG		SUBSEA SYSTEMS
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DESIGNED IN INCHES	DRAWN BY: M. NGUYEN	DATE 20 FEB 20	<p>DRILL CENTER LAYOUT</p> <p>SD-053456-01</p>
DIMENSIONAL UNITS	CHECKED BY: S. WILSON	DATE 21 APR 20	
INCHES	APPROVED BY: A. OKOLO	DATE 21 APR 20	
(MILLIMETERS)	SCALE: NTS	INITIAL USE BIM: N/A	
THIRD ANGLE	SHEET 3 of 5	REV: 05	AUTOCAD - D

MANIFOLD TOUCHDOWN POINTS



CONTRACT NUMBER: CW1732080	CLIENT DOCUMENT NUMBER: BLFB1-SSGN-USY-PLT-OSS-00000-00002-00	CLIENT REV: U05
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AUTHORIZED USE ONLY

ESTIMATED WEIGHT: -LBS/	-KG		SUBSEA SYSTEMS
DRAWN BY: M. NGUYEN	DATE 20 FEB 20		

DESIGNED IN INCHES
DIMENSIONAL UNITS
INCHES
(MILLIMETERS)

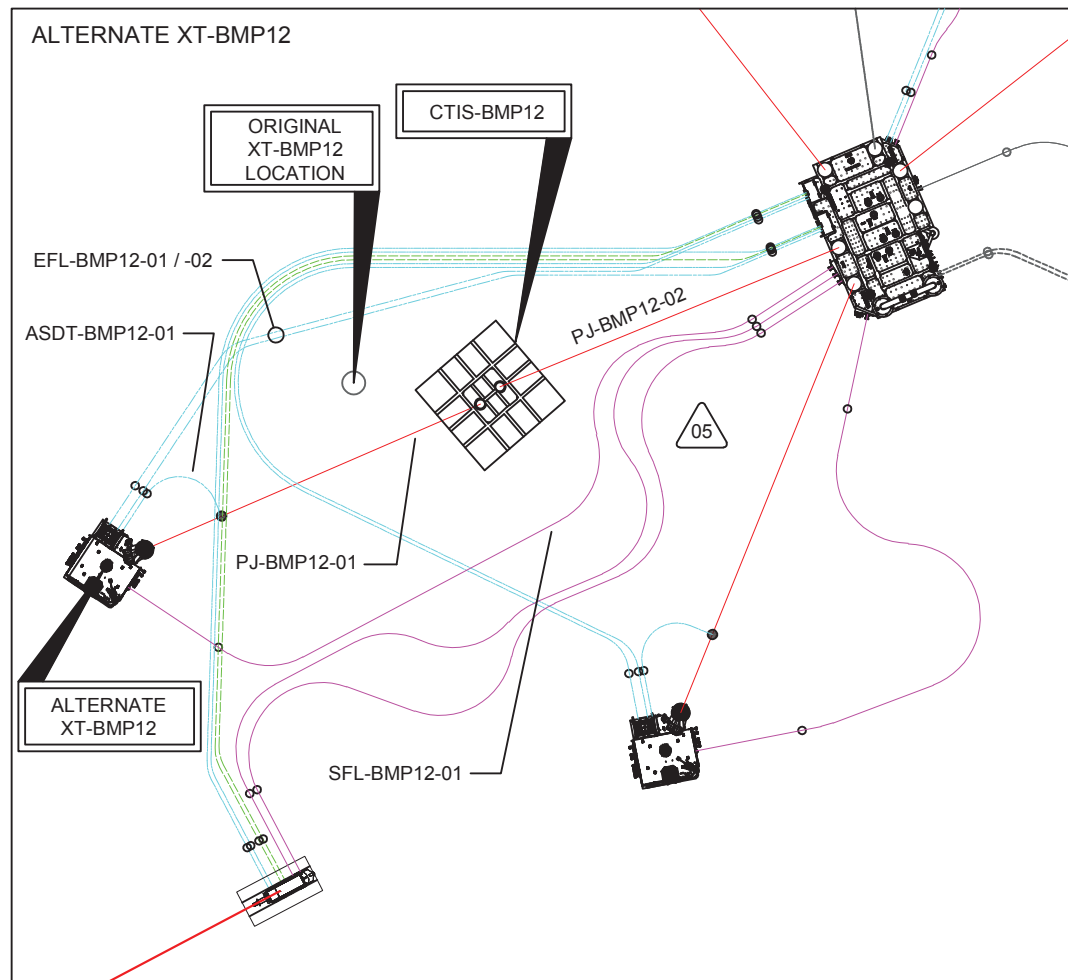
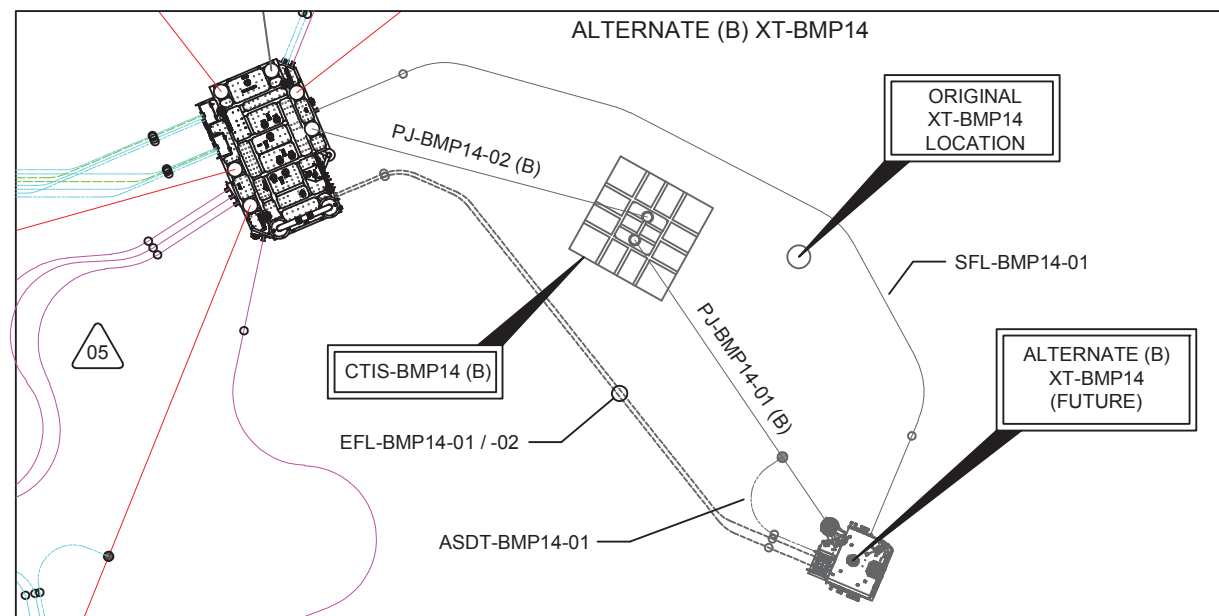
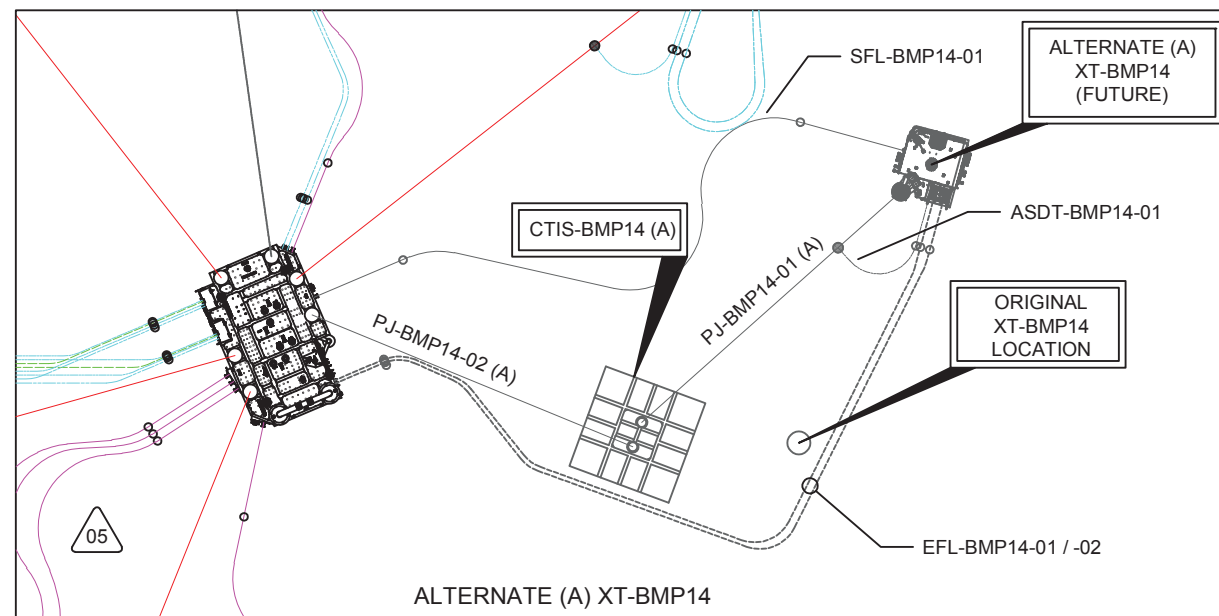
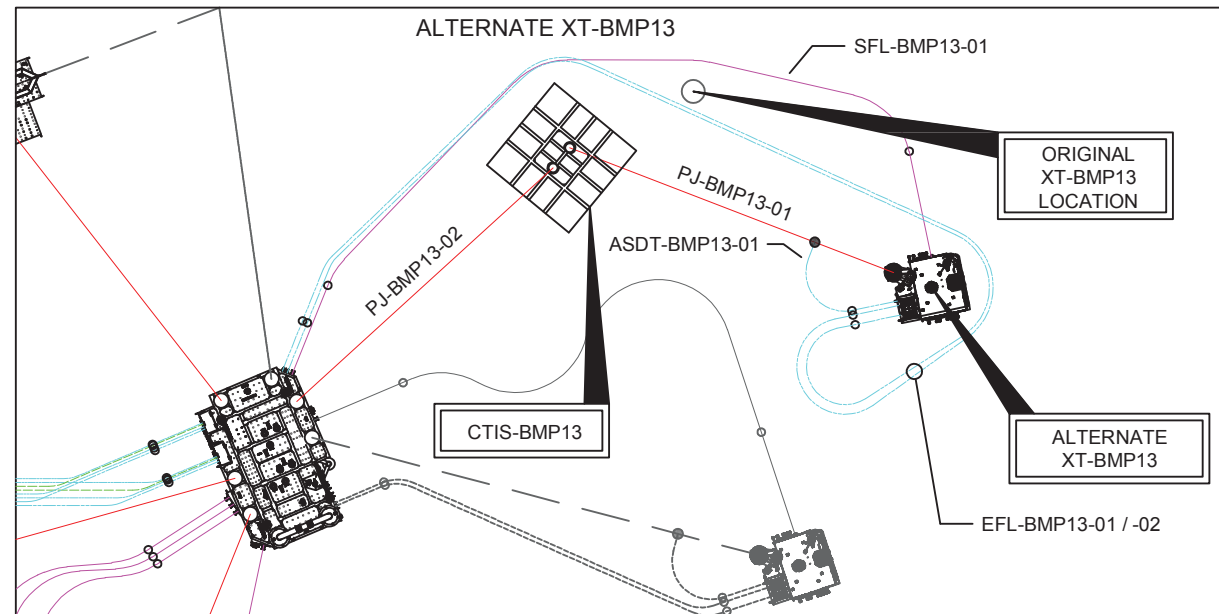
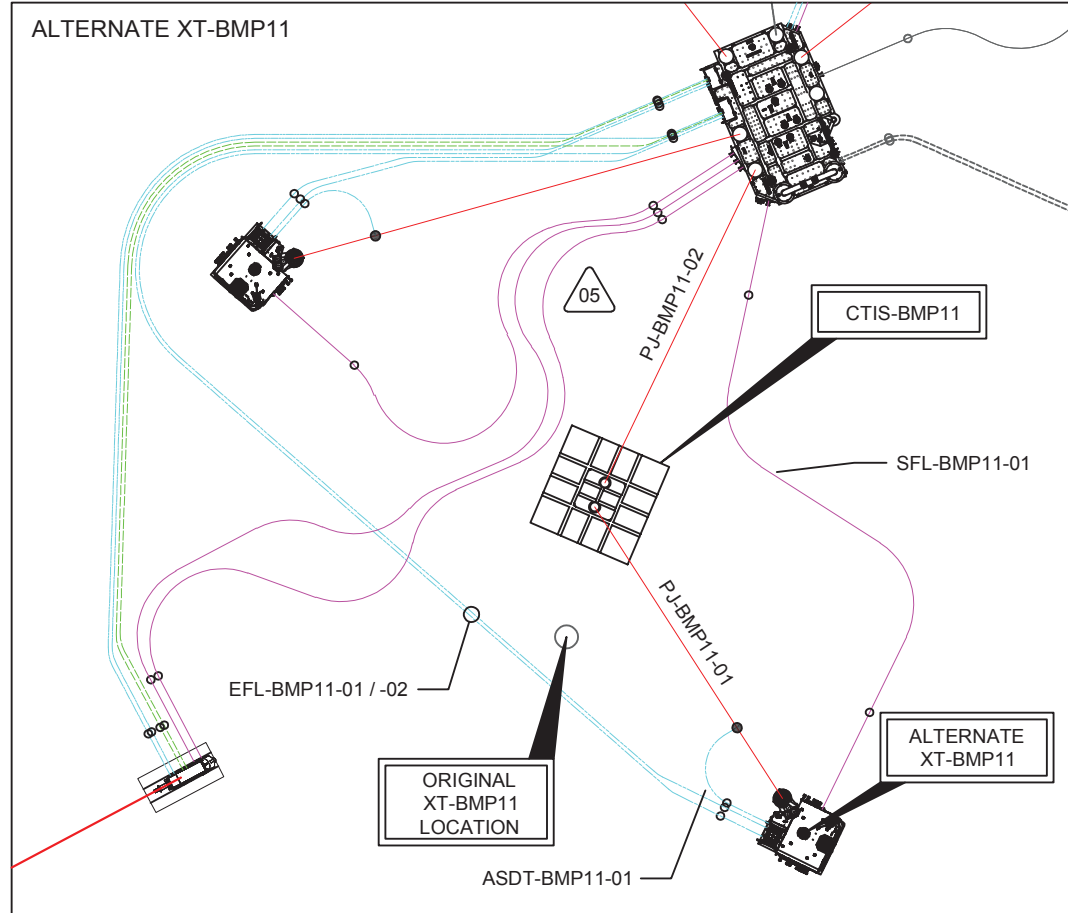
CHECKED BY: S. WILSON	DATE 21 APR 20
APPROVED BY: A. OKOLO	DATE 21 APR 20

DRILL CENTER LAYOUT

THIRD ANGLE

SCALE: NTS	INITIAL USE BIM: N/A
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SHEET 4 OF 5	SD-053456-01	REV: 05
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CONTRACT NUMBER: CW1732080		CLIENT DOCUMENT NUMBER: BLFB1-SSGN-USY-PLT-OSS-00000-00002-00		CLIENT REV: U05	
AUTHORIZED USE ONLY					
ESTIMATED WEIGHT: -LBS/	-KG	 SUBSEA SYSTEMS			
DESIGNED IN INCHES	DRAWN BY: M. NGUYEN				DATE 20 FEB 20
DIMENSIONAL UNITS INCHES	CHECKED BY: S. WILSON				DATE 21 APR 20
(MILLIMETERS)	APPROVED BY: A. OKOLO				DATE 21 APR 20
SCALE: NTS	INITIAL USE BM: N/A	SHEET 5 of 5	DRILL CENTER LAYOUT SD-053456-01		
THIRD ANGLE		REV: 05	AUTOCAD - D		

Attachment 1-C

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

notification@pay.gov

Sent: Tuesday, August 30, 2022 3:24 PM

To: Hudzicki, Lizzy [EYIE@chevron.com]



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 Brenda Dickerson at (703) 787-1617 or BseeFinanceAccountsReceivable@bsee.gov.

Application Name: BOEM Development/DOCD Plan - BD

Pay.gov Tracking ID: 271GKOVF

Agency Tracking ID: 76286692906

Transaction Type: Sale

Transaction Date: 08/30/2022 04:24:54 PM EDT

Account Holder Name: Jennifer Johnson

Transaction Amount: \$12,714.00

Card Type: AmericanExpress

Card Number: *****4006

Region: Gulf of Mexico

Contact: Lizzy Hudzicki (432) 269-1692

Company Name/No: Chevron U.S.A. Inc., 00078

Lease Number(s): 34451

Area-Block: Mississippi Canyon MC, 607

Type-Wells: Initial Plan, 3

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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
Request for Unitization	BSEE	Submitted
Suspension of Production	BSEE	To be submitted
Conservation Information Document	BOEM	To be submitted
Supplemental EP	BOEM	To be submitted
Lease Term Pipeline Permits	BSEE	To be submitted
Right-of-Way Pipeline Permit	BSEE	To be submitted
DWOP	BSEE	To be submitted

2.2 DRILLING FLUIDS

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

2.3 PRODUCTION

Proprietary Information.

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)

Chevron U.S.A. Inc., (Company Number 00078) 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

Chevron U.S.A. Inc., (Company Number 00078) has the financial capability to drill a relief well and conduct other emergency well control operations.

2.9 SUSPENSION OF PRODUCTION

Chevron has submitted an application to unitize the MC 607 and MC 651 leases. The application is currently pending BSEE approval. Chevron intends to submit a Suspension of Production (SOP) prior to the lease expiration dates and maintain the MC 607 and MC 651 unit leases under an approved SOP and milestone activity schedule to support the Ballymore tie-back to the Blind Faith host facility.

2.10 BLOWOUT SCENARIO AND WORST CASE DISCHARGE CALCULATIONS

No drilling or completion operations are proposed in this plan. The blowout scenario reviewed and approved under EP Control Number N-9955 is included for reference as **Attachment 2-A**.

Attachment 2-A (included for reference)

(j) BLOWOUT SCENARIO

The MC 607 “J” proposed location was chosen as the representative well for the Worst Case Discharge (WCD) scenario for this plan. The initial Open Flow Potential Rate was calculated with systems analysis using the Prosper nodal software package from Petroleum Experts, Ltd. Transient models and Merlin simulation models were investigated, resulting in almost identical results.

Estimated flow rate

Systems analysis indicates that an uncontrolled blowout in the 8-1/2” open hole section will lead to a maximum Worst Case Discharge Scenario initial flow rate of 434,913 bopd. This rate is based on transient analysis and does not include the effects of heavy fluid unloading or filter cake cleanup.

Total volume and maximum duration of the potential blowout

Numerous modeling efforts from the Miocene blow-out at Macondo as well as the pressure depletion observed in the offset wells suggest that at this high rate, pressure depletion is expected to occur. This should apply to an uncontrolled blowout in the Norphlet sands, exhibiting the high WCD rate. Furthermore, reservoir simulation models using Merlin suggested that pressure depletion will occur in the case of an uncontrolled blowout in this well, so Chevron assumes the well could NOT sustain a stabilized rate until a relief well could be drilled. The total time required to drill the relief well and conduct the kill operation is 173 days. Production decline is assumed to occur; however, sand bridging has not been assumed in the calculations. Total Potential Spill Volume is estimated at 53,725,000 bbls, using the rate profile resulting from these assumptions explained above.

Potential for well to bridge over

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

Likelihood for surface intervention to stop the blowout

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

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

In the event of a well blowout, Chevron will act as soon as practical to reduce the overall risk of injury to personnel and damage to the environment and may consider potential actions that may have short term increases in effluent flow in the interest of reducing overall environmental impact or incident escalation. One such action that Chevron would consider is removal of any compromised or damaged equipment that may be restricting Chevron’s ability to control the effluent flow (a BOP, LMRP, and / or riser) and to allow for installation of the appropriate response equipment (an alternate BOP or capping stack) to assist in controlling the well.

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

- Actions necessary for personnel safety, including evacuation.
- ROV mobilization and tactics, including:
 - Identify the source(s) of hydrocarbon release
 - Assess the post incident geometry of equipment
- Identification of existing BOP / LMRP options and / or take action:

- Status
- Functionality
- Actuate rams
- Disconnection of existing BOP / LMRP / Riser to affect an appropriate connection point for capping / intervention options

Chevron will consider multiple capping stack alternatives to cap and contain a well during a loss of well control event. As a member of the Marine Well Containment Company (MWCC), Chevron has access to MWCC's Interim Containment System. This system can handle pressure up to 15k psi. The Single Ram Capping Stack can cap a well in deepwater depths up to 10,000 feet. It is engineered to "cap and flow" a well in deepwater depths up to 8,000 feet. The system has the capacity to contain 60,000 barrels per day (and 120 million standard cubic feet of gas per day) with potential for expansion and has dispersant injection capability. Through mutual aid agreement by members of MWCC, the interim containment system includes capture vessels under contract to member companies that would be deployed to assist in surface processing and storage of hydrocarbons captured during the event.

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

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

Chevron estimates ten (10) days to acquire and demobilize a rig, four (4) days to move the rig onsite, and 159 days to drill the relief well, intersect the blowout well, and conduct a kill operation for a total of 173 days.

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

Chevron plans to drill the proposed wells in this plan with one of the five drill ships currently under contract. At any given time, Chevron has the capability to cease current operations and move one of its contracted drill ships to drill the relief well. These drillships do not have any equipment constraints with respect to drilling a relief well for the project. The 9-3/8" casing shoe is selected as the intervention point for the relief well.

Relief well surface locations have been chosen to avoid current and proposed infrastructure. Site surveys have been conducted near the current drilling location to identify surface hazards that might impact the selection of a relief well location. Surface locations to the southwest and northwest of the original hole are preferred because they avoid the maximum number of potential shallow hazards (seafloor faults and surface pipeline fairways). Two surface locations have been selected, and relief well plans have been provided below in the confidential copy. Selection of the locations is constrained by typical parameters such as planned inclination, benign water-bottom and salt entry/exit points, wind and current direction and subsurface hazard avoidance. Casing design for the relief wells will be similar to that proposed for the "Ballymore" Mississippi Canyon 607 #1 exploration well.

Relief Well Plan 1:
 Proprietary Information
 Relief Well Plan 2:
 Proprietary Information

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

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

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

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

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

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

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

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

Preliminary plans are developed for potential relief well locations(s) during the planning phase for the primary well(s). These preliminary plans can be used to develop detailed relief well drilling plans as needed in a timely manner. Two relief well locations have been identified for the primary well location (RW 1E and RW 1M).

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

Chevron maintains the "Chevron Interim Well Containment Plan (0128-OfGN-RGL-PLN-DGM-0000-00001)" which guides Chevron's procedures and plans for well containment until the expanded Marine Well Containment System is in place. Additional details for each component of well containment planning can be found in the Chevron Interim Well Containment Plan ("IWCP"), which is available upon request.

Supplemental Worst Case Discharge Information to comply with NTL No. 2015-N01 is included as Appendix B in the confidential copy of 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

No wells are proposed to be drilled as part of this DOCD. Please see EP, Control Nos. N-9955, R-6710 and S-7903.

3.6 SHALLOW HAZARDS ASSESSMENT

No wells are proposed to be drilled as part of this DOCD. Please see EP, Control Nos. N-9955, R-6710 and S-7903. Note: the proposed MC 607 drill center surface location for Well Locations, BP001, BP002 and BP003 is within 500 feet of the previously cleared surface location in Supplemental EP (Control No. S-7903), Well Location RW2, included as reference as **Attachment 3-A**.

3.7 HIGH-RESOLUTION SEISMIC LINES

Proprietary Information.

3.8 STRATIGRAPHIC COLUMN

Proprietary Information.

3.9 TIME VS DEPTH TABLES

Proprietary Information.



June 25, 2018

Project No.: 0418-2763

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

Attachment 3-A

Attention: Mr. Phillip Von Dullen III

Site Clearance Letter for Proposed Wellsite MC 651 RW2 Block 607 (OCS-G-34451) Mississippi Canyon Area Gulf of Mexico

Chevron U.S.A. Inc. (Chevron) contracted Geoscience Earth & Marine Services (GEMS) to provide an assessment of the seafloor and shallow geologic conditions to determine the favorability of drilling operations for the proposed location MC 651 RW2, whose surface location lies in Block 607 (OCS-G-34451), Mississippi Canyon (MC) Area, Gulf of Mexico. This letter addresses specific seafloor and subsurface conditions around the proposed location to a depth of about 6,895 ft below the mudline (bml).

The proposed wellsite is located along a relatively benign seafloor. No potential sites for deepwater benthic communities exist within 2,000 ft of the proposed location. Two side-scan sonar contacts are located within 2,000 ft of the proposed location; however, they are not considered culturally significant. There is a negligible to low potential for encountering shallow gas and a negligible to moderate potential for shallow water flow within the Limit of Investigation.

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

Proposed Well Location

The surface location for the Proposed Wellsite MC 651 RW2 is in the southwestern portion of Block 607 (Figure MC651 RW2-1). Chevron provided the following coordinates:

Table 1. Proposed Location Coordinates

Proposed Wellsite MC 651 RW2			
Spheroid & Datum: Clarke 1866 NAD27 Projection: UTM Zone 16 North		Line Reference	Block Calls (MC 607)
X: 1,240,694 ft	Latitude: 28° 22' 18.8056" N	Inline 10891	5,174 ft FWL
Y: 10,298,059 ft	Longitude: 88° 14' 36.0983" W	Crossline 11193	2,059 ft FSL

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

Available Data

The following discussion is based on findings provided within the geohazard and archaeological reports for Mississippi Canyon Area Block 607 and Portions of 650 and 651, GEMS Report Nos. 0915-2574 and 0316-2609 (GEMS, 2016a,b). The text, maps, and figures included in the reports provide detail on the regional geology and archaeological conditions in the Study Area.

Chevron provided a 3-D seismic time volume for the geohazard analysis, covering an approximate 163 square-mile area that includes all or portions of Federal lease Blocks 562-565, 606-609, 650-653, 694-697, and 738-741 in the Mississippi Canyon Area (Figure MC651 RW2-1). Digital well log images from the BP Well #1 in MC 607 were used to correlate lithological conditions at the proposed well.

Two high-resolution geophysical datasets were also used for this site clearance assessment. The primary dataset used was collected by Fugro GeoServices (FGSI) in March, 2016 using an AUV (Autonomous Underwater Vehicle) over portions of MC 606-607 and 651 (Figure MC651 RW2-1). These data included 1.5-4.5 kHz subbottom profiler, 230-kHz side-scan sonar, and 3-meter bin multibeam bathymetry data. GEMS analyzed the AUV data for the presence of fluid expulsion and assessed the potential for chemosynthetic or other benthic community sites within 2,000 ft of the proposed surface location. However, there was no mapping of individual horizons, faults, or mass-transport deposits, etc., for this geohazards assessment. The high-resolution data was also used to map the side-scan sonar contacts and locate any potential submerged cultural resources as documented in the archaeological report (GEMS, 2016b). A second AUV dataset used was collected in 2005 by C & C Technologies over the adjacent Blind Faith area. The use of this dataset for this assessment is limited to regional bathymetric reporting.

Subsurface depths at the proposed wellsite were calculated using a 4th-order equation based on time-velocity values provided by Chevron (GEMS, 2016a). The equation is as follows, where *x* is two-way travel time in seconds below the mudline:

$$\text{Depth (feet)} = 118.04 * x^4 - 531.62 * x^3 + 1062.1 * x^2 + 2505.5 * x$$

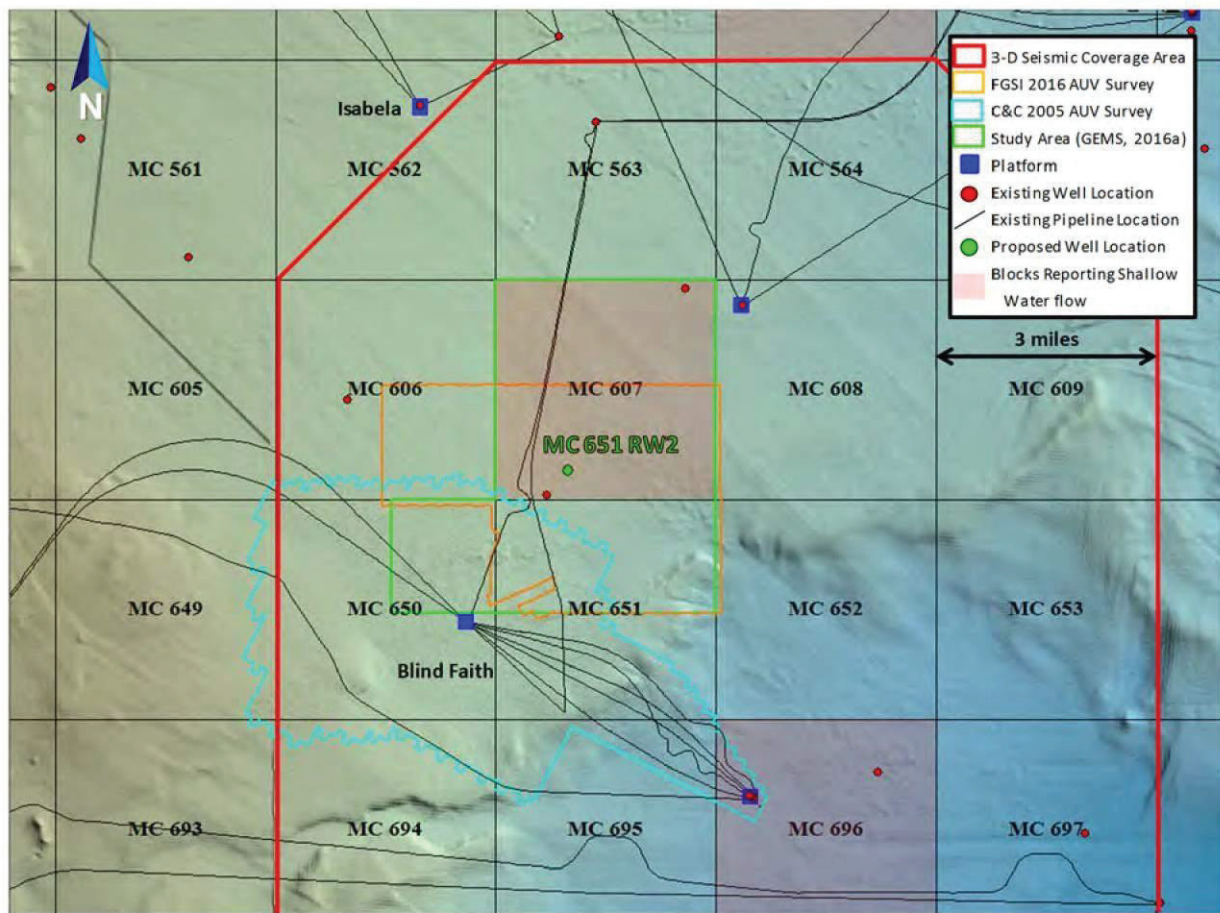


Figure MC651 RW2-1. Seafloor Rendering Showing the Proposed Wellsite Location

Attachments

Wellsite maps are centered on the Proposed Wellsite MC 651 RW2 location and are displayed at a scale of 1 inch = 1,000 ft (1:12,000). The maps included in this letter are as follows:

Map No. MC651 RW2-1:	Bathymetry Map
Map No. MC651 RW2-2:	Seafloor Features Map
Map No. MC651 RW2-3:	Side-Scan Sonar Mosaic
Map No. MC651 RW2-4:	Seafloor Amplitude Rendering
Map No. MC651 RW2-5:	Geologic Features Map

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

Illustration MC651 RW2-1:	Subbottom Profiler Line Showing Near-Surface Conditions Beneath Proposed Wellsite MC 651 RW2
Illustration MC651 RW2-2:	Portions of Inline 10891 and Crossline 11193 Showing Conditions Beneath Proposed Wellsite MC 651 RW2
Illustration MC651 RW2-3:	Tophole Prognosis Chart, Proposed Wellsite MC 651 RW2, Mississippi Canyon Area, Block 607
Illustration MC651 RW2-4:	Correlation Between Proposed Wellsite MC 651 RW2 and Nearby Existing Wells

NTL Requirements

The following letter complies with the Bureau of Ocean Energy Management (BOEM) Notice to Lessees (NTL's) 2008-G04, 2008-G05, and 2009-G40 (MMS, 2008a, b, and 2010) with respect to shallow hazards and benthic community assessments. BOEM's list of high probability archaeological blocks includes all of the Mississippi Canyon protraction area (BOEM, 2011) and mitigation guidelines released by BOEMRE in March 2011 require an archaeological assessment prior to any bottom disturbing activities (Pre-Seabed Disturbance Survey Mitigation, BOEMRE, 2011). GEMS prepared an archaeological assessment using FGSI's 2016 AUV-acquired data to comply with the Archaeological Surveys and Reports requirements in NTL 2005-G07 (MMS, 2005).

As specified in NTL 2008-G04 (MMS, 2008a), GEMS extracted the power spectrum diagram from the 3-D seismic data cube provided at the proposed wellsite (Figure MC651 RW2-2). The extraction was generated within a 2,000-ft radius of the intersection of the inline and crossline at the proposed wellsite. The extraction time interval consisted of the seafloor to one second bml. GEMS converted the amplitude vs. frequency spectrum, generated by the IHS software, to power vs. frequency by squaring the amplitude values as described by J. A. Coffeen, 1978. The frequency bandwidth at 50% power ranges from 26 to 68 Hz.

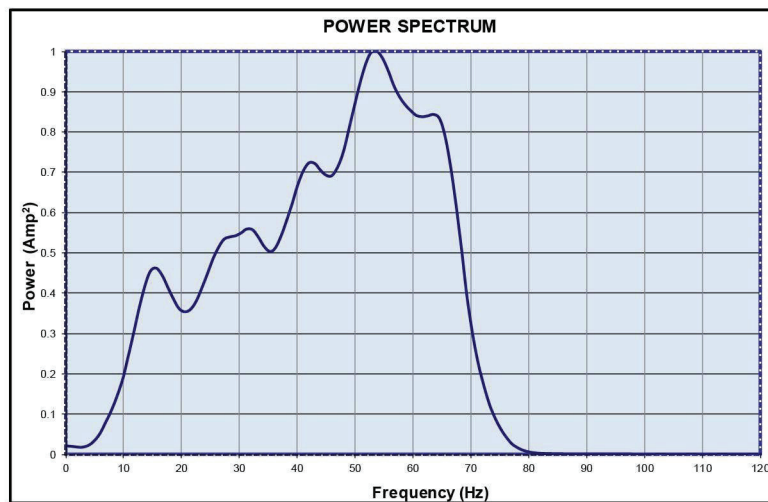


Figure MC651 RW2-2. Power Spectrum Curve, Proposed Wellsite MC 651 RW2

Man-Made Features

The surface location is clear of any wells, pipelines, or platforms within a 2,000 ft radius from the proposed wellsite. Chevron’s Blind Faith platform lies about 2.5 miles southwest of the proposed location in MC 650 (Figure MC651 RW2-1). The nearest existing well is Chevron’s recently drilled MC 607 #1 well, approximately 2,326 ft southwest of the Proposed Wellsite MC 651 RW2 (BOEM, 2018a). A second existing well in MC 607, BP’s #1 well, lies about 3.0 miles to the northeast. The well was drilled in 1997 and is currently plugged and abandoned.

Archaeological Assessment

High-resolution digital side-scan sonar, subbottom profiler, multibeam bathymetry, and multibeam backscatter data were collected using the FGSI’s *Echo Surveyor II* AUV on all survey lines. GEMS delineated 83 unidentified side-scan sonar contacts in the AUV data within the Study Area (GEMS, 2016b). There are two unidentified side-scan sonar contacts within 2,000 feet of the proposed wellsite (Map MC651 RW2-3). These contacts do not represent any potential significant cultural resources. The dimensions, shape, and approximate distance from the proposed wellsite are shown in Table 2. All of the unidentified Side-Scan Sonar Contacts are interpreted to represent modern debris from shipping, fishing, or nearby exploration activities. No potential submerged cultural resources were identified in the subbottom, bathymetry, or backscatter data sets (GEMS, 2016b).

Table 2. Unidentified Side-Scan Sonar Contacts Within 2,000 ft of Proposed Wellsite

No.	Area	Block	Length (ft)	Width (ft)	Height (ft)	Shape	X NAD27 (ft)	Y NAD27 (ft)	*Distance /Direction
36	MC	607	6.71	6.96	0.00	Irregular	1,239,654.16	10,297,279.83	1,300/SW
37	MC	607	11.20	3.48	0.00	Linear	1,239,159.47	10,296,876.82	1,938/SW

* Distance and direction from Proposed Wellsite MC 651 RW2

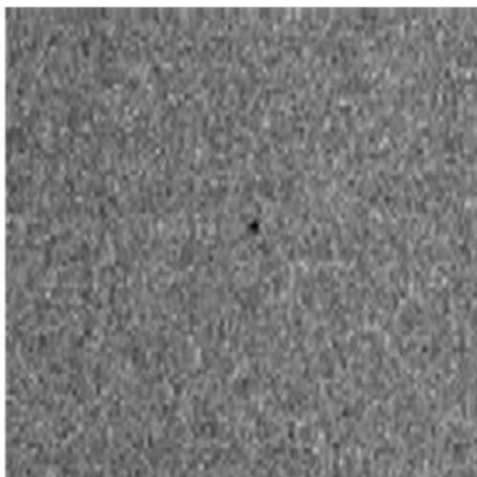


Figure MC651 RW2-3. Contact 36



Figure MC651 RW2-4. Contact 37

No archaeological avoidances, or known shipwrecks exist within the APE for the Proposed MC 651 RW2 Well. BOEM’s database lists no known archaeological sites within the well’s area of potential effect. The provided geophysical data delineated no potential cultural resources near Proposed Wellsite MC 651 RW2 (Map No. MC651 RW2-3). If any wood, ceramics, textiles or ferrous objects become exposed during the course of bottom disturbing operations, all activities must be halted and BOEM notified within 48 hours.

Wellsite Conditions

The proposed wellsite lies in an area of relatively smooth seafloor and is clear of any constraining seafloor conditions as defined by the 3-D seismic and high-resolution datasets. The wellbore will penetrate interbedded hemipelagic clays, turbidites, slope-fan, and mass-transport deposits containing clays, silts, and sands.

Water Depth and Seafloor Conditions. Seafloor conditions are favorable at the proposed wellsite location. The water depth at the surface location is approximately -6,538 ft and the seafloor slopes southeast at about 1.0° (Map MC651 RW2-1). Overall, the seafloor in the vicinity of proposed wellsite MC 651 RW2 is relatively smooth and benign (Map MC651 RW2-2).

The seafloor at the wellsite is covered by a ~10 ft hemipelagic clay drape (Illustration MC651 RW2-1). The low seafloor amplitude response and side-scan sonar reflectivity in the vicinity of the proposed wellsite suggests the seabed is covered by very soft clays and silty-clays (Maps MC651 RW2-3 and -RW2-4).

Deepwater Benthic Communities. Deepwater benthic communities are not expected at the proposed wellsite. There are no interpreted features or areas capable of supporting densely-populated benthic communities within 2,000 ft of the proposed location. The Side-Scan Sonar Mosaic (Map MC651 RW2-3) and Seafloor Amplitude Rendering (Map MC651 RW2-4) show normal or ambient returns along the seabed with no indication of any hard-bottom or fluid expulsion events within 2,000 ft of the proposed well. In addition, BOEM does not list any areas of positive or negative seafloor anomalies within 2,000 ft of the location (BOEM, 2018b).

Stratigraphy. The stratigraphy at the proposed well location is depicted on Illustrations MC651 RW2-1 through MC651 RW2-4. The Tophole Prognosis Chart (Illustration MC651 RW2-3) shows the inline, annotated with calculated depths to the various horizons and predicted lithology of the sequences, along with their potential for shallow gas and shallow water flow. In general, the shallow stratigraphic sequences to the Limit of Investigation (6,895 ft bml) reflect alternating episodic deposition of hemipelagic clays and silty clays, turbidites, mass-transport, and slope-fan deposits. Overall, the seismic reflection character suggests that the sequences are composed of clays and silts interspersed with sands, primarily in the interbedded slope-fan units.

The subbottom profiler data define the stratigraphic section between the seafloor and approximately Horizon 10 (218 ft bml) in the area of the proposed wellsite (Illustration MC651 RW2-1). The uppermost 10 ft of sediment at the wellsite is a drape consisting of very soft, high water content, silty-clays. The sediments below the drape to about 133 ft bml are stratified clays and silty-clays. A thin clay-rich mass-transport deposit is interspersed within the layered clays between 133 ft to 153 ft bml.

The 3-D seismic data define the stratigraphy from the seafloor to the Limit of Investigation, about 6,895 ft bml (Illustrations MC651 RW2-2 and -RW2-3). Five seismic reflections (Horizons 10 through 50) define the shallow section beneath the well. The sedimentary section from Horizon 10 to Horizon 20 (Unit 2), between 218 ft and 485 ft bml, likely corresponds to the distal margin of the slope-fan sequence identified as the "Blue Unit". The Blue Unit is a regional basin-floor fan and the source of numerous shallow water flow incidents in the Mississippi Canyon Area. The sediments within this unit likely consist of clay-prone mass-transport deposits and turbidites. A high-amplitude reflector occurs mid-unit (about 304 ft to 370 ft bml) that likely corresponds to a sand seam. Gamma ray and resistivity well logs from the BP Well #1 in MC 607 indicate that about 30 ft of wet sand was encountered mid-unit and about 20 ft of wet sand was encountered at the base of the unit.

The proposed location lies northwest of a large buried channel that affects Units 3 and 4 in the Study Area (Illustration MC651 RW2-2). Unit 3 sediments at the proposed wellsite (Horizons 20 to 30 between 485 ft and 983 ft bml) will likely contain levee/overbank and turbidite deposits comprised of clays, silts, and thin sand layers.

Unit 4 (Horizon 30 to 40), between 983 ft and 2,822 ft bml, likely corresponds to a sand-prone slope-fan unit. The sediments in this unit are highly modified turbidites and mass-transport deposits. The upper half of the sequence, from 983 ft to 1,756 ft bml, also contain channelized sediments. Gamma ray and resistivity logs from BP's Well #1 in MC 607 indicate the presence of sands in Unit 4.

The sediments below Horizon 40 to the Limit of Investigation (Units 5 and 6), between 2,822 ft and 6,895 ft bml, are generally low-amplitude stratified reflectors interbedded with low-amplitude chaotic reflectors. These sediments are likely hemipelagic clays and silty clays interbedded with fine-grained turbidites and mass-transport deposits. Interbedded thin sand layers may be encountered below 3,891 ft bml.

Faults. The Proposed Wellsite MC 651 RW2 is not expected to intersect any seafloor or buried faults in the shallow section to the Limit of Investigation.

Shallow Gas and Shallow Water Flow. Interval amplitude searches were completed between the mapped horizons to help identify facies trends and possible gas-related anomalies within the seismic stratigraphic units. An additional amplitude search was conducted between the seafloor and Horizon 40 to capture anomalies occurring where Horizon 20 and 30 were unmappable (GEMS, 2016a). Significant shallow gas is not expected to be encountered within the shallow sediments within the Limit of Investigation. The potential for shallow water flow is considered negligible to moderate.

Shallow Gas. There are no apparent high-amplitude anomalies or other direct hydrocarbon indicators directly below or in the immediate vicinity of the proposed wellsite (Map MC651 RW2-5 and Illustration MC651 RW2-2). The closest mapped subsurface high-amplitude event to the proposed borehole is approximately 359 ft south of the location. The anomaly is located in the sand-prone slope-fan sequence within Unit 4 at a depth of about 1,612 ft bml (Illustration MC651 RW2-3). The elevated event is not associated with other direct hydrocarbon indicators and may represent lithologic variations rather than shallow gas accumulations. The anomaly is not expected to impact the wellsite.

A low potential for encountering shallow gas exists within the slope-fan unit between 983 ft and 2,822 ft bml and within thin sands below 3,891 ft bml to the Limit of Investigation. A negligible potential for shallow gas exists in the predominantly fine-grained sediments of Units 1 through 3 and Unit 5.

Shallow Water Flow. The potential for shallow water flow at this well location is considered negligible to moderate (Illustration MC651 RW2-3). Overpressured sand units in the Mississippi Canyon Protraction Area are generally associated with seismic facies representing Pleistocene intraslope fan complexes, and in some cases, channel or canyon sequences (Ostermeier et al., 2000). Two slope-fan sequences (Units 2 and 4) will be encountered by the proposed location within the Limit of Investigation.

The closest reported shallow water flow was approximately 3.0 miles northeast of the proposed wellsite at the BP Well #1 in the northeast portion of MC 607. The BP Well #1 encountered low flow while drilling the channelized slope fan deposits within the upper portion of Unit 4 at a depth of 1,246 ft bml (BOEM, 2018c; Illustration MC651 RW2-4). Additionally, Chevron's #001 well in MC 696, about 5.1 miles to the south-southeast, reported low severity water flow at 1,971 ft bml (BOEM, 2018c). The depth of flow corresponds to the lower portion of the mapped Unit 4 at the proposed location. The recently drilled Chevron MC 607#1 well did not report water flow conditions within Unit 4 or the other sequences within the Limit of Investigation (Chevron, person communication). However, muds used in the wellbore may have mitigated any overpressures. Unit 4 (983 ft to 2,822 ft bml) at the Proposed Wellsite MC 651 RW2 is designated with at least a moderate potential for shallow water flow.

No wells within the vicinity reported shallow water flow in the presumed "Blue Unit" sequence within Unit 2 (218 ft to 485 ft bml). This sequence, as well as the units between 485 ft to 983 ft bml and below Horizon 50 (3,891 ft bml) to the Limit of Investigation have a low potential for shallow water flow. Any fluids encountered within these sediments are not likely to be significantly overpressured. There is a negligible potential for shallow water flow within the remaining mapped sequences.

Results

The proposed MC 651 RW2 location in Mississippi Canyon Area, block 607, appears suitable for exploration drilling operations. No areas with the potential for deepwater benthic communities are identified within 2,000 ft of the proposed wellsite.

Two unidentified sonar contacts are delineated in the side-scan sonar data within 2,000 ft of the proposed wellsite. The contacts do not appear to represent archaeological resources and do not have archaeological avoidances. If any wood, ceramics, textiles, or ferrous objects become exposed during the course of bottom disturbing operations, all activities must be halted and BOEM notified within 48 hours.

There is a moderate potential for encountering overpressured sands within the slope-fan sediments between 983 ft and 2,822 ft bml (Unit 4). Significant shallow gas is not expected between the seafloor and Limit of Investigation.

Closing

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

Sincerely,

GEOSCIENCE EARTH & MARINE SERVICES



Erin Williams Janes
Project Manager/Senior Geoscientist

Attachments (5 Maps and 4 Illustrations)

Distribution: Mr. Phillip Von Dullen III, Chevron U.S.A. Inc., Houston, TX (2 copies)

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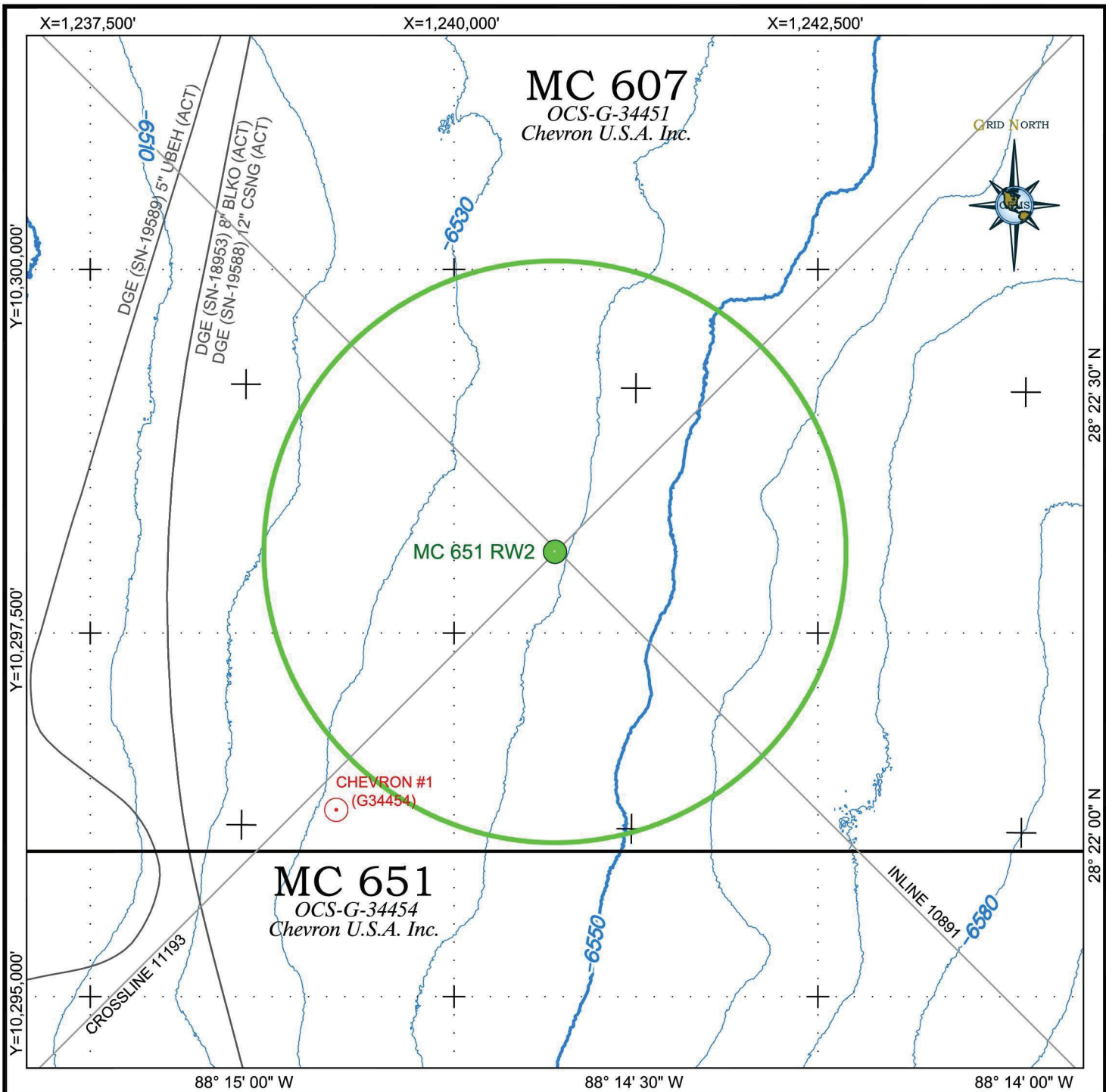
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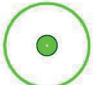

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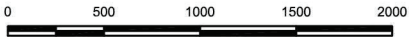
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 3-D SURVEY LINE.
 EXISTING PIPELINE LOCATION, AS REPORTED BY BOEM.
 EXISTING WELL LOCATION, AS REPORTED BY BOEM.
 PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.
 WATER DEPTH CONTOUR (MBE DATA) CONTOUR INTERVAL = 10 FT.

NOTE: MC 607 IS A DESIGNATED WATER FLOW AND ARCHAEOLOGICALLY SIGNIFICANT BLOCK.

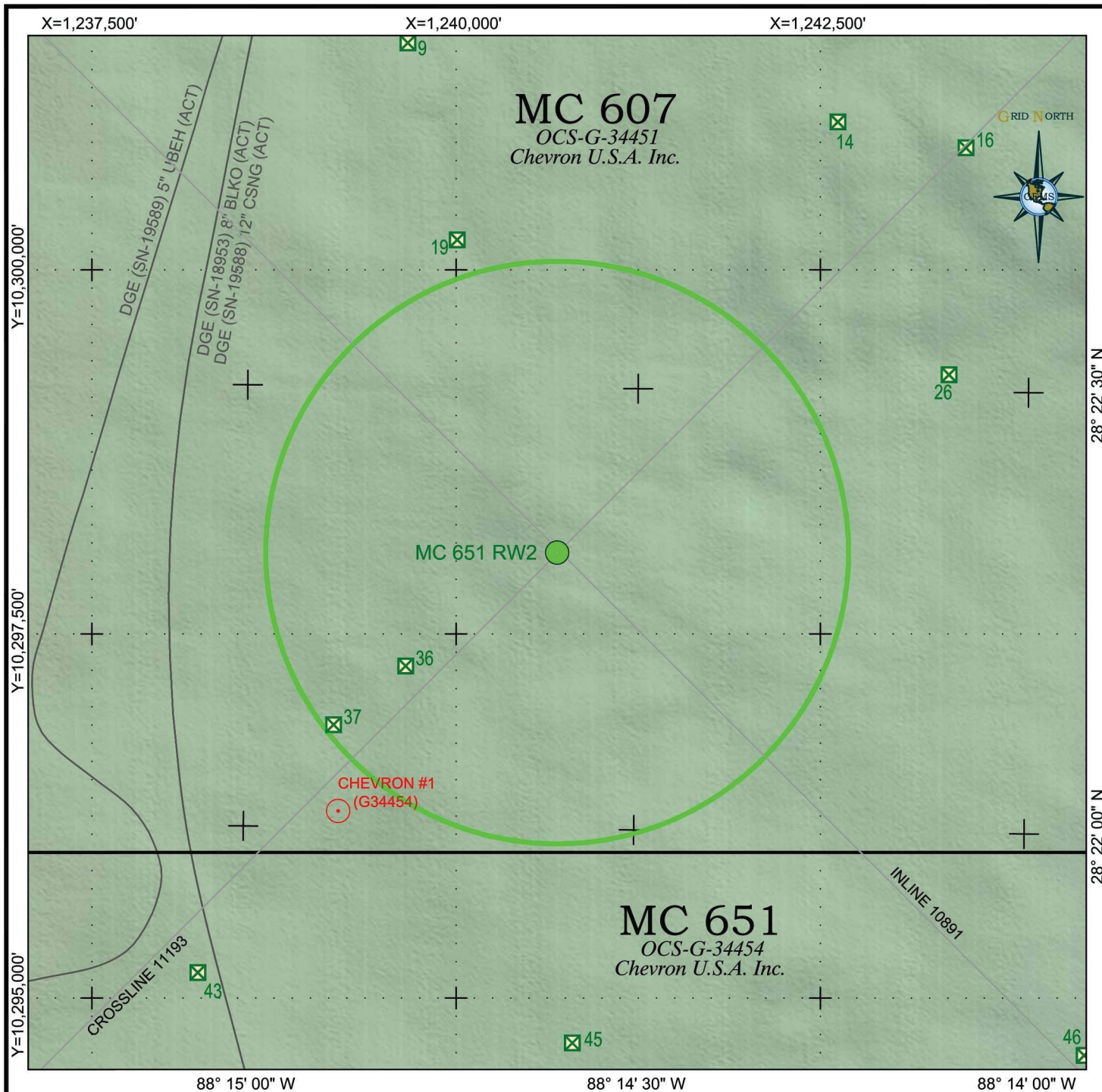
 **CHEVRON U.S.A. INC.**
BATHYMETRY MAP
BLOCK 607
MISSISSIPPI CANYON AREA
GULF OF MEXICO







 SCALE 1 : 12,000 or 1" = 1,000'



DATE: 25 JUNE 2018
 FILE NAME: 2763_WELLS.DWG
 PROJECT NO.: 0418-2763

MAP NO. MC651 RW2-1



-  3-D SURVEY LINE.
-  EXISTING PIPELINE LOCATION, AS REPORTED BY BOEM.
-  EXISTING WELL LOCATION, AS REPORTED BY BOEM.
-  PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.
-  SIDE-SCAN SONAR CONTACT (GEMS, 2016b).



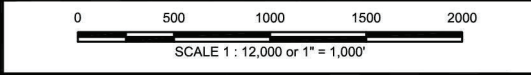
**CHEVRON
U.S.A. INC.**

**SEAFLOOR
FEATURES MAP**

BLOCK 607

MISSISSIPPI CANYON AREA

GULF OF MEXICO

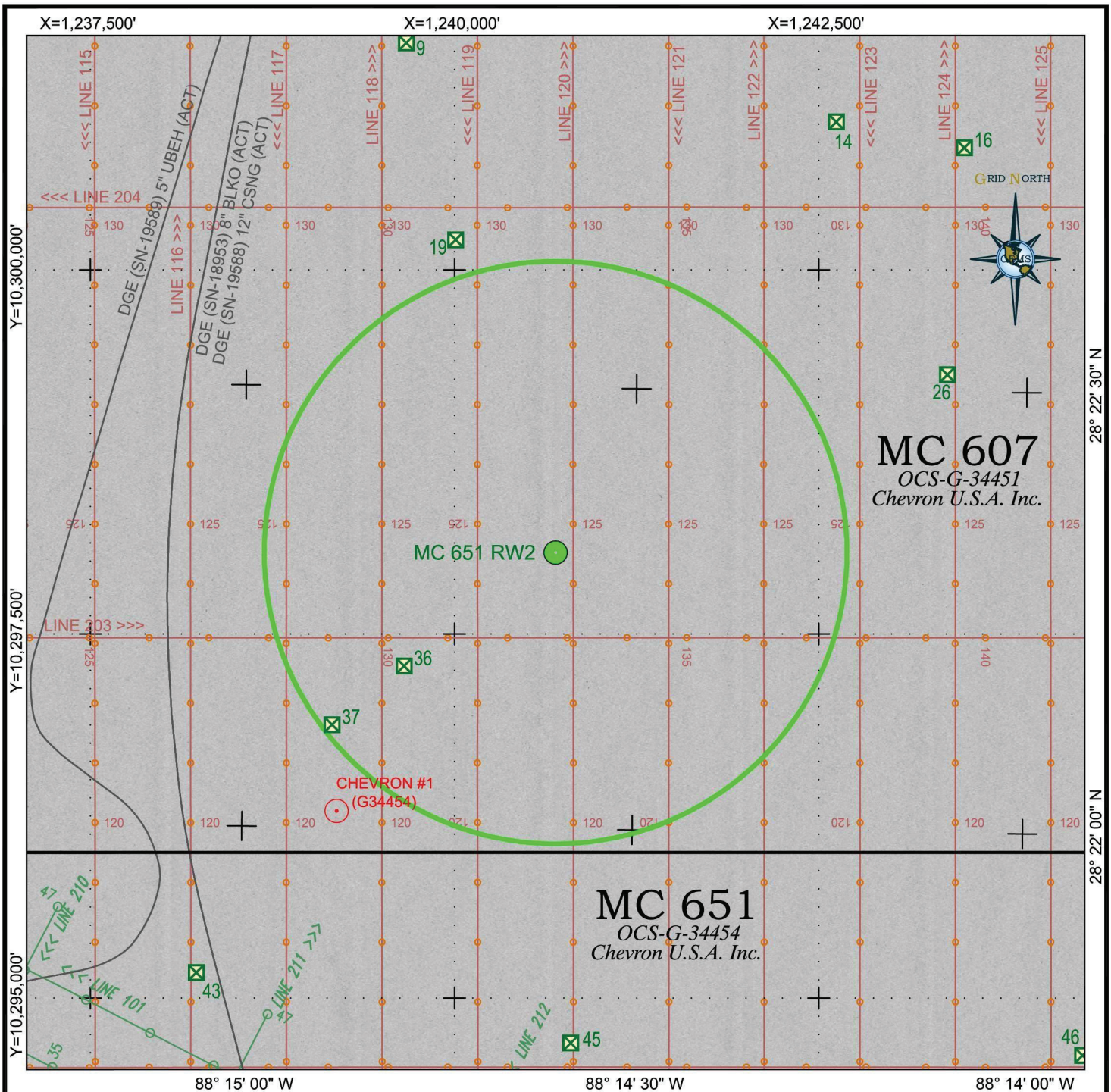


DATE: 25 JUNE 2018
 FILE NAME: 2763_WELLS.DWG
 PROJECT NO.: 0418-2763

MAP NO. MC651 RW2-2

NOTE: MC 607 IS A DESIGNATED WATER FLOW AND ARCHAEOLOGICALLY SIGNIFICANT BLOCK.





88° 15' 00" W 88° 14' 30" W 88° 14' 00" W

Y=10,295,000' Y=10,297,500' Y=10,300,000'

X=1,237,500' X=1,240,000' X=1,242,500'

28° 22' 00" N 28° 22' 30" N

MC 607
OCS-G-34451
Chevron U.S.A. Inc.

MC 651
OCS-G-34454
Chevron U.S.A. Inc.

CHEVRON #1
(G34454)

MC 651 RW2

Legend:

- AUV LINE NUMBER, HEADING AND FIXMARK (2016 FUGRO SURVEY).
- AUV LINE NUMBER, HEADING AND FIXMARK (2005 C&C SURVEY).
- EXISTING PIPELINE LOCATION, AS REPORTED BY BOEM.
- EXISTING WELL LOCATION, AS REPORTED BY BOEM.
- PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.
- ☒ SIDE-SCAN SONAR CONTACT (GEMS, 2016b).

NOTE: MC 607 IS A DESIGNATED WATER FLOW AND ARCHAEOLOGICALLY SIGNIFICANT BLOCK.

CHEVRON U.S.A. INC.

SIDE-SCAN SONAR MOSAIC

BLOCK 607
MISSISSIPPI CANYON AREA
GULF OF MEXICO

0 500 1000 1500 2000
SCALE 1 : 12,000 or 1" = 1,000'

GEOSCIENCE EARTH & MARINE SERVICES, INC.

DATE: 25 JUNE 2018
FILE NAME: 2763_WELLS.DWG
PROJECT NO.: 0418-2763

MAP NO. MC651 RW2-3

X=1,237,500'

X=1,240,000'

X=1,242,500'

Y=10,300,000'

Y=10,297,500'

Y=10,295,000'

28° 22' 30" N

28° 22' 00" N

MC 607
OCS-G-34451
Chevron U.S.A. Inc.



MC 651 RW2

CHEVRON #1
(G34454)

MC 651
OCS-G-34454
Chevron U.S.A. Inc.





CROSSLINE 11193

INLINE 10891

88° 15' 00" W

88° 14' 30" W

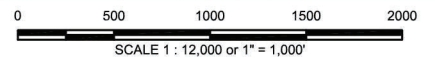
88° 14' 00" W

-  3-D SURVEY LINE.
-  EXISTING PIPELINE LOCATION, AS REPORTED BY BOEM.
-  EXISTING WELL LOCATION, AS REPORTED BY BOEM.
-  PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.



CHEVRON
U.S.A. INC.

SEAFLOOR AMPLITUDE
RENDERING
BLOCK 607
MISSISSIPPI CANYON AREA
GULF OF MEXICO



AZIMUTH = 45°
ELEVATION = 45°
V.E. = 3x

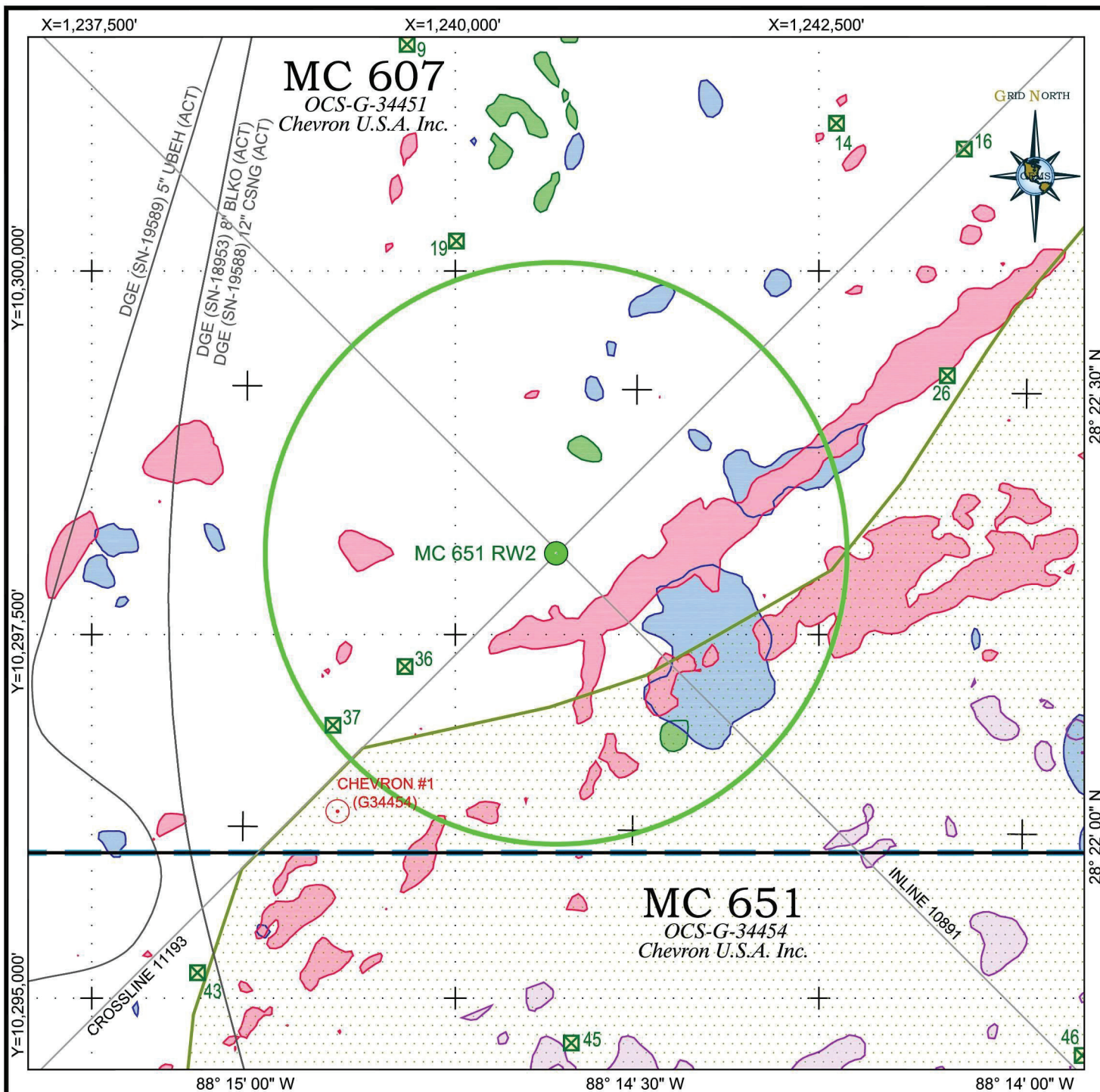


NOTE: MC 607 IS A DESIGNATED WATER FLOW AND ARCHAEOLOGICALLY SIGNIFICANT BLOCK.




DATE: 25 JUNE 2018
FILE NAME: 2763_WELLS.DWG
PROJECT NO.: 0418-2763

MAP NO. MC651 RW2-4



<ul style="list-style-type: none"> 3-D SURVEY LINE. EXISTING PIPELINE LOCATION, AS REPORTED BY BOEM. EXISTING WELL LOCATION, AS REPORTED BY BOEM. PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE. SIDE-SCAN SONAR CONTACT (GEMS, 2016b). BURIED CHANNEL WITHIN UNITS 3 AND 4. 	<p style="text-align: center;"><u>AMPLITUDE ANOMALIES</u></p> <ul style="list-style-type: none"> AMPLITUDE ANOMALIES BETWEEN HORIZON 30 AND HORIZON 40 (UNIT 4). AMPLITUDE ANOMALIES BETWEEN SEAFLOOR AND HORIZON 40. AMPLITUDE ANOMALIES BETWEEN HORIZON 40 AND HORIZON 50 (UNIT 5). AMPLITUDE ANOMALIES BETWEEN HORIZON 50 AND LIMIT OF INVESTIGATION 2 SECONDS BELOW SEAFLOOR (UNIT 6).
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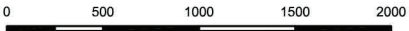
NOTE: MC 607 IS A DESIGNATED WATER FLOW AND ARCHAEOLOGICALLY SIGNIFICANT BLOCK.




CHEVRON U.S.A. INC.

GEOLOGIC FEATURES MAP

BLOCK 607
MISSISSIPPI CANYON AREA
GULF OF MEXICO



SCALE 1 : 12,000 or 1" = 1,000'



GEOSCIENCE EARTH & MARINE SERVICES, INC.

DATE: 25 JUNE 2018
 FILE NAME: 2763_WELLS.DWG
 PROJECT NO.: 0418-2763

MAP NO. MC651 RW2-5

SECTION 4

HYDROGEN SULFIDE INFORMATION

4.1 CONCENTRATION

Chevron anticipates encountering 15-40 ppm H₂S during the proposed operations.

4.2 CLASSIFICATION

By letter dated August 22, 2018, Supplemental EP (Control No. S-7903), BOEM classified MC Blocks 607 and 651 as H₂S present.

4.3 H₂S CONTINGENCY PLAN

As per 30 CFR 250.490 and NTL No. 2009-G31, "Hydrogen Sulfide," Chevron submitted and BSEE approved an H₂S Contingency Plan for wells drilled under the previous EP.

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

A Site Clearance Letter within 500 feet of the Ballymore MC 607 drill center was included In EP (Control No. S-7903), approved on August 22, 2018.

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)

MC Blocks 607, 650, 651 and 652 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)

MC Blocks 607, 650, 651 and 652 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

MC Blocks 607, 650, 651 and 652 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
Whale, Fin	<i>Balaenoptera physalus</i>	E	X ¹	--	None

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico
			Lease Area	Coastal	
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>Balaenopiera borealis</i>	E	X ¹	--	None
Whale, Sperm	<i>Physeter catodon</i> (= <i>macrocephalus</i>)	E	X	--	None
Terrestrial Mammals					
Mouse, Beach (Alabama, Choctawatchee, Perdido Key, St. Andrew)	<i>Peromyscus polionotus</i>	E	-	X	Alabama, Florida (panhandle) beaches
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
Curlew, Eskimo	<i>Numenius borealis</i>	E	-	X	none
Falcon, Northern Aplomado	<i>Falco femoralis septentrionalis</i>	E	-	X	none
Knot, Red	<i>Calidris canutus rufa</i>	T	-	X	None
Stork, Wood	<i>Mycteria americana</i>	T	-	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
Fish					
Sturgeon, Gulf	<i>Acipenser oxyrinchus</i> (= <i>oxyrhynchus</i>) <i>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	None

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico
			Lease Area	Coastal	
Ray, Giant Manta	<i>Manta birostris</i>	E	X	--	None
Corals					
Coral, Elkhorn	<i>Acopora palmate</i>	T	X ²	X	Florida Keys and Dry Tortugas
Coral, Staghorn	<i>Acopora cervicornis</i>	T	X	X	Florida
Coral, Boulder Star	<i>Orbicella franksi</i>	T	X	X	none
Coral, Lobed Star	<i>Orbicella annularis</i>	T	X	X	None
Coral, Mountainous Star	<i>Orbicella faveolate</i>	T	X	X	None
Coral, Rough Cactus	<i>Mycetophyllia ferox</i>	T	-	X	None

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.

6.8 ARCHAEOLOGICAL REPORT

An Archaeological Assessment for MC Blocks 606-607 & 651 was previously submitted. Further, the proposed operations will be conducted from within 500 feet of a previously approved surface location as provided for in EP (Control No. S-7903); 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 Mexico” 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 - WASTE ESTIMATED TO BE GENERATED, TREATED AND/OR DOWNHOLE DISPOSED OR DISCHARGED TO THE GOM

Please specify if the amount reported is a total or per well amount and be sure to include appropriate units.

Projected generated waste			Projected ocean discharges		Projected Downhole Disposal
Type of Waste	Composition	Projected Amount	Discharge rate	Discharge Method	Answer yes or no
Will drilling occur ? If yes, you should list muds and cuttings					
<i>EXAMPLE: Cuttings wetted with synthetic based fluid</i>	<i>Cuttings generated while using synthetic based drilling fluid.</i>	<i>X bbl/well</i>	<i>X bbl/day/well</i>	<i>discharge overboard</i>	<i>No</i>
Water-based drilling fluid	NO DRILLING ACTIVITIES	NA	NA	NA	No
Cuttings wetted with water-based fluid	NO DRILLING ACTIVITIES	NA	NA	NA	No
Cuttings wetted with synthetic-based fluid	NO DRILLING ACTIVITIES	NA	NA	NA	No
NO DRILLING PROPOSED					
Will humans be there? If yes, expect conventional waste					
<i>EXAMPLE: Sanitary waste water</i>	<i>Sanitary waste from living quarters</i>	<i>X bbl/well</i>	<i>X bbl/hr/well</i>	<i>chlorinate and discharge overboard</i>	<i>No</i>
Domestic waste			N/A		No
Sanitary waste			N/A		No
Is there a deck? If yes, there will be Deck Drainage					
Deck Drainage			N/A		No
Will you conduct well treatment, completion, or workover?					
Well treatment fluids			N/A		No
Well completion fluids			N/A		No
Workover fluids			N/A		No
Miscellaneous discharges. If yes, only fill in those associated with your activity.					
Desalinization unit discharge			N/A		No
Blowout prevent fluid			N/A		No
Ballast water			N/A		No
Bilge water			N/A		No
Excess cement at seafloor			N/A		No
Fire water			N/A		No
Cooling water			N/A		No
Will you produce hydrocarbons? If yes fill in for produced water.					
Produced water		1,738,130 bbl/yr/well	4,762 bbl/day/well	discharged overboard through diffuser	No
Please enter individual or general to indicate which type of NPDES permit you will be covered by?			General		
NOTE: If you will not have a type of waste for the activity being applied for, enter NA for all columns in the row.			NOTE: All discharged wastes should comply with the requirements of the NPDES permit.		

SECTION 8 AIR EMISSIONS INFORMATION

8.1 SUMMARY INFORMATION

There are no existing facilities or activities co-located with the currently proposed activities; therefore, the Complex Total Emissions are the same as the Plan Emissions and are provided in **Attachment 8-A**.

Attachment 8-A

DOCD/DPP - AIR QUALITY

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

COMPANY	Chevron U.S.A., Inc.
AREA	Mississippi Canyon
BLOCK	607
LEASE	OCS-G34451
FACILITY	NA - Installation Vessel/DP Drillship
WELL	BP001, BP002, BP003
COMPANY CONTACT	Kathy Sharp
TELEPHONE NO.	985-773-6230
REMARKS	

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER O PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2023	6	60
2024		
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		

AIR EMISSIONS COMPUTATION FACTORS

Fuel Usage Conversion Factors	Natural Gas Turbines			Natural Gas Engines			Diesel Recip. Engine			Diesel Turbines		
	SCF/hp-hr			SCF/hp-hr			GAL/hp-hr			GAL/hp-hr		
		9.524			7.143		0.0514		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/ https://www3.epa.gov/ttn/chie1/ap42/ch03/final/c03s04.pdf
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	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	0.0047	1.4914	0.0820	3.73E-05	0.1491	0.0003	USEPA 2017 NEI/TSP (units converted) refer to Diesel Boiler Reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
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	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
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.epiwebstore.org/publications/item.cfm?9879d33a-8be0-44bc-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	
On-Ice - Other Construction Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Other Survey Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Tractor	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	https://www.epa.gov/moves/nonroad2008a-installation-and-updates
On-Ice - Truck (for gravel island)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Truck (for surveys)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
Man Camp - Operation (max people/day)	tons/person/day		0.0004	0.0004	0.0004	0.006	0.001	N/A	0.001	N/A	BOEM 2014-1001	2014	https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/BOEM Newsroom/Library/Publications/2014-1001.pdf
Vessels - Ice Management Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI/TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
Vessels - Hovercraft Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI/TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data

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

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

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

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

AIR EMISSIONS CALCULATIONS - 2ND YEAR

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																
Chevron U.S.A., Inc.	Mississippi Canyon	607	OCS-G34451	NA - Installation Vessel (DP Drilling)	BP001, BP002, BP003	Kathy Sharp	985-773-6230																	
OPERATIONS																								
EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL HP	ACT. FUEL GAL/D	RUN TIME HR/D	MAXIMUM POUNDS PER HOUR												ESTIMATED TONS						
		HP	SCF/HR	SCF/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	
		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																		
DRILLING	VESSELS - Drilling - Propulsion Engine - Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Drilling - Propulsion Engine - Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Drilling - Propulsion Engine - Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Diesel Boiler	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Drilling Prime Engine, Auxiliary	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSELS - Pipeline Laying Vessel - Diesel	27035	1390.843	33380.22	24	80	19.07	11.51	11.16	0.28	456.96	13.14	0.00	71.67	0.13	13.73	8.29	8.04	0.20	329.01	9.46	0.00	51.61	0.10
	VESSELS - Construction - Diesel	26069	1341.146	32187.50	24	20	18.39	11.10	10.76	0.27	440.64	12.67	0.00	69.11	0.13	4.41	2.66	2.58	0.06	105.75	3.04	0.00	16.59	0.03
INSTALLATION	VESSELS - Pipeline Burying - Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	TPD	SCF/HR	COUNT																				
	WASTE INCINERATOR - Vessels Pipeline Laying Vessel	0.3	0	0	24	60	--	11.25	11.25	1.88	1.50	--	--	0.00	--	--	8.10	8.10	1.35	1.08	--	--	0.00	--
	WASTE INCINERATOR - Vessels - Construction	1.22	0	0	24	20	--	15.25	15.25	2.54	2.03	--	--	0.00	0.00	--	3.66	3.66	0.61	0.49	--	--	0.00	0.00
FACILITY INSTALLATI	VESSELS - Heavy Lift Vessel/Demck Barge Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Light Construction Diesel	29989	1542.814	37027.54	24	120	21.16	12.76	12.38	0.31	506.90	14.57	0.00	79.51	0.15	30.47	18.38	17.83	0.44	729.93	20.99	0.00	114.49	0.21
	MISC.	TPD	SCF/HR	COUNT																				
	WASTE INCINERATOR - Vessels - Light Construction	0.4	0	0	24	120	--	31.50	31.50	5.25	4.20	0.00	--	0.00	--	--	45.36	45.36	7.56	6.05	0.00	--	0.00	--
PRODUCTION	RECIP - <600hp Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP - >600hp Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Shuttle Tankers	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Well Stimulation	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas Turbine	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Diesel Turbine	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Dual Fuel Turbine	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP, 2 Cycle Lean Natural Gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP, 4 Cycle Lean Natural Gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP, 4 Cycle Rich Natural Gas	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Diesel Boiler	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas Heater/Boiler/Burner	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT																				
	STORAGE TANK	0	0	0.00	1	1	--	--	--	--	--	0.00	--	--	--	--	--	--	--	0.00	--	--	--	--
	COMBUSTION FLARE - no smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - light smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - medium smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - heavy smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COLD VENT	0	0	0.00	1	1	--	--	--	--	--	0.00	--	--	--	--	--	--	--	0.00	--	--	--	--
	FUGITIVES	0	0	0.00	0	0	--	--	--	--	--	0.00	--	--	--	--	--	--	--	0.00	--	--	--	--
	GLYCOL DEHYDRATOR	0	0	0.00	1	1	--	--	--	--	--	0.00	--	--	--	--	--	--	--	0.00	--	--	--	--
	WASTE INCINERATOR	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DRILLING	Liquid Flaring	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	COMBUSTION FLARE - no smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - light smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - medium smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	COMBUSTION FLARE - heavy smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	VESSELS				HR/D	D/YR																		
	VESSELS - Ice Management Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023 Facility Total Emissions							58.62	93.37	92.31	10.52	1,412.23	40.38	0.00	220.29	0.41	48.61	86.45	85.57	10.23	1,172.31	33.49	0.00	182.68	0.34
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																							
	69.0																							
DRILLING	VESSELS - Crew Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Tugs Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSELS - Support Diesel, Laying	8000	411.568	9877.63	24	80	5.64	3.41	3.30	0.08	135.22	3.89	0.00	21.21	0.04	5.42	3.27	3.17	0.08	129.81	3.73	0.00	20.36	0.04
INSTALLATION	VESSELS - Support Diesel, Laying	57804	2973.785	71370.83	24	110																		

AIR EMISSIONS CALCULATIONS - 3RD YEAR

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																
Chevron U.S.A., Inc.	Mississippi Canyon	607	OCS-G34451	NA - Installation Vessel/DP Driller	BP001, BP002, BP003	Kathy Sharp	985-773-6230																	
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL GAL/HR	ACT. FUEL GAL/D	RUN TIME	MAXIMUM POUNDS PER HOUR											ESTIMATED TONS						
	Diesel Engines	HP	HP	SCF/HR	SCF/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
	Na. Gas Engines	HP	HP	SCF/HR	SCF/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
	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*	64369	3311.528	79476.66	24	150	45.41	27.40	26.58	0.66	1088.01	31.28	0.00	170.65	0.32	81.74	49.32	47.84	1.19	1958.42	56.31	0.01	307.17	0.57
	VESSELS - Drilling - Propulsion Engine - Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Drilling - Propulsion Engine - Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Drilling - Propulsion Engine - Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Diesel Boiler	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Drilling Prime Engine, Auxiliary	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSELS - Pipeline Laying Vessel - Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSELS - Pipeline Burying - Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/Derrick Barge Diesel	0	0	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	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	RECIP. >600hp Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	VESSELS - Shuttle Tankers	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Well Stimulation	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas Turbine	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	Diesel Turbine	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Dual Fuel Turbine	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP. 2 Cycle Lean Natural Gas	0	0	0.00	0	0	--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	
	RECIP. 4 Cycle Lean Natural Gas	0	0	0.00	0	0	--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	
	RECIP. 4 Cycle Rich Natural Gas	0	0	0.00	0	0	--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	
	Diesel Boiler	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Gas Heater/Boiler/Burner	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MISC		BPD	SCF/HR	COUNT																				
STORAGE TANK	COMBUSTION FLARE - no smoke	0	0	0.00	0	1	1	--	--	--	--	0.00	--	0.00	--	--	--	--	--	--	0.00	--	0.00	--
	COMBUSTION FLARE - light smoke	0	0	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - medium smoke	0	0	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - heavy smoke	0	0	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COLD VENT	--	0	1	1	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	0.00	--	0.00	--
	FUGITIVES	--	0	0	0	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	0.00	--	0.00	--
	GLYCOL DEHYDRATOR	--	0	1	1	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	0.00	--	0.00	--
	WASTE INCINERATOR	0	0	0.00	0	0	--	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
DRILLING	Liquid Flaring	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	COMBUSTION FLARE - no smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - light smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - medium smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - heavy smoke	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	VESSELS				HR/D	D/YR																		
	VESSELS - Ice Management Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	
2025-2033	Facility Total Emissions				0	0	45.41	27.40	26.58	0.66	1,088.01	31.28	0.00	170.65	0.32	81.74	49.32	47.84	1.19	1,958.42	56.31	0.01	307.17	0.57
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES	69.0														2,297.70			2,297.70	2,297.70	2,297.70		57,197.67	
DRILLING	VESSELS - Crew Diesel	10800	555.6168	13334.80	19	122	7.62	4.60	4.46	0.11	182.55	5.25	0.00	28.63	0.05	8.83	5.33	1.75	0.13	211.57	6.08	0.00	33.18	0.06
	VESSELS - Supply Diesel	6600	339.5436	8149.05	7	183	4.66	2.81	2.72	0.07	111.56	3.21	0.00	17.50	0.03	2.98	1.80	1.57	0.04	71.45	2.05	0.00	11.21	0.02
	VESSELS - Tugs Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	VESSELS - Support Diesel, Laying	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSELS - Support Diesel, Burying	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Crew Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY	VESSELS - Material Tug Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSELS - Crew Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply Diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	VESSELS - Support Diesel	0	0	0.00																				

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL				
Chevron U.S.A., Inc.	Mississippi Canyon	607	OCS-G34451	NA - Installation Vessel/DP Drillship	BP001, BP002, BP003				
Year	Facility Emitted Substance								
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
2023	48.61	86.45	85.57	10.23	1172.31	33.49	0.00	182.68	0.34
2024	24.72	38.74	38.29	4.33	595.55	17.03	0.00	92.91	0.17
2025-2033	81.74	49.32	47.84	1.19	1958.42	56.31	0.01	307.17	0.57
Allowable	2297.70			2297.70	2297.70	2297.70		57197.67	

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 Mexico Regional OSRP approved on March 22, 2016; Chevron submitted the Biennial Review update on March 1, 2021 and which BSEE acknowledged on June 24, 2021. 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)

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 Mexico 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 Mexico 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	MC 607
Facility designation	A (Tahiti Spar)	Ballymore
Distance to nearest shoreline	118	69
Storage tanks & flowlines (bbl)	5,278	NA
Lease term pipelines (bbl)	4,044	990
Uncontrolled blowout (bbl)	186,452	NA
Total Volume (bbl)	195,774	990
Type of oil(s) (crude, condensate, diesel)	Crude	Crude
API gravity	29.5°	36°

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 June 24, 2021, 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 Mexico. Chevron has oil spill response service contracts with both local and international companies and cooperatives and has a large corps of dedicated Chevron emergency responders that can work in the Gulf of Mexico. Chevron has contracts with the following oil spill response service providers.

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

- 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 Mexico, including Lake Charles, Intracoastal City, Houma, Fort Jackson and Venice, Louisiana; Galveston, Texas; and Pascagoula, Mississippi. OSCs provide resources to respond to offshore incidents including areas identified in this plan.

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

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 Mexico Oil Spill Response Plan and applies to a worst-case discharge volume of 465,709 barrels per day that could occur at a Chevron facility located in Mississippi Canyon Block 122. These same assets would be mobilized to all sites contained in this plan.

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

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

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

Follow up actions will include the following:

- Locate, monitor, track and project the movement of the oil spill
- Mobilize nearshore skimming and booming vessels, barges and systems to shorebase locations for rapid deployment in the nearshore environment

- Mobilize oil spill removal organization (OSRO) resources and assets to staging areas for rapid deployment of shoreline protection resources
- Mobilize wildlife protection and rehabilitation resources to staging areas for rapid deployment of resources
- Determine Incident Command Post (ICP) locations based on intervention operations and results and surface oil spill trajectories
- Determine ICP Operations Branch locations based on intervention operations and results and surface oil spill trajectories
- Determine additional staging areas based on the spill trajectory

Spill Response Resources and Deployment Time

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

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

The strategy for offshore response will be to:

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

Simultaneous implementation of these strategies is designed to effectively contain and recover an oil spill significantly offshore in order to minimize the potential impacts to public health, wildlife and the environment. Separate and distinct resources will be assigned for each operation. Based on the anticipated worst case discharge scenario, Chevron can be onsite with contracted oil spill recovery equipment with adequate response capacity to contain and recover surface hydrocarbons, and prevent land impact, to the maximum extent practicable, within an estimated 24 hours.

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

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

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

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

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

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

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

The BOEM oil spill trajectory model indicates that Louisiana parishes and Mississippi, Alabama, and Florida counties could be impacted by an oil spill from areas listed in this plan. These areas are dominated by fine sand beaches, coarse sand beaches, swamps and saltwater marshes. The

four subsections below summarize potential concerns with each environment. This information is taken from various Coast Guard Area Contingency Plans.

Fine Sand Beach Environment

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

Coarse Sand Beach Environment

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

Swamp Environment

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

Salt Marsh Environment

- Sensitivity: The environmental sensitivity is high for salt marsh because of the presence of wetland habitat.

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

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

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

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

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

Response Capability

Chevron is a member of both CGA and MSRC cooperatives. CGA and MSRC are the primary surface response equipment providers for Chevron in the Gulf of Mexico 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 Mexico. 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 Mexico coastal ports.

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

Estimated Initial Equipment Response Times

Capability	Equipment	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)

Capability	Equipment	ETA	Source
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 Mexico 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 Mexico 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 Mexico OSRP is maintained by the Chevron Gulf of Mexico 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

Chevron 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, Chevron 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 Mexico 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.

Chevron 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

MC Blocks 607, 650, 651 and 652 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

Development activities are subject to the following stipulations attached to Leases OCS-G 34451, 34905, 34454, and 34906, MC Blocks 607, 650, 651 and 652.

11.1 MARINE PROTECTED SPECIES

In accordance with the Federal Endangered Species Act and the Marine Mammal Protection Act, Chevron 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

Chevron 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

Chevron 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 Ballymore subsea wells (*MC Block 607, Well Nos. BP001, BP002 and BP003*) will be protected by subsea wellheads and trees. The wells will be connected to the new MC 607 4-slot subsea manifold via 6.81-inch jumpers (*submittal pending*), each approximately 120 foot in length. A 10.75-inch right-of-way pipeline (*submittal pending*) will be installed to transport produced hydrocarbons from the MC 607 Drill Center manifold to the Chevron operated Blind Faith 'A' FPU located in MC Block 650 with ultimate delivery of gas into Operations System MLX and ultimate delivery of liquids into Operations System No. 57.0. The maximum flow rate is 10,000 BOPD and 22.0 MMCFD.

13.2 TRANSPORTATION SYSTEM

Production will flow from A (Blind Faith) via Williams Field Services – Gulf Coast Company, L.P.'s Pipeline Segment Number 15949 (gas) and Williams Oil Gathering, L.L.C.'s Pipeline Segment Number 15948 (oil) for ultimate delivery to shore.

No near shore or onshore pipelines or facilities will be constructed.

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. Chevron 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
Light Construction Vessel	630,000 gals	1	71 days (only during subsea installation)
DP Pipelay Vessel	766,099 gals	1	38 days total (only during subsea installation)
Dive Support Vessel	360,000 gals	1	14 days (only during subsea installation)
Offshore Installation Support Vessel	318,910 gals	1	104 days total (only during subsea installation)
Helicopter	760 gals	1	As Needed

14.2 DIESEL OIL SUPPLY VESSELS

Fuel for the DP Vessels will be transported via a supply vessel as follows:

Size of Fuel Supply Vessel	Capacity of Fuel Supply Vessel	Frequency of Fuel Transfers	Route Fuel Supply Vessel Will Take
280 foot	135,000 gals	1-2 times per week	From shore base to block

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

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

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 wells is included as **Attachment 14-B**.

ATTACHMENT 14-A - WASTE AND SURPLUS ESTIMATED TO BE TRANSPORTED AND/OR DISPOSED OF ONSHORE

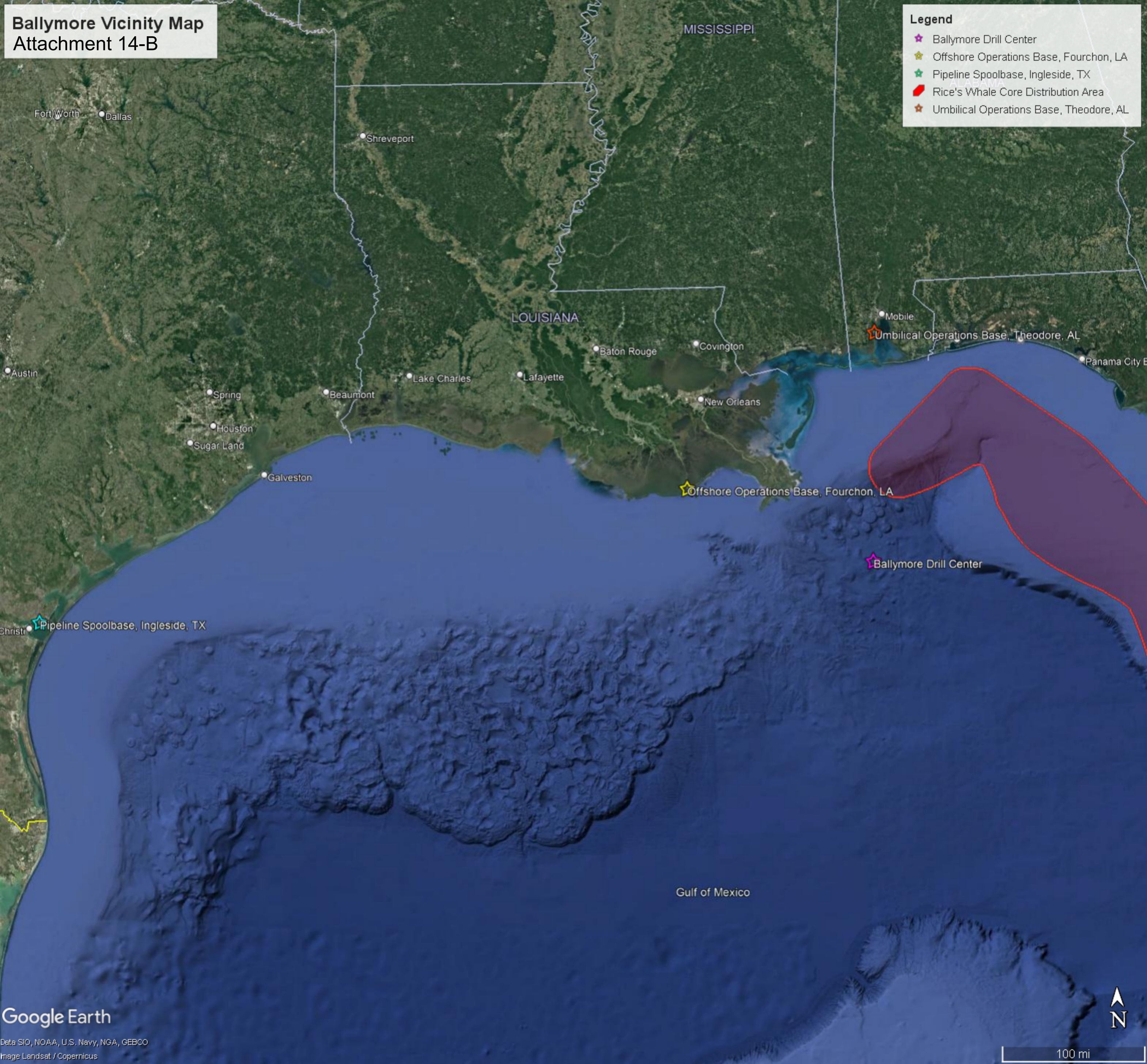
please specify whether the amount reported is a total or per well

Projected Generated Waste		Solid and Liquid Wastes Transportation		Waste Disposal	
Type of Waste	Composition	Transport Method	Name/Location of Facility	Amount	Disposal Method
Will drilling occur? If yes, fill in the muds and cuttings.					
<i>EXAMPLE: Synthetic-based drilling fluid or mud</i>	<i>Internal olefin, ester</i>	<i>Below deck storage tanks on offshore support vessels</i>	<i>Newport Environmental Services Inc., Ingleside, TX</i>	<i>X bbl/well</i>	<i>Recycled</i>
Oil-based drilling fluid or mud	NO DRILLING ACTIVITY	NA	NA	NA	NA
Synthetic-based drilling fluid or mud	NO DRILLING ACTIVITY	NA	NA	NA	NA
Cuttings wetted with Water-based fluid	NO DRILLING ACTIVITY	NA	NA	NA	NA
Cuttings wetted with Synthetic-based fluid	NO DRILLING ACTIVITY	NA	NA	NA	NA
Cuttings wetted with oil-based fluids	NO DRILLING ACTIVITY	NA	NA	NA	NA
Will you produce hydrocarbons? If yes fill in for produced sand.					
Produced sand (E&P waste)		Transport to shorebase by marine vessel in cutting boxes	Ecoserv, Port Fourchon, LA.	100 bbl/well	Liquids injected into disposal well and solids are landfilled
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.					
<i>EXAMPLE: trash and debris (recyclables)</i>	<i>Plastic, paper, aluminum</i>	<i>barged in a storage bin</i>	<i>ARC, New Iberia, LA</i>	<i>X lb/well</i>	<i>Recycled</i>
Zinc Bromide Completion Fluids	Treatment, completion, flowback fluids	Transport by boat in internal boat tank, MPT Tanks, or cutting boxes to shorebase	Ecoserv, Port Fourchon, LA.	1550 bbl/well	Recycled if possible; Liquids injected into disposal well.
Preservation Fluids	Preservation fluids from control systems	Transport by boat in waste tote, MPT Tank or internal boat tank	Ecoserv, Port Fourchon, LA.	72 bbl	Recycled if possible; Liquids injected into disposal well.
Chemically Treated Seawater	Hydrotest fluids of seawater and glycol mixture	Transport by boat in internal boat tank, MPT Tanks, or cutting boxes to shorebase	Ecoserv, Port Fourchon, LA.	1570 bbl	Recycled if possible; Liquids injected into disposal well.
Production Chemical	Hydrate Inhibitors	Transport by boat in internal boat tank, MPT Tanks, or cutting boxes to shorebase	Ecoserv, Port Fourchon, LA.	6 bbl	Recycled if possible; Liquids injected into disposal well.
Production Chemical	Corrosion Inhibitor	Transport by boat in internal boat tank, MPT Tanks, or cutting boxes to shorebase	Ecoserv, Port Fourchon, LA.	1 bbl	Recycled if possible; Liquids injected into disposal well.
Production Chemical	Scale Inhibitor	Transport by boat in internal boat tank, MPT Tanks, or cutting boxes to shorebase	Ecoserv, Port Fourchon, LA.	4 bbl	Recycled if possible; Liquids injected into disposal well.
Buffer Fluid	Ethylene Glycol Monobutyl Ether	Transport by boat in waste tote, MPT Tank or internal boat tank	Ecoserv, Port Fourchon, LA.	35 bbl	Recycled if possible; Liquids injected into disposal well.
Trash and debris	Plastic, paper, aluminum, glass			NA	Local Landfill
Used oil	Waste oil, i.e., refined oil, cooking oil & oily rags				
Wash water					
Chemical product wastes					
NOTE: If you will not have a type of waste, enter NA in the row.					

Ballymore Vicinity Map Attachment 14-B

Legend

- ☆ Ballymore Drill Center
- ☆ Offshore Operations Base, Fourchon, LA
- ☆ Pipeline Spoolbase, Ingleside, TX
- 🔴 Rice's Whale Core Distribution Area
- ☆ Umbilical Operations Base, Theodore, AL



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 – Port Fourchon Shorebase	Port 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 Chevron 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

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

SECTION 16 COASTAL ZONE MANAGEMENT (CZM) INFORMATION

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

Proposed activities are 129 miles from the Alabama shore and 69 miles from the Louisiana shore. Measures will be taken to avoid or mitigate the probable impacts. Chevron will operate in compliance with existing federal and state laws, regulations, and resultant enforceable program policies in Alabama's and Louisiana's Coastal Zone Management Programs.

The OCS related oil and gas exploratory and development activities having potential impact on the Alabama and Louisiana Coastal Zones are based on the location of the proposed facilities, access to those sites, best practical techniques for drilling locations, drilling equipment guidelines for the prevention of adverse environmental effects, effective environmental protection, emergency plans and contingency plans.

Relevant enforceable policies were considered in certifying consistency for Alabama and Louisiana. Certificates of Coastal Zone Management Consistency for the states of Alabama and Louisiana are included as **Attachment 16-A** and **Attachment 16-B** respectively.

Enforceable Program Policies of the Alabama Coastal Area Management Program (ACAMP)

Policy	Plan Section	Comments
Coastal Resource Use Policies		
Coastal Development		Dock and port facilities in LA will be used. There will be no new construction, dredging, or filling in Alabama state waters. There will be no new commercial development, capital improvements nor employment effects in Alabama's coastal zone.
Mineral Resource Exploration and Extraction		Proposed operations will take place approximately 129 to 132 miles from Alabama's coastline.
Commercial Fishing	9	
Hazard Management	3	A Shallow Hazards Report was previously submitted to BOEM in order to identify and assess the seafloor and shallow geologic conditions in this block.
Shoreline Erosion	9	
Recreation	9	
Transportation	13	

Policy	Plan Section	Comments
Natural Resource Protection Policies		
Biological Productivity	9	
Water Quality	9	
Water Resources	9	
Air Quality	8	
Wetlands and Submerged Grassbeds	9	
Beach and Dune Protection	9	
Wildlife Habitat Protection	9	
Endangered Species	9	
Cultural Resources Protection	6	An Archaeological Assessment, Blocks 606-607 & 651, Mississippi Canyon Area, Gulf of Mexico, Geoscience Earth & Marine Services, Inc., June 20, 2016 (GEMS Project No. 0316-2609) was previously submitted and approved on December 2, 2016 (EP Control No. N-9955),

ATTACHMENT 16-A

COASTAL ZONE MANAGEMENT CONSISTENCY CERTIFICATION

INITIAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT (DOCD)

MISSISSIPPI CANYON BLOCKS 607, 650 AND 651

OCS-G 34551, 34905 AND 34554

The proposed activity complies with the enforceable policies of the Alabama approved management program and will be conducted in a manner consistent with such program.

Chevron U.S.A. Inc. (00078)

Lessee or Operator

Greg
Kusinski,
Ph.D.

Digitally signed by
Greg Kusinski, Ph.D.
Date: 2022.07.28
03:12:27 -05'00'

Certifying Official

Date

ATTACHMENT 16-B

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

INITIAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT (DOCD)

MISSISSIPPI CANYON BLOCKS 607, 650 AND 651

OCS-G 34551, 34905 AND 34554

The proposed activity complies with the enforceable policies of the Louisiana approved management program and will be conducted in a manner consistent with such program.

Chevron U.S.A. Inc. (00078)

Lessee or Operator

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Kusinski,
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Date: 2022.07.28
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Certifying Official

Date

SECTION 17
ENVIRONMENTAL IMPACT ANALYSIS (EIA)

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

Attachment 17-A

Chevron U.S.A. Inc. (Chevron)

Initial Development Operations Coordination Document Mississippi Canyon Block 607 OCS-G 34451

(A) Impact Producing Factors

ENVIRONMENTAL IMPACT ANALYSIS WORKSHEET

Environment Resources	Impact Producing Factors (IPFs) Categories and Examples Refer to recent GOM OCS Lease Sale EIS for a more complete list of IPFs					
	Emissions (air, noise, light, etc.)	Effluents (muds, cutting, other discharges to the water column or seafloor)	Physical disturbances to the seafloor (rig or anchor emplacements, etc.)	Wastes sent to shore for treatment or disposal	Accidents (e.g., oil spills, chemical spills, H 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 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 activities are located a sufficient distance from a shipwreck or a prehistoric site that no impact would occur, the EIA can note that in a sentence or two.
- 8) All activities that you determine might have an adverse effect on endangered or threatened marine mammals or sea turtles or their critical habitats.
- 9) Production activities that involve transportation of produced fluids to shore using shuttle tankers or barges.

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 Mexico	Gulf of Mexico 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	GOM
Whale, Bryde's ⁴	<i>Balaenoptera brydei/edeni</i>	E	X	--	None	Eastern GOM
Whale, Fin	<i>Balaenoptera physalus</i>	E	X ¹	--	None	GOM
Whale, Humpback	<i>Megaptera novaeangliae</i>	E	X ¹	--	None	GOM
Whale, North Atlantic Right	<i>Eubalaena glacialis</i>	E	X ¹	--	None	GOM
Whale, Rice's ⁴	<i>Balaenoptera ricei</i>	E	X	--	None	GOM
Whale, Sei	<i>Balaenoptera borealis</i>	E	X ¹	--	None	GOM
Whale, Sperm	<i>Physeter catodon</i> (= <i>macrocephalus</i>)	E	X	--	None	GOM
Terrestrial Mammals						
Mouse, Beach (Alabama, Choctawatchee, Perdido Key, St. Andrew)	<i>Peromyscus polionotus</i>	E	-	X	Alabama, Florida (panhandle) beaches	Alabama, Florida (panhandle) beaches
Birds						
Plover, Piping	<i>Charadrius melodus</i>	T	-	X	Coastal Texas, Louisiana, Mississippi, Alabama and Florida (panhandle)	Coastal GOM
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
Curlew, Eskimo	<i>Numenius borealis</i>	E	-	X	none	Coastal Texas
Falcon, Northern Aplomado	<i>Falco femoralis septentrionalis</i>	E	-	X	none	Coastal Texas

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico	Gulf of Mexico Range
			Lease Area	Coastal		
Knot, Red	<i>Calidris canutus rufa</i>	T	-	X	None	Coastal GOM
Stork, Wood	<i>Mycteria americana</i>	T	-	X	None	Coastal Alabama and Florida
Reptiles						
Sea Turtle, Green	<i>Chelonia mydas</i>	T/E ³	X	X	None	GOM
Sea Turtle, Hawksbill	<i>Eretmochelys imbricata</i>	E	X	X	None	GOM
Sea Turtle, Kemp's Ridley	<i>Lepidochelys kempli</i>	E	X	X	None	GOM
Sea Turtle, Leatherback	<i>Derموchelys coriacea</i>	E	X	X	None	GOM
Sea Turtle, Loggerhead	<i>Caretta caretta</i>	T	X	X	Texas, Louisiana, Mississippi, Alabama, Florida	GOM
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)
Shark, Oceanic Whitetip	<i>Carcharhinus longimanus</i>	E	X	-	None	GOM
Sawfish, Smalltooth	<i>Pristis pectinate</i>	E	-	X	None	Florida
Grouper, Nassau	<i>Epinephelus striatus</i>	T	-	X	None	Florida
Ray, Giant Manta	<i>Manta birostris</i>	E	X	--	None	GOM
Corals						
Coral, Elkhorn	<i>Acopora palmate</i>	T	X ²	X	Florida Keys and Dry Tortugas	Flower Garden Banks, Florida, and the Caribbean
Coral, Staghorn	<i>Acopora cervicornis</i>	T	X	X	Florida	Flower Garden Banks, Florida, and the Caribbean
Coral, Boulder Star	<i>Orbicella franksi</i>	T	X	X	none	Flower Garden Banks and Florida
Coral, Lobed Star	<i>Orbicella annularis</i>	T	X	X	None	Flower Garden Banks and Caribbean
Coral, Mountainous Star	<i>Orbicella faveolate</i>	T	X	X	None	Flower Garden Banks and Gulf of Mexico
Coral, Rough Cactus	<i>Mycetophyllia ferox</i>	T	-	X	None	Florida and Southern Gulf of Mexico

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.

(B) Analysis

Site-Specific at Mississippi Canyon Block 607

Proposed operations consist of the installation of subsea infrastructure and commencement of production of three (3) wells in Mississippi Canyon Block 607 (MC 607).

The proposed infrastructure installation operations include:

- Installation of one new production manifold
- Installation of one lease-term 10.75-inch flowline jumper (approximately 100 feet in length)
- Installation of four new lease-term 6.81-inch well jumpers, (each approximately 120 feet in length)
- Installation of one lease-term control umbilical (approximately 19,970 feet in length) from the existing Blind Faith 'A' Floating Production Unit (FPU) in Mississippi Canyon Block 650 (MC 650) to a subsea umbilical termination assembly (SUTA) in MC 607
- Installation of one new Right-of-Way (ROW) 10.75-inch flowline and riser, which will flow from the new Pipeline End Termination (PLET) in MC 607 to the existing Blind Faith 'A' FPU in MC 650

Commencement of production is proposed from the following three (3) subsea wells:

- MC 607 BP001
- MC 607 BP002
- MC 607 BP003

The operations will be conducted with Dynamically Positioned Offshore Construction and Support Vessels.

There are no drilling operations proposed under this Plan. 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 and accidents.

Physical disturbances to the seafloor: Mississippi Canyon Block 607 is 81.6 miles from the closest designated Topographic Features Stipulation Block (Sackett Bank); therefore, no adverse impacts are expected. Additionally, Dynamically Positioned Offshore Construction and Support Vessels are being used for the proposed activities; therefore, only an insignificant amount of seafloor will be disturbed.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to benthic organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the

water column; measurable amounts have been documented down to a 10-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 Mexico 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 Chevron'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 GOM 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 provide 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 Mexico 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 Chevron'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 effluents, 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), and accidents.

Physical disturbances to the seafloor: Mississippi Canyon Block 607 is 55.5 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected. Additionally, Dynamically Positioned Offshore Construction and Support Vessels are being used for the proposed activities; 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, Mississippi Canyon Block 607 is 55.5 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills have the potential to foul benthic communities and cause lethal and sublethal effects on live bottom organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 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 Chevron'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 effluents and wastes sent to shore for treatment or disposal) from the proposed activities 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: Mississippi Canyon Block 607 is not located in an area characterized by the existence of live bottoms, and this lease does not contain a Live-Bottom Stipulation requiring a photo documentation survey and survey report. Additionally, Dynamically Positioned Offshore Construction and Support Vessels are being used for the proposed activities; 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, Mississippi Canyon Block 607 is 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 activities (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to live bottom organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 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 Chevron'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 effluents and 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 cause impacts to deepwater benthic communities.

Mississippi Canyon Block 607 is located in water depths of 984 feet (300 meters) or greater. At such depth high-density, deepwater benthic communities may sometimes be found. However, Mississippi Canyon Block 607 is approximately 17.1 miles from a known deepwater benthic community site (Mississippi Canyon Block 426), listed in NTL 2009-G40. Additionally, Dynamically Positioned Offshore Construction and Support Vessels are being used for the proposed activities; 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 Dynamically Positioned Offshore

Construction and Support Vessels, Chevron's proposed operations in Mississippi Canyon Block 607 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 Mississippi Canyon Block 607 include disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: Bottom area disturbances resulting from the installation of subsea infrastructure 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, Dynamically Positioned Offshore Construction and Support Vessels are being used for the proposed activities; therefore, only an insignificant amount of seafloor will be disturbed.

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

Drilling Fluid Spills

There are no drilling operations proposed under this Plan.

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 activities. 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 GOM region, give preapproval for the application of dispersant use subsea (BOEM 2017-009).

The operations proposed in this plan will be covered by Chevron'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 effluents, 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 Mexico, 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 Mississippi Canyon Block 607 include physical disturbances to the seafloor, emissions (noise / sound), and accidents.

Physical disturbances to the seafloor: The emplacement of a structure 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, Dynamically Positioned Offshore Construction and Support Vessels are being used for the proposed activities; 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 is 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.

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 Mexico 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 Mexico Outer Continental Shelf (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, Chevron 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.

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

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

7. Marine Mammals

The latest population estimates for the Gulf of Mexico 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 Mexico Bryde's whale) is the only commonly occurring baleen whale in the northern Gulf of Mexico and has been sighted off western Florida and in the De Soto Canyon region. Florida manatees have been sighted along the entire northern GOM but are mainly found in the shallow coastal waters of Florida, which are unassociated with the proposed actions. A complete list of all endangered and threatened marine mammals in the GOM 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 Mississippi Canyon Block 607 include emissions (noise / sound), discarded trash and debris, and accidents.

Emissions (noise / sound): Noises from 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 action is not likely to adversely affect ESA-listed whales.

Production noise would contribute to increases in the ambient noise environment of the GOM, 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 GOM. 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 GOM (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 GOM OCS operations (BOEM 2017-009). See **Item 20.1** for details on the Rice's whale.

Discarded trash and debris: Both entanglement in and ingestion of debris have caused the death or serious injury of marine mammals (Laist, 1997; MMC, 1999). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to substantially harm marine mammals. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, 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).

Chevron 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. Chevron 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 Chevron 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 Mexico 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 Mexico Outer Continental Shelf (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 may utilize a moon pool(s) to conduct various subsea activities. Details on moon pool operations, monitoring, and descriptions are included in Sections 10 and 12 of the Initial Development Operations Coordination Document. Chevron'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, Chevron 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 activities (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 GOM. 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 Chevron'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 Chevron'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 Mexico:

- 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 effluents and 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; Lohofener 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 GOM 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 GOM are located in **Item 20.5**. Potential IPFs to sea turtles as a result of the proposed operations include emissions (noise / sound), discarded trash and debris, and accidents.

Emissions (noise / sound): Noise from 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 action 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 activities 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.

Discarded trash and debris: Both entanglement in, and ingestion of, debris have caused the death or serious injury of sea turtles (Balazs, 1985). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to substantially harm sea turtles. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, 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).

Chevron 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. Chevron 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 Chevron 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 Mexico 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 may utilize a moon pool(s) to conduct various subsea activities. Details on moon pool operations, monitoring, and descriptions are included in Sections 10 and 12 of the Initial Development Operations Coordination Document. Chevron'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, Chevron 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 activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to the possibility of collisions with sea turtles. The activities proposed in this plan will be covered by Chevron'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.

Mississippi Canyon Block 607 is located 93.6 miles from the Breton Wilderness Area and 69 miles from shore. Applicable emissions data is included in **Section 8** of the Plan.

There would be a limited degree of air quality degradation in the immediate vicinity of the proposed activities. Plan Emissions for the proposed activities do not exceed the annual exemption levels as set forth by BOEM. Accidents and blowouts can release hydrocarbons or chemicals,

which could cause the emission of air pollutants. However, these releases would not impact onshore air quality because of the prevailing atmospheric conditions, emission height, emission rates, and the distance of Mississippi Canyon Block 607 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, Chevron 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 Mississippi Canyon Block 607 include physical disturbances to the seafloor and accidents.

Mississippi Canyon Block 607 is not located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks. Additionally, a site clearance letter provided by GEMS and previously submitted for the location (*Site Clearance Letter for Proposed Wellsite MC 651 RW2 Block 607 (OCS-G-34451) Mississippi Canyon Area, Gulf of Mexico; Project No. 0418-2763*) confirmed no archaeological avoidances or known shipwrecks existing in the project area.

Should Chevron 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.

Physical disturbances to the seafloor: Dynamically Positioned Offshore Construction and Support Vessels are being used for the proposed activities; therefore, only an insignificant amount of seafloor will be disturbed. Because physical disturbances to the seafloor will be minimized by the use of Dynamically Positioned Offshore Construction and Support Vessels, Chevron's proposed operations in Mississippi Canyon Block 607 are not likely to impact shipwreck sites.

Accidents: An accidental oil spill has the potential to cause some detrimental effects to shipwreck sites if the release were to occur subsea. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Chevron'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, Chevron 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 Mississippi Canyon Block 607 include disturbances to the seafloor and accidents.

Although Mississippi Canyon Block 607 is located inside the Archaeological Prehistoric high probability line, a site clearance letter provided by GEMS and previously submitted for the location (*Site Clearance Letter for Proposed Wellsite MC 651 RW2 Block 607 (OCS-G-34451) Mississippi Canyon Area, Gulf of Mexico; Project No. 0418-2763*) confirmed no archaeological avoidances existing in the project area. Should Chevron 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: Dynamically Positioned Offshore Construction and Support Vessels are being used for the proposed activities; therefore, only an insignificant amount of seafloor will be disturbed. Because physical disturbances to the seafloor will be minimized by the use of Dynamically Positioned Offshore Construction and Support Vessels, Chevron's proposed operations in Mississippi Canyon Block 607 are not likely to cause impacts to 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 activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Chevron'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 archeological sites.

Vicinity of Offshore Location

12. Essential Fish Habitat (EFH)

Potential IPFs to EFH as a result of the proposed operations in Mississippi Canyon Block 607 include physical disturbances to the seafloor and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of Mexico.

Physical disturbances to the seafloor: 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, Dynamically Positioned Offshore Construction and Support Vessels are being used for the proposed activities; 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.

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

There are no other IPFs (including effluents, 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 activities 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 *Brahyramphus 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 activities (refer to **Item 5**, Water Quality). Marine and pelagic birds feeding at the spill location may experience chronic, nonfatal, physiological stress. It is expected that few, if any, coastal and marine birds would actually be affected to that extent. The activities proposed in this plan will be covered by Chevron'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).

Chevron 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. Chevron 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 Chevron management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE. Debris, if any, from these proposed activities will seldom interact with marine and pelagic birds; therefore, the effects will be negligible.

ESA bird species: Seven species found in the GOM 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.

In accordance with NTL No.'s 2008-G04, 2009-G27, and 2009-G31, information has been included in **Section 4** to verify the presence of H₂S.

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 (69 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 Chevron'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 activities. 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).

Chevron 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. Chevron 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 Chevron 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 activities (refer to **Item 5**, Water Quality). Due to the distance from shore (69 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Chevron'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 activities. 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).

Chevron 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. Chevron 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 Chevron 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 cause impacts to shore birds and coastal nesting birds. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Given the distance from shore (69 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Chevron's Regional OSRP (refer to information submitted in **Section 9**).

Discarded trash and debris: Coastal and marine birds are highly susceptible to entanglement in floating, submerged, and beached marine debris: specifically, plastics. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, 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).

Chevron 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. Chevron 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 Chevron 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 activities could cause impacts to coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed activities (refer to Item 5, Water Quality). Due to the distance from shore (69 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Chevron'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).

Chevron 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. Chevron 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 Chevron 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 activities could cause impacts to 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 (93.6 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 Chevron'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).

Chevron 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. Chevron 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 Chevron 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 Mexico 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 Mexico 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 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.

The Rice's whale (née Gulf of Mexico Bryde's whale) is the only commonly occurring baleen whale in the northern Gulf of Mexico and has been sighted off western Florida and in the De Soto

Canyon region. The Rice's whale area is over 41.9 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 Mexico 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 Mexico 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 Mexico Outer Continental Shelf (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, Chevron 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 (124 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 Chevron'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, 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 activities. 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).

Chevron 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. Chevron 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 Chevron 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 Mexico (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 Mexico 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 Mississippi Canyon Block 607 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 Mexico 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 Mexico Outer Continental Shelf (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, Chevron 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 Mexico, 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 activities (refer to **Item 5**, Water Quality). The operations proposed in this plan will be covered by Chevron'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 Mexico, 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 activities. 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).

Chevron 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. Chevron 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 Chevron 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 Mexico. While uncommon in the Gulf of Mexico, 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 Mississippi Canyon Block 607 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 Mexico 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 Mexico Outer Continental Shelf (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, Chevron 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.

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 Mexico. However, due to the distance to the Flower Garden Banks (228.9 miles), the low population dispersed throughout the Gulf of Mexico, 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 activities (refer to **Item 5**, Water Quality). The operations proposed in this plan will be covered by Chevron'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 Mexico, 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 activities. 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).

Chevron 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. Chevron 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 Chevron 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 are large sea turtles that 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 Mexico. 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 Mexico. These areas contain one or a combination of habitat types: nearshore reproductive habitats, winter areas, breeding areas, constricted migratory corridors, and/or *Sargassum* habitats.

There are multiple IPFs that may impact loggerhead sea turtles (see **Item 8**). However, the closest loggerhead critical habitat is located 125.4 miles from Mississippi Canyon Block 607; therefore, no adverse impacts are expected to the critical habitat. 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 in the Gulf of Mexico range from Florida, the Flower Garden Banks National Marine Sanctuary, and into the Caribbean, including Puerto Rico, the U.S. Virgin Islands, and Navassa Island. Four counties in Florida (Palm Beach, Broward, Miami-Dade, and Monroe Counties) were designated as critical habitats for elkhorn (*Acropora palmata*) and staghorn (*Acropora cervicornis*) corals. These coral habitats are located outside of the planning area and are not expected to be impacted by the proposed actions. Elkhorn coral can also be found in the Flower Garden Banks along with three additional coral species, boulder star coral (*Orbicella franksi*), lobed star coral (*Orbicella annularis*), and mountainous star coral (*Orbicella faveolata*). 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 (228.9 miles) and other critical coral habitats, no adverse impacts are expected. The operations proposed

in this plan will be covered by Chevron'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 Mississippi Canyon Block 607 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 GOM 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 GOM, 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 ACTIVITIES

The site-specific environmental conditions have been taken into account for the proposed activities. 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 Mexico is impacted by an average of ten tropical storms (39-73 mph winds), of which six become hurricanes (> 74 mph winds). Due to its location in the Gulf, Mississippi Canyon Block 607 may experience hurricane and tropical storm force winds and related sea currents. These factors can adversely impact the integrity of the operations covered by this plan. A significant storm may present physical hazards to operators and vessels, damage exploration or production equipment, or result in the release of hazardous materials (including hydrocarbons). Additionally, the displacement of equipment may disrupt the local benthic habitat and pose a threat to local species.

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

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

2. Pipeline Installation

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

(E) ALTERNATIVES

No alternatives to the proposed 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.

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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.

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