UNITED STATES GOVERNMENT
MEMORANDUM

March 09, 2026

To: Public Information
From: Plan Coordinator, OLP, Plans Section (GM 235D)

Subject: Public Information copy of plan

Control #	-	Control S-8211
Type	-	Supplemental Development Operations Coordination Document
Lease(s)	-	OCS-G 27278 Block - 519 Mississippi Canyon Area
Operator	-	Talos QN Exploration LLC
Description	-	Subsea Wells U, V and W
Rig Type	-	DP Semisubmersible or Drillship

Attached is a copy of the subject plan.

It has been deemed submitted and is under review for approval.

Nicole Reaux
Plan Coordinator

MC 519
Well(s): SS005
Segment(s): Lease Term Pipeline
OCS-G 27278
SUPPLEMENTAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

December 16, 2025

Bureau of Ocean Energy Management
New Orleans Regional Office
ATTN: Plans Section
1201 Elmwood Park Boulevard
New Orleans, LA 70123

Ladies/Gentlemen:

Talos QN Exploration LLC has reviewed NTLs 2008-G04, BOEM 2015-N01 and other relevant NTLs and FAQs for the activities proposed herein and included in this submittal all pertinent proprietary and public information and documentation in regards to those activities.

The activities noted above are expected to commence on or about November 1, 2026.

All questions and/or correspondence regarding this plan should be submitted to Erin Harold at (713) 907-5910 or via email at eric.berger@talosenergy.com.

Respectfully,

Eric Berger

Eric Beger
Talos QN Exploration LLC

TALOS
QN EXPLORATION LLC

SUPPLEMENTAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

PUBLIC INFORMATION

Lease Number:	**OCS-G 27278**
Area/Block:	**MC 519**
Well(s):	**SS005**
Segment(s):	**Lease Term Pipeline**
Offshore:	**Alabama**
Submitted By:	**Talos QN Exploration LLC (03672)** **333 Clay St., Suite 3300** **Houston, Tx 77002**
Estimated Start-up Date:	**Sunday, November 1, 2026**

MC 519
Well(s): SS005
Segment(s): Lease Term Pipeline
OCS-G 27278

SUPPLEMENTAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

APPENDIX A
PLAN CONTENTS

A) PLAN INFORMATION

Included in the attachments for this appendix is the OCS Plan Information Form BOEM-137, providing information on the activities proposed herein.

Talos proposes the following activities for lease OCS-G 27278 as follows:

The drilling, completion, and production of Well SS005.

B) LOCATION

A map depicting the proposed surface and bottomhole locations is included in the attachments to this appendix of the proprietary information copy of this plan.

A map depicting the proposed surface locations is included in the attachments to the appendix of the public information copy of this plan.

C) SAFETY AND POLLUTION PREVENTION FEATURES

Talos QN Exploration LLC proposes to utilize a drillship or dynamically positioned semi-submersible for the drilling of this prospect. Rig specifications will be included in the Application for Permit to Drill.

We are also requesting permission to have the option of choosing the most appropriate/available drilling unit at the time our Application for Permit to Drill (APD) is filed. We are considering choosing one of the following drilling units; a drillship or dynamically positioned semi-submersible.

Safety features on the drilling unit selected will include pollution prevention, well control, and blowout prevention equipment as described in Title 30 CFR Part 250, Subparts C, D, E, and G; and as further clarified by DOI Notices to Lessees, and current policy making invoked by the DOI, Environmental Protection Agency and the U.S. Coast Guard. A Safety and Environmental Management System that is consistent with Title 30 CFR Part 250 Subparts "O" and "S" will be in effect during the proposed operations. In addition, the Well Control System, consisting of subsea BOP equipment, BOP control system, choke and kill lines, choke manifold, mud-gas separator, circulation system and monitoring (PVT) equipment will be installed and available upon demand when the riser and BOP is attached to the well. The emergency systems consisting of secondary BOP activation equipment, firefighting and abandonment equipment utilized will meet or exceed the regulatory requirements of the DOI and USCG.

Pollution prevention measures will include the installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all contaminants and debris.

The drilling rig and each of the marine vessels servicing the rig and its operations will be equipped with all U.S. Coast Guard required navigational safety aids to alert ships of its presence in all weather conditions.

D) STORAGE TANKS AND/OR PRODUCTION VESSELS

The table below provides the information on oil storage tanks with a capacity of 25 bbls or more. Thank tank capacities are representatives of either DP semi-submersible or drillship.

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
Fuel Oil	Support Vessel	6630	1	6630	30
Fuel Oil	Support Vessel	6630	1	6630	30
Fuel Oil	MODU	9250	4	37000	30
Fuel Oil	Crew Boat	394	1	394	30

E) POLLUTION PREVENTION

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the State of Florida is not an affected State.

F) ADDITIONAL MEASURES

Talos QN Exploration LLC does not propose additional safety, pollution prevention, or early spill detection measures beyond those required by 30 CFR 250.

Talos QN Exploration LLC is a member of HWCG LLC, Clean Gulf Associates, and the National Response Corporation.

G) SERVICE FEE

Included as an attachment to this appendix is a Pay.Gov receipt in the amount of $16,695 to cover the processing fee for the operations proposed in this plan.

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)	Development Operations Coordination Document (DOCD)	X

Company Name: Talos QN Exploration LLC	BOEM Operator Number: 03672
Address:	Contact Person: Eric Berger
333 Clay Street, Suite 3300	Phone Number: (713) 907-5910
Houston, TX 77002	E-Mail Address: eric.berger@talosenergy.com

If a service fee is required under 30 CFR 550.125(a), provide the	Amount paid	$16,695	Receipt No.	

Project and Worst Case Discharge (WCD) Information

Lease(s): G27278	Area: MC	Block(s): 519	Project Name (If Applicable): Marchena

Objective(s)	X	Oil	X	Gas		Sulphur		Salt	Onshore Support Base(s): Fourchon, LA

Platform/Well Name: A	Total Volume of WCD: 631,260 bbls	API Gravity:
Distance to Closest Land (Miles): 64	Volume from uncontrolled blowout: 10,521 BOPD	

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

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

Proposed Activity	Start Date	End Date	No. of Days
Exploration drilling			
Development drilling	11/01/2026	01/31/2027	90
Well completion	02/01/2027	3/18/2027	45
Potential Future Rig Workover Operations	01/01/2028	12/31/2035	75 days per year
Installation or modification of structure			
Installation of production facilities			
Installation of subsea wellheads and/or manifolds			
Installation of lease term pipelines	02/01/2027	02/14/2027	14
Commence production	02/28/2027	01/30/2036	10 years
Other (Specify and attach description)			

Description of Drilling Rig

	Jackup	X	Drillship		Caisson		Tension leg platform
	Gorilla Jackup		Platform rig		Fixed platform		Compliant tower
	Semisubmersible		Submersible		Spar		Guyed tower
X	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 519 #5	MC 519 PLEM	6"	10,000

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

Proposed Well/Structure Location

Well or Structure Name/Number (If renaming well or structure, reference previous name): Well Location U					Previously reviewed under an approved EP or DOCD?		Yes	X	No
Is this an existing well or structure?		Yes		No x	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?						x	Yes		No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 10,521		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 G27278	OCS	OCS OCS
Area Name	MC		
Block No.	519		
Blockline Departures (in feet)	N/S Departure: F N L 3,192.77	N/S Departure: F____ L	N/S Departure: F____ L N/S Departure: F____ L N/S Departure: F____ L
	E/W Departure: F W L 5,606.42	E/W Departure: F____ L	E/W Departure: F____ L E/W Departure: F____ L E/W Departure: F____ L
Lambert X-Y coordinates	X: 1,241,126.42	X:	X: X: X:
	Y: 10,340,327.23	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude 28.48817454° N	Latitude	Latitude Latitude Latitude
	Longitude 88.24337413° W	Longitude	Longitude Longitude Longitude
Water Depth (Feet): 6,519		MD (Feet): / TVD (Feet):	MD (Feet): / TVD (Feet): MD (Feet): / TVD (Feet): MD (Feet): / TVD (Feet):
Anchor Radius (if applicable) in feet:			

Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)

Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	

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

Proposed Well/Structure Location

Well or Structure Name/Number (If renaming well or structure, reference previous name): Well Location V					Previously reviewed under an approved EP or DOCD?		Yes	X	No
Is this an existing well or structure?		Yes		No X	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?						X	Yes		No

WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 10,521	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 G27278	OCS	OCS OCS
Area Name	MC		
Block No.	519		
Blockline Departures (in feet)	N/S Departure: F N L 3,247.5	N/S Departure: F____ L	N/S Departure: F____ L N/S Departure: F____ L N/S Departure: F____ L
	E/W Departure: F W L 7,051.15	E/W Departure: F____ L	E/W Departure: F____ L E/W Departure: F____ L E/W Departure: F____ L
Lambert X-Y coordinates	X: 1,242,571.15	X:	X: X: X:
	Y: 10,340,272.5	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude 28.48806514° N	Latitude	Latitude Latitude Latitude
	Longitude 88.23887441° W	Longitude	Longitude Longitude Longitude
Water Depth (Feet): 6,527		MD (Feet): / TVD (Feet):	MD (Feet): / TVD (Feet): MD (Feet): / TVD (Feet): MD (Feet): / TVD (Feet):
Anchor Radius (if applicable) in feet:			

Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)

Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	

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

Proposed Well/Structure Location

Well or Structure Name/Number (If renaming well or structure, reference previous name): Well Location W					Previously reviewed under an approved EP or DOCD?		Yes	X	No
Is this an existing well or structure?		Yes		No X	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?						X	Yes		No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 10,521		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 G27278	OCS	OCS OCS
Area Name	MC		
Block No.	519		
Blockline Departures (in feet)	N/S Departure: F N L 2,584.37	N/S Departure: F____ L	N/S Departure: F____ L N/S Departure: F____ L N/S Departure: F____ L
	E/W Departure: F W L 6,542.16	E/W Departure: F____ L	E/W Departure: F____ L E/W Departure: F____ L E/W Departure: F____ L
Lambert X-Y coordinates	X: 1,242,062.16	X:	X: X: X:
	Y: 10,340,935.63	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude 28.48987473° N	Latitude	Latitude Latitude Latitude
	Longitude 88.24048040° W	Longitude	Longitude Longitude Longitude

Water Depth (Feet): 6,522	MD (Feet):	TVD (Feet):	MD (Feet): MD (Feet): MD (Feet):	TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:				

Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)

Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	
			X =	Y =	

Eric Berger

From: notification@pay.gov
Sent: Tuesday, December 16, 2025 9:58 AM
To: Eric Berger
Subject: Pay.gov Payment Confirmation: BOEM Development/DOCD Plan - BD

Pay.gov

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

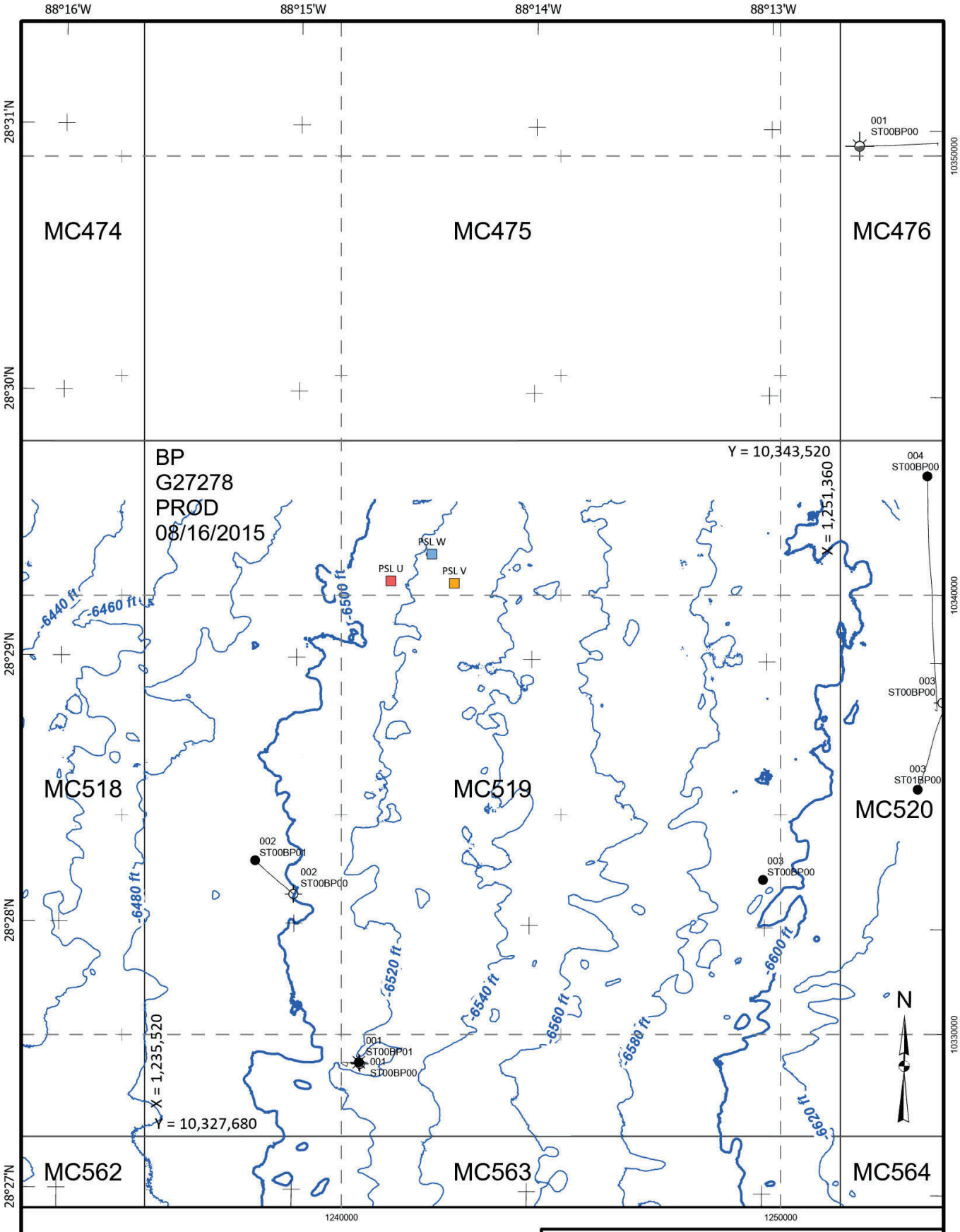
Application Name: BOEM Development/DOCD Plan - BD
Pay.gov Tracking ID: 27TUNLVP
Agency Tracking ID: 77241006701
Transaction Type: Sale
Transaction Date: 12/16/2025 10:57:35 AM EST
Account Holder Name: Mel
Transaction Amount: $16,695.00
Card Type: MasterCard
Card Number: **********5056

Region: Gulf of America
Contact: Eric Berger (713) 907-5910
Company Name/No: Talos QN Exploration LLC, 03672
Lease Number(s): 27278
Area-Block: Mississippi Canyon MC, 519
Type-Wells: Supplemental Plan, 3

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

Appendix A

Appendix A



Spatial Reference
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GCS: GCS North American 1927
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Map Units: Foot US

1,000 0 1,000 2,000 3,000 4,000 Feet

TALOS ENERGY

MC 519 "Marchena" Prospect
Gulf of Mexico

BATHYMETRY MAP

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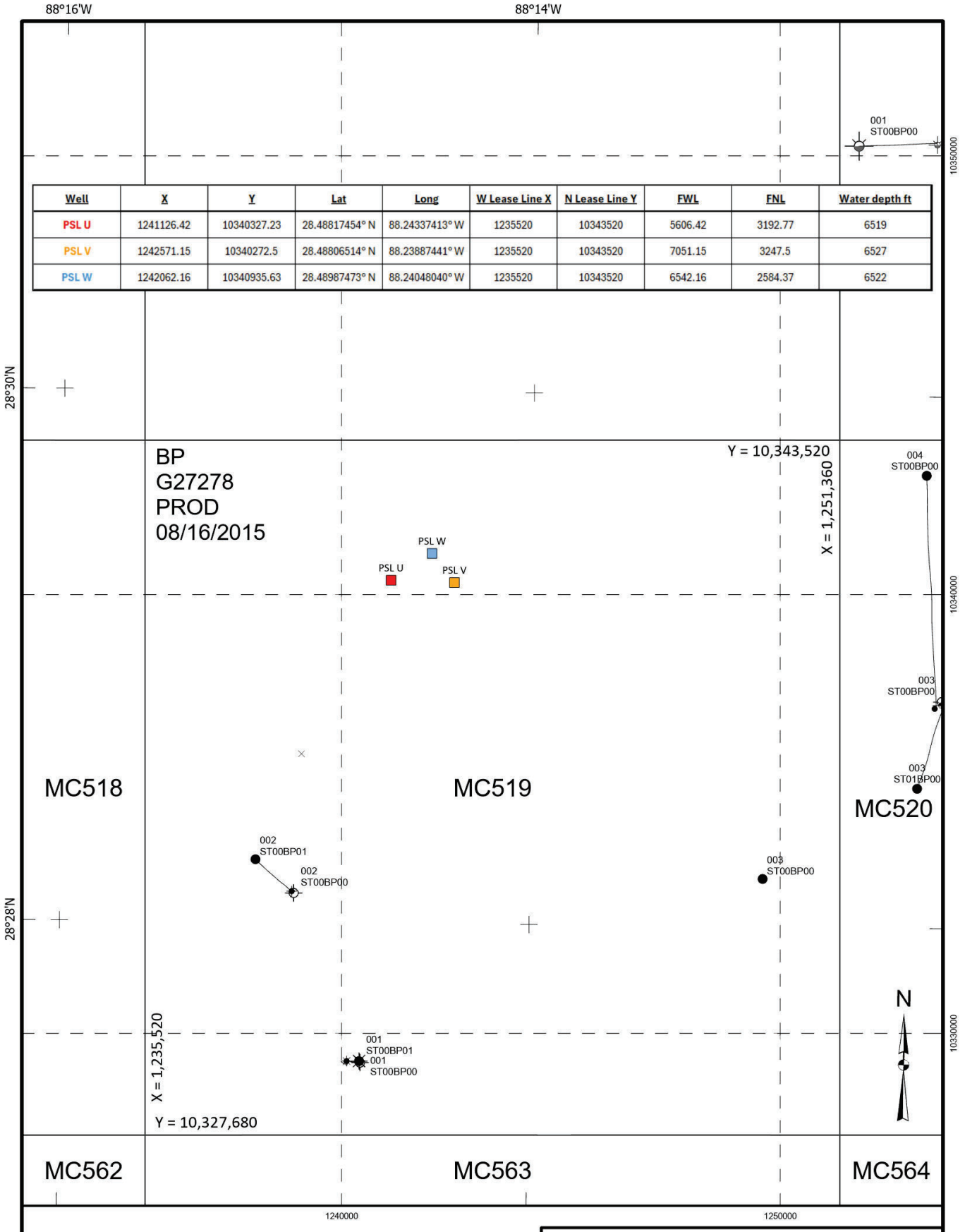

Well	X	Y	Lat	Long	W Lease Line X	N Lease Line Y	FWL	FNL	Water depth ft
PSL U	1241126.42	10340327.23	28.48817454° N	88.24337413° W	1235520	10343520	5606.42	3192.77	6519
PSL V	1242571.15	10340272.5	28.48806514° N	88.23887441° W	1235520	10343520	7051.15	3247.5	6527
PSL W	1242062.16	10340935.63	28.48987473° N	88.24048040° W	1235520	10343520	6542.16	2584.37	6522

Spatial Reference
PCS: NAD 1927 BLM Zone 16N
GCS: GCS North American 1927
Datum: North American 1927
Projection: Transverse Mercator
Central Meridian: -87.0000
Latitude of Origin: 0.0000
Latitude of Center: 0.0000
Longitude of Center: 0.0000
Scale Factor: 0.9996
Map Units: Foot US

1,000 0 1,000 2,000 3,000 4,000 Feet

TALOS ENERGY

MC 519 "Marchena" Prospect
Gulf of Mexico

MC 519 MARCHENA EP PUBLIC PLAT

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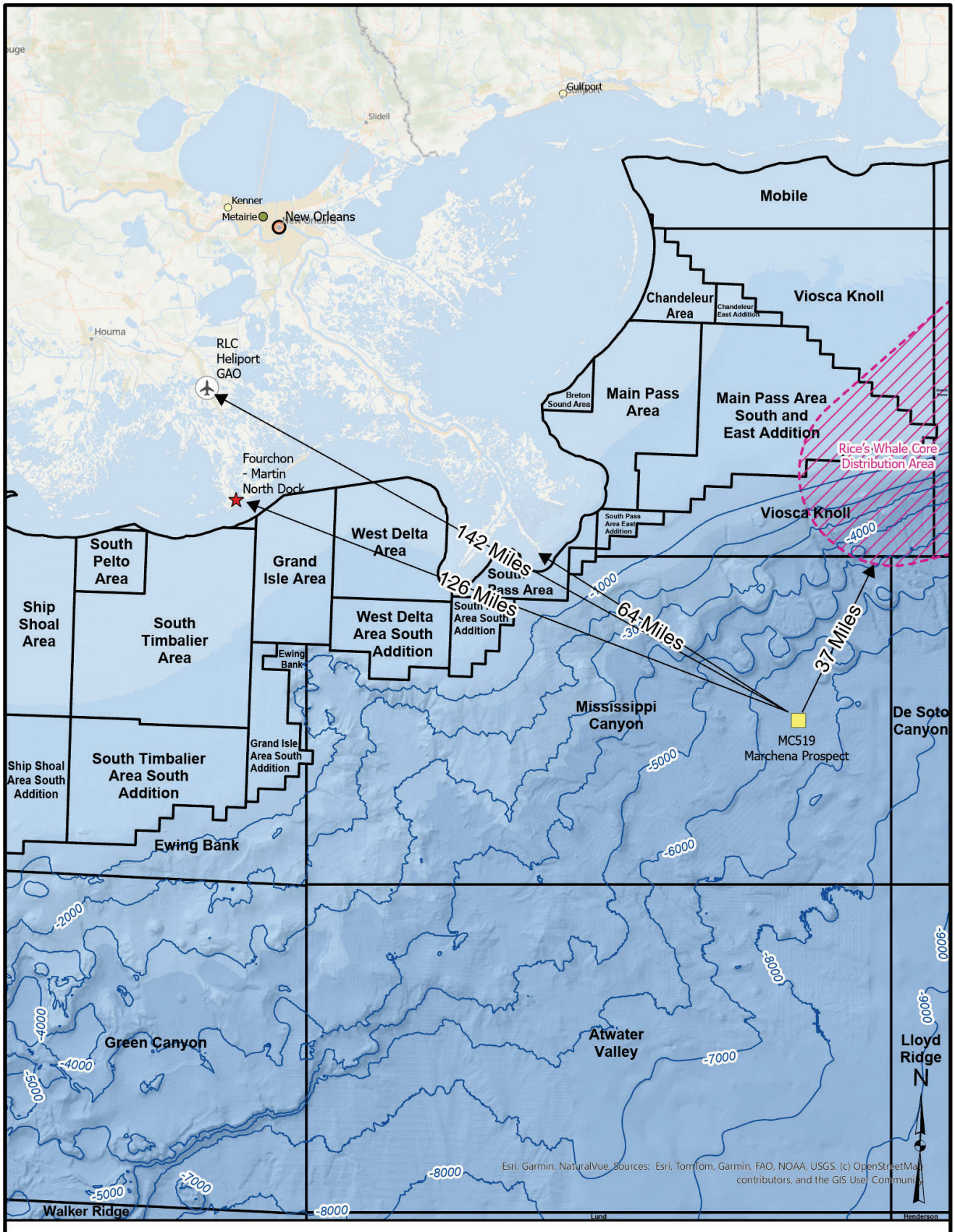
Appendix A



MC519 Marchena Prospect

Talos Shore Base - Fourchon

RLC Heliport GAO, Galiano, LA

NOAA contours - 1000ft

Rice's Whale Core Distribution Area

8 0 8 16 24 32 Miles

Spatial Reference
PCS: NAD 1927 BLM Zone 16N
GCS: GCS North American 1927
Datum: North American 1927
Projection: Transverse Mercator
Central Meridian: -87.0000
Latitude of Origin: 0.0000
Latitude of Center: 0.0000
Longitude of Center: 0.0000
Scale Factor: 0.9996
Map Units: Foot US

TALOS ENERGY

MC 519 "Marchena" Prospect
Gulf of Mexico

VICINITY MAP OF MARCHENA PROSPECT

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Date Saved: 8/13/2025 9:58 AM
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APPENDIX B
GENERAL INFORMATION

A) APPLICATIONS & PERMITS

Listed in the table below are the applications and/or permits that are required to be filed prior to conducting the activities proposed herein:

Application/Permit	Issuing Agency	Status
Application for Permit to Drill (APD)	BSEE New Orleans	Pending
Rig Emergency Evacuation Plan	USCG	Pending
NPDES	EPA	Pending

B) DRILLING FLUIDS

In accordance with BOEM guidance, the required drilling fluid information has been incorporated into the Waste & Discharge tables which are included in the attachment(s) to the Waste & Discharge Information appendix.

Listed in the table below are the drilling fluid and estimated volume to be used per well in the operations proposed herein:

Product Name	Amount to be Used	Reference Number
Synthetic Based (Encore SBM)	10,000	-
Water-based (Seawater, freshwater, barite)	45,000	-

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as no oil-based drilling fluids will be utilized.

A drilling fluids constituents list will be made available upon a request from any federal and/or state agency as deemed necessary to approve this plan.

C) PRODUCTION

PROPRIETARY INFORMATION

D) OIL CHARACTERISTICS

The following charts show the characteristics of the oil that will be produced, handled, transported, or stored at the facility where the subject proposed development and production activities will be conducted.

CHARACTERISTICS	ANALYTICAL METHODOLOGIES SHOULD BE COMPATIBLE WITH
1) Gravity (API) = **23.2**	**ASTM D4052**
2) Flash Point (°C) = **N/A**	**ASTM D93/IP34**
3) Pour Point (°C) = **N/A**	**ASTM D97**
4) Viscosity (Centipose at 25 °C) = **3.43**	**ASTM D445**
5) Wax Content (wt %) = **N/A**	**Precipitate with 2-butanon/dichloromethane (1 to 1 volume) at -10 °C**
6) Asphaltene Content (wt %) = **N/A**	**IP-Method 143/84**
7) Resin Content (wt %) = **N/A**	**Jokuty et al (1996)**
8) Boiling Point distribution including, for each fraction, the percent volume or weight and the boiling point range in degrees °C =	**ASTM D2892 (TBP distillation), or ASTM D2887/5307**
9) Sulphur (wt %) = **N/A**	**ASTM D4294**

Oil from one well
Area / Block = **MC 519**
BSEE Platform ID = **1001**
API Well No. = **60-817-41184-00**
Completion Perforation Interval = **18,582'-18,640'MD**
BOEM Reservoir Name = **PROPRIETARY INFORMATION**
Sample Date = **06/03/2010**
Sample No. (if more than one is taken) =

E) NEW OR UNUSUAL TECHNOLOGY

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as no new or unusual technology as defined in 30 CFR 250.200 will be utilized to carry out the proposed activities. Talos will endeavor to use the best available and safest technologies (BAST), as referred to in 30 CFR 250, provided it is proven for the well conditions anticipated and is reasonably available at the time of well operations.

F) BONDING STATEMENT

The bond requirements for the activities and facilities proposed in this EP are satisfied by a $3,000,000.00 areawide development bond, furnished and maintained according to 30 CFR 556, Subpart I, and NTL No. 2015-N04, "General Financial Assurance." Additional security will be satisfied in accordance with the regulations contained in 30 CFR 556.901(d) and NTL No. 2016-N01, "Requiring Additional Security."

G) OIL SPILL FINANCIAL RESPONSIBILITY

Talos QN Exploration LLC (03672), has demonstrated oil spill financial responsibility (OSFR) for the activities/facilities proposed herein according to 30 CFR Part 553, and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities."

H) DEEPWATER WELL CONTROL STATEMENT

Talos QN Exploration LLC (03672) has the financial capability to drill a relief well and conduct other emergency well control operations.

I) SUSPENSION OF PRODUCTION

In accordance with NTL 2008-G04, this information is not applicable to this Development Operations Coordination Document as no suspensions of production have been approved, or are in the process of being obtained, or anticipated to be sought to hold the subject lease(s) or unit.

J) BLOWOUT SCENARIO

Provided as an attachment at the end of this section is a Worst Case Discharge (WCD) Blowout Scenario for the activities proposed in this Plan.

Drilling Checklist

Tentative Schedule of Proposed Activities	Start Date	End Date	No. of Days
Drilling Well Loc MC 519-U, V, or W	**Jan. 1, 2027**	**Feb 15, 2027**	**45**
Completion Well Loc MC 519-U, V, or W	**Jul. 1, 2028**	**Aug. 1, 2028**	**30**

Storage Tanks and/or Production Vessels: *All facility tanks with a capacity of 25 bbls or more*

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
Fuel Oil (Marine Diesel)	DP MODU	9,250	4	37,000	30°
Fuel Oil (Marine Diesel)	Crew Boat	394	1	394	30°
Fuel Oil (Marine Diesel)	Support Vessel	6,630	1	6,630	30°
Fuel Oil (Marine Diesel)	Support Vessel	6,630	1	6,630	30°

Drilling Fluids –

Using the table below, provide the information on the types (including chemical constituents) and amounts of the drilling fluids you plan to use to drill your proposed wells:

Type of Drilling Fluid	***Estimated Volume of Drilling Fluid to be Used per Well***
Water-based (seawater, freshwater, barite)	45,000 bbls
Oil-based (diesel, minerals, oil)	NA
Synthetic-based (internal olefin, ester)	10,000 bbls

For each oil-based drilling fluid listed in the table above – describe its major components, and provide a Material Safety Data Sheet (MSDS), MSDS number, or Internet address for the MSDS (or equivalent information) for each product:

Product Name	***Amount to be Used***	***Reference Number***

Provide a Blowout Scenario to include the following information: N/A

- Estimated Flow Rate (bbls/day)
- Total Volume
- Maximum duration of potential blowout
- Discussion of the likelihood of the well to bridge over (include backup to support your assumption)
- Discussion of likelihood for Surface intervention to stop blowout

Appendix B

Relief Well
-Rig type capable of drilling relief well at WD and to TD
-Rig package constraints (if none, make statement to that effect)
-Time to acquire rig (days)
-Time to move rig onsite (days)
-Drilling time (days)
Statement whether possibility of using nearby PF was considered.
Other
-Measures to enhance ability to prevent a blowout
-Measures to reduce the likelihood of a blowout
-Measures to enhance the ability to conduct effective and early intervention in the event of a blowout
-Arrangements for drilling relief wells
-Any other measures

Waste and Discharge Information (30 CFR 550.248)
Projected Generated Wastes (a) List of solid and liquid wastes generated, including Type of Waste, Composition of waste, Projected Amount, Plans for Treating, storing, or downhole disposal of wastes ***Projected Ocean Discharges*** (b) For any wastes to be discharged overboard, list Type of Waste Total Amount to be Discharged Discharge rate Discharge method *Please see the attached table to be completed for the above two items.
Transportation of solid & liquid wastes to be disposed of onshore
Using the attached table, please fill in information on the method of transporting solid and liquid wastes to be disposed of onshore

The following exhibits are also required:
Location plat – public and proprietary copies
Vicinity map – to include the distance to the Rice's Whale Area

NTL 2015-N01 Information Requirements

Mississippi Canyon Block 519, OCS-G 27278

Blowout Scenario:
The proposed well has drilled the production hole interval with all potential producible hydrocarbon sands (PPHS) exposed. A blowout occurs. As per NTL 2015-N01, the BOP is not connected to the wellhead and the wellbore is free of drill pipe, logging tools, or other similar equipment resulting in an unrestricted and uncontrolled blowout thru the borehole and wellbore. The blowout scenario assumes the rig has sunk and is displaced from the wellhead. The well is flowing uncontrolled at the mudline. A wellbore schematic with the required data and plats are included in this information package.

Worst Case Discharge: The calculated worst case discharge (WCD) rate for the scenario described above would be when the wellbore is exposed to the K1 and A1 sands in the 12 ¼" hole interval. The calculated WCD would be 10,521 BOPD, 10.5 MMSCFD and 0 BWPD. The WCD is based on nodal analysis using field analog reservoir data.

Maximum duration of the potential blowout: The maximum duration of an uncontrolled blowout depends on the time it takes for either the well to bridge over, shut-in or contain using subsea intervention or relief well intervention. Each scenario is described in the subsequent paragraphs below. The table below summarizes the maximum duration of a potential blowout for each scenario.

Scenario	Blowout Duration	Oil Discharge*
Well Bridges Over	3 to 5 days	31,563 to 52,605 bbls
Subsea Intervention	6 to 16 days	63,126 to 168,336 bbls
Drill Relief Well	60 days	631,260 bbls

*Assumes no declining oil production, based on WCD of 10,521 BOPD.

Potential of well to bridge over: Failure of the borehole in a blowout scenario is influenced by several factors including in-situ stress, rock strength, and fluid velocities at the sand face. Blowout simulations confirm that, due to the typically large induced drawdown pressures at the sand face, wellbore pressure gradients in an open hole blowout invariably falls below the collapse gradient of the open formations. The high fluid velocities in an unrestricted scenario will likely cause the borehole to collapse and bridge over in a few days, significantly reducing flow rate out of the wellbore.

The Intra-Wellbore Flow across the K1 and A1 sands in the MC 519 well is expected to be abnormally pressured, unconsolidated and friable, therefore making "bridging" likely in a blowout event. The highest estimated bottom hole pressure of the sands is approximately 7,000 psi. The wellbore is planned to be at 29° inclination through the objective sand interval. The primary recovery energy source in the objective reservoir is water drive and requires sand control to prevent the reservoir from "sanding up".

Subsea Control and Containment: Talos QN Exploration LLC (Talos), as a member of HWCG Holdings LLC (HWCG), will have access to a fully integrated subsea well control and containment system that can be rapidly deployed. The equipment is designed, constructed, tested and maintained in a state of continuous readiness for rapid response.

In the event of a blowout Talos would immediately mobilize HWCG's vessels and equipment to shut-in and contain the well or flow and capture the fluids. Equipment and services required for the response beyond those provided through HWCG will be contracted directly by Talos as specified in the current and approved Regional Containment Demonstration (RCD). Talos has Master Service Contracts with equipment and service companies to respond to a blowout as described in the RCD.

Additionally, and as a member of HWCG, Talos will draw on HWCG's Mutual Aid of human resources available with the HWCG membership to support a response to a deepwater blowout. Access to this resource is provided by the Mutual Aid Agreement between the HWCG members.

HWCG response equipment resources include capping stack, "top hat", transfer hoses, tanker, IRS, ROV to remotely close the blind shear rams, vessels to begin subsea dispersant operations, and vessels to initiate debris removal / salvage operations. The Helix Q-4000 or equivalent vessel would also be immediately mobilized to assist in the response.

In the event the blind shear rams cannot be remotely closed with the ROV, the LMRP will be removed from the BOP. The HWCG 13-5/8" 15K capping stack will be deployed by the Q-4000 or other suitable vessel and installed on the BOP. The blind rams in the capping stack would then be closed to contain the well.

A top kill operation would then be initiated to kill and control the well. The proposed well design will be able to withstand the anticipated shut-in pressure at the BOP, as well as additional pressure exerted on the casing during the top kill operation. In addition, Talos would employ the expertise of Wild Well Control, Inc. to assist with all intervention options.

The estimated duration for subsea intervention requiring the deployment of the capping stack is 6 to 8 days. This case assumes the HWCG vessels and equipment will be utilized to shut-in and contain the well. In the event it is necessary to "flow and capture" the fluids, an additional 7 to 8 days is estimated. Therefore, subsea intervention time would take 6 to 16 days. Talos is a member of Clean Gulf Associates, MSRC and HWCG.

Talos has Master Service Contracts in place with Cudd Pressure Control, Superior Energy (Wild Well Control) and Halliburton (Boots & Coots), which are diversified well control services companies offering full general contracting services with strong engineering component resources.

Relief well: In the event of an uncontrolled blowout, relief well planning, and rig availability inquiries would commence immediately. The SHL of the MC 519 wells U, V, or W are in ~6,500 ft WD and are free of pipelines or other obstructions. The seafloor is free of any obstructions within 500 ft of the proposed well centers. There are currently 14 rigs in the USGOM which are "active" and capable of drilling a relief

well with an open water location in ~6,500 ft water depth in MC 519. Talos has alliances with diversified engineering consulting firms which would provide Talos relief well operations, engineering, logistical, materials management, QA/QC and well-site supervision support. Mutual Aid Agreement is in place with several USGOM operators to secure a drill ship and/or dynamically positioned semi-submersible drilling rig to drill the relief well.

There are no known rig package constraints for a relief well. All 4th , 5th and 6th generation rigs in the USGOM would be suitable to drill a relief well. Therefore, the rig choice would be first available, quickest to mobilize and move into position offsetting the blow out well. A relief well would be drilled from an open water location about 1500' from the blowout well. The final rig location will be influenced by operator, contractor, BSEE and depth of intersect to ensure safety of all personnel and equipment involved in the relief well effort. Potential relief well locations clear of shallow hazards have been identified for each of the well from the shallow hazard study.

There are no suitable platforms in the area which would provide an advantage for drilling the relief well. A relief well could not be drilled from an onshore location.

The estimated time to drill a relief is summarized in the table below:

Description	Planned Days	Cumulative Days
Site Assessment	3	3
Contract/ Mobilize Rig to Location	20	23
Jet-in 36"	2	25
Drill & Set 22" surface casing	5	30
Certify BOPE / Run and test BOP stack	10	40
Drill & Set 13 ⅝" Casing	6	46
Drill and range to intercept the HC interval	8	54
R/U pumping equipment and kill well	6	60

Proposed measures to enhance the ability to prevent a blowout and reduce the likelihood of a blowout:

Preventing a blowout starts with preventing a well control incident or "kick". In order to prevent a "kick", a thorough understanding of the geology, reservoir characteristics and field/area production history is needed. Key offset wells are identified, and drilling records of these wells are studied in great detail and used in well planning. Specifically, this information is used for lithology correlation, abnormal pressure formation prediction, mud weight schedule, casing design, and other potential geological risk identification such as depleted or weak zones, ballooning formations, sloughing shale, gumbo and hole instability. This research reduces the risk of a well control incident.

Hydrostatic control of the well will be maintained by utilizing a drilling fluid (mud) which exerts sufficient hydrostatic pressure to prevent the unintended flow of wellbore fluids or "kick" during drilling operations. All Drilling Fluid Requirements per 30 CFR 250 Subpart D 250.455 thru 250.458 will be implemented while drilling the well.

The MC 519 Well "U, V or W" will be drilled using mud weights as per the well plan's mud weight schedule. Mud weight adjustments will be made based on observed drilling parameters including rate of penetration, cuttings quantity and appearance, chloride contamination and gas monitoring. In the event drilling parameters indicate a potential for a "kick", the drilling operations will cease, and a flow check will be performed. Penetration rate will be controlled while drilling thru any hydrocarbon sand. Two mud engineers will work 12 hr shifts providing 24 hr mud engineering support during drilling operations. Two "shaker" men working 12 hr shifts continuously monitor mud weight and returns at the shakers. Electronic PVT equipment will be utilized throughout all drilling operations.

Mud properties including viscosity and gel strengths will be adequately maintained to reduce the possibility of swab and surge during tripping operations. Displacement volumes will be monitored and recorded during all tripping operations. A heavy slug will be pumped when possible before trips so that the pipe can be pulled dry, and the hole more accurately monitored. As a minimum, a volume equal to the annular volume will be circulated before pulling out of the hole. Pipe trip speeds will also be adjusted as such not to cause swab or surge pressures.

Adequate mud and chemicals will be kept on board the rig to ensure well control at all times. Sea water or synthetic base oil will be available and ready to be pumped down hole if a high volume of loss circulation zone is encountered. This will enable immediate stabilization of the well until additional mud can be mixed. If lost circulation occurs and well conditions allow, pipe may be pulled up into the casing shoe.

Short trips and wiper trips will be performed as the hole conditions dictate or periodically during prolonged drilling intervals to monitor and assess any change in hole conditions. These trips also help reduce the risk of swab and surge related problems.

Gas-detecting equipment will monitor all drilling fluid returns. Mudlogging services will commence upon the BOP and riser installation and will be used to monitor wellbore conditions. Mudlogging service will include monitoring mud weights (in and out), drill gas, background gas, connection gas, trip gas, bottoms up gas and lithology description. This information will be used to assess any relative changes in hole conditions and aid in making mud weight adjustments.

LWD (GR/Res)/MWD services will be utilized to provide real-time directional surveying well, formation evaluation, reservoir fluid type, and formation pressures including abnormal pressure detection. LWD will enable the drilling team with real-time identification of unexpected and potential drilling hazards.

All efforts will be made to avoid a loss returns event. This includes but not limited to identification of depleted zones and faults, high quality casing seats, controlled penetration rates, controlling trip in hole speeds, staging up pumps, cement placement models, controlling casing surge pressures and solids control.

Cement programs will be designed to prevent gas influx during cement setting. All casing strings will be centralized across hydrocarbon bearing zones. Prior to cementing casing, the annulus will be circulated clean as long as mud returns are maintained. After cementing casing, the annulus will be monitored while the cement sets.

Diverter and BOP System Requirements as per 30 CFR 250 Subpart D 250.430 thru 250.451 will be in effect while drilling the well. BOP equipment will be installed and tested while conducting operations below surface casing. All BOPE will be tested every 14 or 21 days, as approved by BSEE. Annular and ram BOP's will be function tested every 7 days between pressure tests. BOP's will include at least two set of blind/shear rams capable of shearing the drill pipe under MASP conditions.

A minimum of two (2) offshore supervisors will be on the rig at all times to ensure 24-hour supervision of all drilling activities on the well location. These onsite supervisors will witness and review all BOP tests, casing tests and formation integrity tests. Formation integrity tests must be approved by the Talos drilling superintendent, manager or project drilling engineer prior to drilling ahead.

Talos conducts rig safety and well control system audits on every rig contracted. Each rig crew practices well control drills daily. These well control drills include pit drill, kick drill and trip drill. Each drill will emphasize "kick" recognition, confirmation, shut-in procedures and personnel assignments.

Additional measures to enhance Talos ability to prevent and reduce the likelihood of a blowout are:

Management and Direct Supervision Processes:

- Act in accordance with the latest version 2016 WCR
- Drilling Supervisors, Completion Supervisors, MODU OIM's, Drillers, and Tool Pushers, (including all personnel that may be acting in these capacities) must hold a valid well control certificate from an accredited IWCF or WellCAP organization.
- Compliance with all federal rules and regulations: CFRs, NTLs, and Final Rules
- Pursuant to wellbore cementing and zonal isolation techniques, all cementing operations will be modeled and designed under the guidelines set forth in API RP 65 Part I & II.
- RP 53 for Blowout Prevention Equipment Systems for Drilling Wells and RP 16Q for Marine Drilling Risers will be used for installation, testing and maintenance of the surface and subsea marine risers and BOP systems.
- Utilization of Talos management systems: SEMS and MOC.
- Adherence to Contractors Safety Management Systems.
- Ensure proper physical barriers are in place to prevent uncontrolled flow.
- Professionally certified and peer reviewed well design (casing and cementing).
- Contractor engagement meeting to gain alignment on well plan.
- Specific procedures to execute well plan.

Well and rig equipment:

- Compliance in accordance with the latest version 2016 WCR.
- All rigs will meet all applicable rules and regulations per 30 CFR 250 and 550, as well as all Notice to Leases.
- Certified BOP equipment that is fit for purpose.
- Utilize rig and equipment that is fit for purpose.
- The working pressure and temperature rating of the BOPE and wellhead will exceed the maximum anticipated pressure and temperature.
- Accumulator controls will always be left in the power position (i.e., opened/closed; not neutral).
- Rams installed & tested to fit all sizes of drill pipe, casing, and tubing in use.
- A pressure tested fully opening safety valve (FOSV) and opening/closing wrench with appropriate threads or crossover subs for all connections will be available on the rig floor at all times.
- A drill string float valve (ported acceptable) will be installed in all drilling bottom hole assemblies (BHA's). Similar valves will be considered for well intervention and completion operations when reverse circulating is not required.
- MWD/LWD/PWD tools will be used accordingly to obtain real-time data on subsurface zones.
- Circulating trip tanks are required for all drilling operations.
- PVT and gas detection equipment will be employed for all hole sections.

Drilling Practices:

- Volume measurements relative to the well will be monitored at all times.
- All critical pressure test charts (i.e., negative tests, casing tests, FIT/LOT) will be reviewed by Drilling Engineer/Drilling Supervisor prior to continuing with operations.
- During drilling operations, slow circulating rates (SCR) will be taken and recorded for each mud pump at least after BHA or mud weight changes and 500 feet of formation drilled, after the installation of BOP and riser.
- Flow checks shall be conducted after drilling breaks, prior to tripping, after or during lost circulation events, pumping out, prior to unlatching BOP's, and any other time when anomalous pit volume readings are observed. Minimum flow check duration shall be 5 minutes.
- Drilling BOP space-out and tool joint space-out diagrams shall be posted on the rig floor at all times.
- Kill sheets will be updated during each tour and posted on the rig floor.
- PVT and gas detection equipment will be employed for all hole sections.

Effective and early blowout intervention:

In the event of a blowout, the Talos OSRP will be activated. The first priority will be to quickly organize a focused team of operational and technical professionals including a blowout specialty company (BSC). The BSC will be immediately mobilized to the blowout site. The BSC will analyze the blowout situation and devise an intervention strategy. Site assessment will be used to assist in determining the relief well location options so that planning can be initiated. A suitable rig for a relief well will be sourced and preparations made for the suspension of current activities in order to mobilize to relief well site.

APPENDIX C
GEOLOGICAL & GEOPHYSICAL INFORMATION

A) GEOLOGICAL DESCRIPTION
PROPRIETARY INFORMATION

B) STRUCTURE CONTOUR MAPS
PROPRIETARY INFORMATION

C) INTERPRETED 2D/3D SEISMIC CROSS SECTIONS
PROPRIETARY INFORMATION

D) GEOLOGICAL STRUCTURE CROSS SECTIONS
PROPRIETARY INFORMATION

E) SHALLOW HAZARDS REPORT
An Archaeological and Hazard Survey was previously submitted and approved under Plan Conrol No. N-9122.

F) SHALLOW HAZARDS ASSESSMENT
A Shallow Hazards Assessment for the proposed well(s) is included in the attachments to this appendix.

G) HIGH RESOLUTION SEISMIC LINES
High Resolution Seismic Lines were included in the previously submitted and approved Archaeological and Hazards Survey (Plan Control No. N-9122).

H) STRATIGRAPHIC COLUMN
PROPRIETARY INFORMATION

I) TIME VS DEPTH TABLES
In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as well control is available in the plan area.

J) GEOCHEMICAL INFORMATION
In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the subject area is within the boundaries of the Gulf of Mexico.

K) FUTURE G&G ACTIVITIES
In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the subject area is within the boundaries of the Gulf of Mexico.

BERGER GEOSCIENCES, LLC.
13100 NORTHWEST FWY, STE 600
HOUSTON, TEXAS 77040
PHONE: 713-341-0397
FAX: 713-341-0398

23 September 2025

Mr. Barron Bullock
Talos Energy Inc.
333 Clay St. #3282
Houston, TX 77002

RE: Wellsite Clearance Letter for Proposed Wells MC 519-U, MC 519-V, and MC 519-W, Mississippi Canyon Area, Block 519 (Lease No. G27278), Gulf of America

Dear Mr. Bullock

Berger Geosciences, LLC. (Berger) is pleased to provide Talos Energy Inc. (Talos), with the following Wellsite Clearance Letter for Proposed Wells MC 519-U, MC 519-V, and MC 519-W with surface locations in Mississippi Canyon (MC) Area, Block 519 (Lease No. G27278) within the Gulf of America. The letter describes the seafloor, shallow geologic conditions, shallow hazards, and benthic community potential at the proposed locations. This letter is a supplement to the existing Exploration Plan for Talos to include the Proposed Wells MC 519-U, MC 519-V and MC 519-W. This report includes wellsite clearance letters and updated maps and figures featuring the proposed well locations.

This letter, in conjunction with the Shallow Hazards Assessments entitled, "*Shallow Hazards Assessment, Benthic Communities Evaluation, and Archaeological Assessment Review, Mississippi Canyon Area, Blocks 519 (Lease No. G27278) and 563 (Lease No. 21176), Gulf of Mexico"*, prepared by Berger and submitted to Fieldwood on 21 November 2018 is intended to satisfy requirements set forth by the Notice-to-Lessees (NTL) No. 2022-G01 (Shallow Hazards Program), the shallow hazards portion of NTL No. 2008-G04 (Information Requirements for EPs and DOCDs), and NTL No. 2009-G40 (Deepwater Benthic Communities). The Bureau of Ocean Energy Management NTL No. 2015-N02 provides indefinite extension to MMS NTL 2008-G04.

The block of interest is located within an area of high archaeological potential as described in NTL Nos. JOINT 2011-G01, 2005-G07 (Archaeological Resource Surveys and Reports), and supplemental guidelines. An archaeological survey and report for block MC 519 were submitted under separate cover to Nobel Energy, Inc.by C&C Technologies. (C&C, 2006).

We appreciate the opportunity to be of service to Talos on this project and look forward to working with you in the future. Please contact us if you have any questions or need further information.

Sincerely,

Thien T. Nguyen
Marine Geoscientist

Zachary I. Metz
Manager, Survey Services

William J. Berger III, P.G.
President and CEO

Distribution: 1 digital and 1 paper copy

Appendix C

BERGER GEOSCIENCES, LLC.
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Wellsite Clearance Letter

Proposed Wells MC 519-U, MC 519-V, and MC 519-W

Mississippi Canyon Area Block 519 (Lease No. G27278) Gulf of America

Berger Geosciences Project No. 25-08-29

Prepared for:

Talos Energy Inc.
333 Clay St. #3282
Houston, TX 77002

September 2025

Appendix C

Table of Contents

List of Figures

Appendix C

List of Maps (1:12,000)

List of Tables

List of Appendix Maps (1:24,000)

Appendix C

Introduction

Talos Energy Inc. (Talos) contracted Berger Geosciences, LLC. (Berger) to provide this letter to assess the shallow hazards and benthic communities potential for Proposed Wells MC 519-U, MC 519-V, and MC 519-W with surface locations in the northwest quadrant of Block 519 in the Mississippi Canyon (MC) Area (Lease No. G27278). All geologic interpretations presented in this report are based on the shallow hazards assessment entitled:

- *Shallow Hazards Assessment, Benthic Communities Evaluation, and Archaeological Assessment Review, Mississippi Canyon Area, Blocks 519 (Lease No. G27278) and 563 (Lease No. 21176), Gulf of Mexico*, prepared by Berger and submitted to Fieldwood on November 21, 2018.

- *Addendum Report: Extended Shallow Hazards Assessment and Wellsite Clearance Letters, Proposed Wells MC 519-N, -R, -S, and -T Mississippi Canyon Blocks 519 (Lease No. G27278) and 563 (Lease No. G21176)*, prepared by Berger and submitted to Fieldwood on January 25, 2019.

This letter is to supplement the previous shallow hazards reports (Berger, 2018 and Berger, 2019) and is intended to comply with Notice-to-Lessees (NTL) No. 2022-G01 (Shallow Hazards Program), the shallow hazards portion of NTL No. 2008-G04 (Information Requirements for EPs and DOCDs), and NTL No. 2009-G40 (Deepwater Benthic Communities). The Bureau of Ocean Energy Management NTL No. 2015-N02 provides indefinite extension to MMS NTL 2008-G04.

Mississippi Canyon Block 519 is located within an area of high archaeological potential as described in NTL No. 2011 JOINT-G01 (BOEM/BSEE, 2011), NTL No. 2005-G07 (Archaeological Resource Surveys and Reports; MMS, 2005), and supplemental NTLs. For avoidances and sonar contacts, please refer to the C&C Technologies (C&C) Archaeological Assessment (C&C, 2006).

Twelve maps and ten figures were generated for the proposed wellsites. The maps are a subset of the larger previous Shallow Hazards Report and show the conditions near the proposed well locations (Maps W-1 thru W-12). The figures show the conditions specific to the wellsite location (Figures W-1 thru W-10). All the maps and figures provided are intended to be reviewed in conjunction with the Shallow Hazards Assessment, Benthic Communities Evaluation, and Archaeological Assessment Review (Berger, 2018) report and the Addendum Report (Berger, 2019), as listed above.

Appendix C

Wellsite Discussion

This section contains an assessment of the shallow hazards and tophole prognoses for Proposed Wells MC 519-U, MC 519-V, and MC 519-W located within Mississippi Canyon Area, Block 519, Gulf of America.

The seafloor and benthic community assessments consider surface conditions within a 2,000-ft muds and cuttings discharge radius from the proposed well locations. The wellsite assessments for the proposed locations consider the subsurface conditions within a 500-ft radius of a presumed vertical wellbore from the seafloor to 1.60 seconds two-way travel time below the mudline (BML) or approximately 5,000 ft BML. For avoidances and sonar contacts, please refer to the C&C Archaeological Assessment (C&C, 2006).

Maximum Anchor Radius Criteria

Talos anticipates using a dynamically positioned Mobile Offshore Drilling Unit (MODU) in the seafloor assessment area; therefore, no anchor pattern has been analyzed.

Tophole Prognosis Criteria

The following sections specify the criteria used to develop the tophole prognoses for the proposed wells. The assessment is based on 3-D seismic data and comparison to regional stratigraphic units as available. Each tophole assessment is restricted to the specific proposed well location.

Gas Hydrates. The base of the gas hydrate stability zone (BGHSZ) is calculated based on Maekawa et al. (1995) or an identifiable bottom-simulating reflector. The potential for solid gas hydrates was evaluated for the proposed wells. The criteria include:

- Is water depth conducive for gas hydrate formation?
- What is the depth to the base of the gas hydrate stability zone (BGHSZ) at the proposed well?
- Is a bottom-simulating reflector (BSR) present between the seafloor and BGHSZ?
- Is a BSR present within 500 ft of the proposed well?
- Does the proposed well intersect a BSR?
- Have gas hydrates been identified in the region of the proposed well?

HIGH	The wellsite conditions meet ALL of the above stated criteria, and correlates to an existing well that encountered gas hydrates.
MODERATE	The wellsite conditions meet SEVERAL of the above stated criteria. There is no direct evidence of gas hydrates at nearby wells.
LOW	The wellsite conditions meet SOME of the above stated criteria, and does not correlate to nearby wells.
NEGLIGIBLE	The wellsite conditions meet FEW to NONE of the above stated criteria, and there is no evidence of gas hydrates at nearby wells.

Appendix C

Shallow Gas. The potential for shallow gas was evaluated for the proposed wells. The criteria used to evaluate each proposed well include:

- Does an anomalous amplitude event exist in proximity of the proposed well, and is there evidence for connectivity to the proposed wellbore?
- Is there supporting geophysical evidence for shallow gas associated with the anomalous amplitude?
- Is the anomalous amplitude within a sequence that may be sand-prone?
- Is there evidence of migration of fluid (including hydrocarbons) from depth, such as along a fault plane?
- Does the sequence correlate to other wells within the area that encountered shallow gas?
- Is the proposed well located in a frontier area with little or no offset well control?

HIGH	The amplitude event meets ALL of the above stated criteria, or correlates to an existing well that encountered shallow gas.
MODERATE	The amplitude event meets SEVERAL of the above stated criteria. There is no direct evidence of shallow gas from nearby wells.
LOW	The amplitude event meets SOME of the above stated criteria, and does not correlate to nearby wells.
NEGLIGIBLE	The amplitude event meets FEW to NONE of the above stated criteria, and there is no evidence of shallow gas from nearby wells.

Shallow Water Flow. The potential for shallow water flow (SWF) was assessed for the proposed wells. The potential for SWF is based on the following criteria:

- Does the stratigraphic unit correlate to a regional sand-prone sequence?
- Is the area subject to high sedimentation rates and rapid overburden deposition?
- Is the sequence composed of high-amplitude, chaotic reflectors indicative of sand?
- Is there a potential seal (perhaps clay-prone) above the sand-prone sequence?
- Does the sequence correlate to other wells within the area that encountered SWF?
- Is the proposed well located in a frontier area with little or no offset well control?

HIGH	The stratigraphic unit meets ALL of the above stated criteria, and correlates to an existing well that encountered SWF.
MODERATE	The stratigraphic unit meets SEVERAL of the above stated criteria. There is no direct evidence of SWF from nearby wells.
LOW	The stratigraphic unit meets SOME of the above stated criteria, and does not correlate to nearby wells
NEGLIGIBLE	The stratigraphic unit meets FEW to NONE of the above stated criteria, and there is no evidence of SWF from nearby wells.

Appendix C

Proposed Well MC 519-U

The water depth at Proposed Well MC 519-U is 6,519 ft below sea level (BSL; Map W-1). The proposed well is within an area of relatively smooth seafloor that slopes to the southeast at 0.9°. The proposed location provided by Talos is as follows:

Table W-1. Location, block calls, and seismic lines for Proposed Well MC 519-U

NAD27 UTM Zone 16 North, US Survey ft		Geographic Coordinates	
X	**Y**	**Latitude**	**Longitude**
1,241,126.42	10,340,327.23	28°29'17.4283"N	88°14'36.1468"W
Block Calls		**3-D Seismic Line Reference**	
		Line	**Trace**
5,606.42’ FWL	3,192.77’ FNL	11627	11914

Twinned Location

Proposed Well MC 519-Alt-U is 50 ft east of the Proposed Well MC 519-U, and conditions are approximately equivalent, no separate illustrations of the subsurface conditions were prepared. The proposed alternate drilling location is as follows:

Table W-2. Location and block calls for Proposed Well MC 519-Alt-U

NAD27 UTM Zone 16 North, US Survey ft		Geographic Coordinates	
X	**Y**	**Latitude**	**Longitude**
1,241,176.42	10,340,327.23	28°29'17.4334"N	88°14'36.5864"W
Block Calls			
5,656.42 FWL	3,192.77 FNL		

Appendix C

Power Spectrum Analysis

The power spectrum for the proposed well was derived using IHS Kingdom Suite's Trace Calculator tools. For Proposed Well MC 519-U, the power spectrum was extracted from a subset that ranges from Inline 11577 to 11677 and Crossline 11864 to 11964 and is limited to one second below the seafloor. The frequency content within the upper one second below the seafloor is of sufficient quality for shallow hazards analysis.

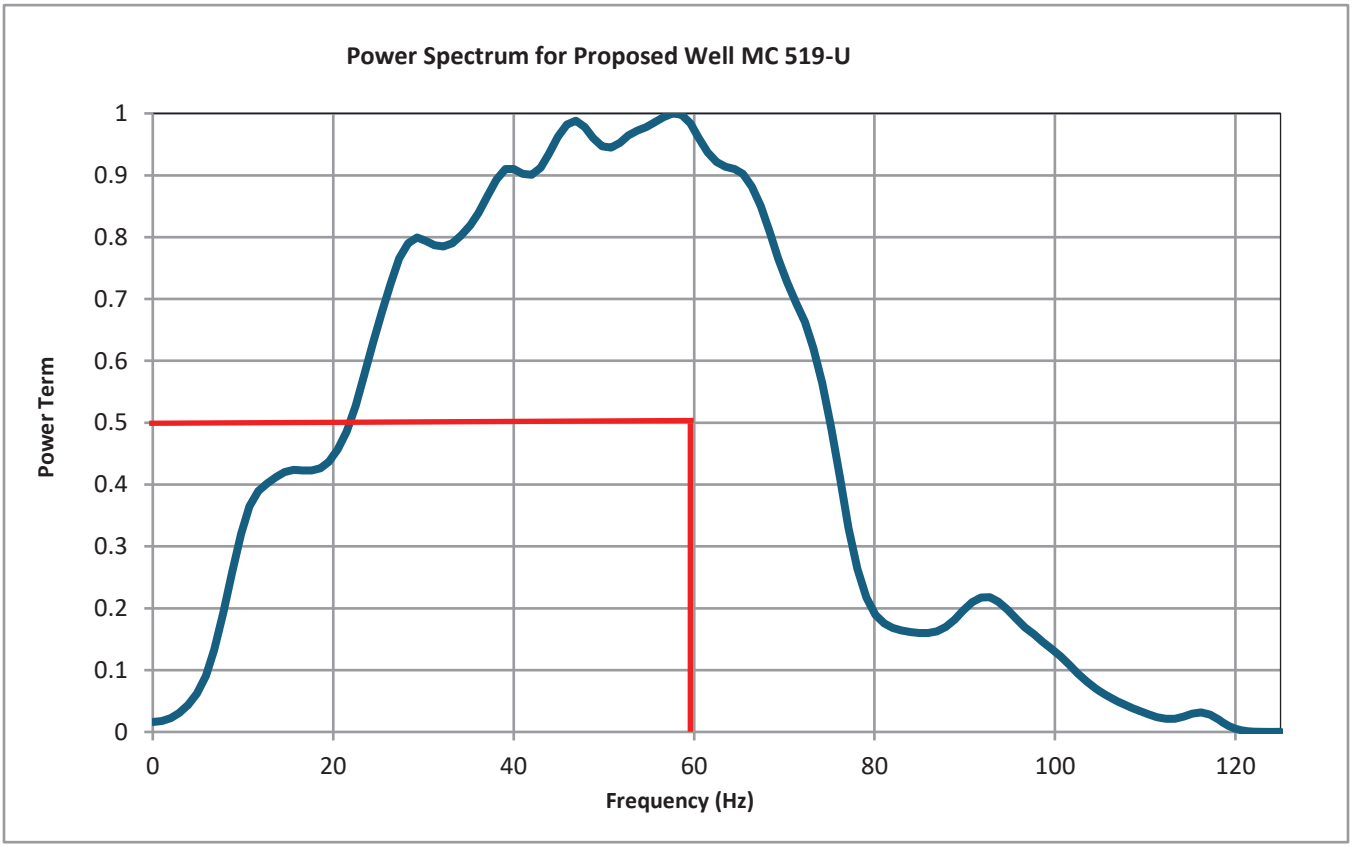

Figure W-2. Power spectrum at Proposed Well MC 519-U

Appendix C

Seafloor Conditions

The following paragraphs summarize the seafloor morphology, benthic communities potential, and archaeological potential at the proposed well location.

Seafloor Morphology. Proposed Well MC 519-U is located in the northwestern portion of MC 519 (Figure W-1). The water depths at the proposed well is 6,519 ft BSL and in the vicinity ranges from 6,426 ft to 6,581 ft BSL (Map W-1). The seafloor near the proposed well is hummocky and gently dipping 0.90° to the southeast (Map W-2). No seafloor faults or other seafloor features are within the 2,000-ft muds and cuttings radius for the proposed wellsite (Map W-1, Figure W-3 and Figure W-4).

There are no seafloor faults within 2,000 ft of Proposed Well MC 519-U.

Benthic Communities Assessment. There are no water bottom anomalies identified by the BOEM (2025b) within 2,000 ft of the proposed well location. There are no high-amplitude seafloor anomalies identified in the 3-D seismic data within 2,000 ft of the proposed well location (Map W-3 and Map W-4). Features or areas that could support high-density benthic communities are not anticipated within 2,000 ft of the proposed location.

Features or areas that could support high-density chemosynthetic or other benthic communities are not anticipated within 2,000 ft of Proposed Well MC 519-U.

Infrastructure. There are four existing wells within MC 519. The nearest existing well G14641-001 is 4,460 ft southwest proposed well MC 519-U location (Figure W-1). There are seven oil pipelines, seven umbilicals and one gas pipeline within MC 519. The nearest of these is a BP gas pipeline with segment number 13786. This gas pipeline trends northwest to southeast and passes 1,050 ft west of the proposed well location as shown on Maps W-1 through W-4 (BOEM, 2025a).

Existing gas pipeline with segment number 13786 passes 1,050 ft west of Proposed Well MC 519-U.

Archaeological Assessment. All blocks in the Mississippi Canyon Protraction Area are regarded as being in a high probability zone for historic shipwrecks based on Bureau of Ocean Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE) NTL No. 2011-JOINT-G01 (BOEM/BSEE, 2011), including MC 519. Pursuant to the public information in the NOAA Automated Wreck and Obstruction Information System and Navigational Charts (NOAA, 2021); there are no reported shipwrecks within the seafloor assessment area. The required archaeological survey and report was completed by C&C Technologies and were submitted under separate cover (C&C, 2006). There are no archaeologically significant contacts identified within 2,000 ft of Proposed Well MC 519-U. For avoidances and sonar contacts please refer to the C&C Archaeological Assessment.

No archaeologically significant contacts identified within 2,000 ft of Proposed Well MC 519-U.

Appendix C

Wellsite Assessment

The wellsite assessment covers the subsurface conditions within a 500 ft radius of the proposed wellpath from the seafloor to the investigation limit of 5,000 ft BML.

Stratigraphy and Tophole Prognosis. Nine 3-D seismic marker horizons (Horizons A, B, C, D, E, F, G, H, and I) were interpreted at the Proposed Well MC 519-U (Figure W-4). A generalized description of the stratigraphic sequences can be found in Section 1.4 of the previous Berger (2018) Shallow Hazards Assessment. The following is an assessment of the conditions that will be encountered at or near the proposed borehole.

Seafloor to Horizon A. Horizon A is the first stratigraphic marker horizon traced on the 3-D seismic data; however, the SBP data provided more detailed information about the sediments in the upper half of this sequence.

> Seafloor to SBP Penetration Limit. The sediments just below the seafloor are high-water content hemipelagic clays (Figure W-3). The high-water content drape is 8 ft thick at the proposed well. Stratified clays with greater silt content comprise the shallow sediments to the limits of SBP data penetration. These sediments are conformable to the underlying irregular morphology produced by buried mass transport deposits (MTDs). The base of the stratified clays is 84 ft bml at the proposed well (Figure W-3).
>
> SBP Penetration Limit to Horizon A. The SBP data resolves the low-amplitude, parallel reflectors below the seafloor on the 3-D seismic data. The lower half of the sequence is composed of MTDs that likely contain interbedded clays and silts. The portion of this sequence is 174 ft thick at the proposed well. Horizon A will be encountered at 258 ft bml (Figure W-4).

There is a ***low*** potential for gas hydrates from this sequence. There is a ***negligible*** potential for shallow gas from this sequence. There is a ***negligible*** potential for SWF from this sequence.

Horizon A to Horizon B. The stratigraphic sequence between Horizons A and B is composed of mass transport deposits (MTD's). This sequence is interpreted as the upper portion of the regionally defined Blue unit (Figure W-4) as described by Ostermeier et al. (2002) and Winker and Booth (2000). This sequence likely contains clays and silts with potential isolated sand bodies. Horizon B is a prominent reflector at the base of this relatively low-amplitude sequence. A sand layer was identified on offset well data associated with Horizon B (see Figure 1-13 of the Berger 2018 report). Horizon B will be encountered at 524 ft bml, within the potential sand layer that may occur between 485 ft and 551 ft bml Figure W-4).

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from 258 ft to 485 ft bml. There is a ***moderate*** potential for SWF assigned to the sand layer from 485 ft to 551 ft bml.

Horizon B to Horizon C. The stratigraphic sequence between Horizons B and C is interpreted as the lower portion of the Blue unit. This portion of the Blue unit also contains MTDs. The top of this sequence is marked by prominent reflectors at and below Horizon B. These high-amplitude reflectors may represent a 66 ft thick interval of sheet sands that may be encountered down to 551 ft bml (Figure W-4). The lower MTD portion of this sequence likely contains clays and silts with potential isolated sand bodies. The

Appendix C

lower portion of this sequence is 275 ft thick at the proposed well. Horizon C is encountered at 826 ft bml (Figure W-4).

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from within this unit (Figure W-4).

Horizon C to Horizon D. The sequence between Horizons C and D is likely a clay-dominated turbidite deposit. The sequence is 162 ft thick at the proposed well. Horizon D is the base of these parallel-bedded turbidites and is encountered at 988 ft bml (Figure W-4).

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***negligible*** potential for SWF from within this sequence (Figure W-4).

Horizon D to Horizon E. This sequence represents the Green Unit of potential shallow water flow (Berger, 2017). The unit is composed of channelized mass transport deposit sediments, predominantly silts and clays with possible isolated sands near the base of the sequence. This sequence correlates to a low-severity SWF at the offset well MC 607 G09837-#1 completed in 1997. However, no flow was reported from other wells in MC 519 which were completed in 2009, 2010, 2011, and 2019. Horizon E is encountered at 1,439 ft bml (Figure W-4) and the sequence is 451 ft thick at the proposed well.

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from within this sequence (Figure W-4).

Horizon E to Horizon F. The sequence between Horizons E and F comprises a mass transport deposit containing interbedded silts, clays, and isolated sands (Figure W-4). Horizon F is a prominent reflector at the base of this relatively low-amplitude sequence. Horizon F is encountered at 1,631 ft bml. A sand layer occurs between 1,578 ft and 1,676 ft bml, and the combined deposits between Horizon E and F total 192 ft in thickness at the proposed well.

There is a ***low*** potential for gas hydrates within this sequence. There is a ***low*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from within this sequence.

Horizon F to Horizon G. The sequence between Horizons F and G contains an upper unit interpreted as thinly-bedded turbidite deposits containing silts and clays and a lower unit of sand-prone mass transport deposits separated by an interface at 2,153 ft BML. The upper unit is 522 ft thick at the proposed well. The lower unit is about 826 ft thick at the proposed well and correlates to the unit at the depth of the reported SWF at the offset well MC 520 G09821-#H001. Other wells in MC 519, completed in 2009, 2010, 2011, and 2019, did not report any flow associated with this lower unit. A second well in MC 520, located near MC 520 G09821-#H001, was completed in 2009 without reporting SWF (BOEM, 2011). Horizon G is the erosional surface at the base of the mass transport deposits and is encountered at 2,979 ft bml (Figure W-4).

The BGHSZ is estimated to occur at 1,838 ft bml within this sequence based on Maekawa et al. (1995).

There is a ***low*** potential for gas hydrates from Horizon F to the BGHSZ (1,631 ft to 1,838 ft bml) and a ***negligible*** potential for gas hydrates from 1,838 ft bml to Horizon G (2,979 ft bml). There is a ***low*** potential for shallow gas from 1,631 ft to an interface at 2,153 ft bml and a ***moderate*** potential for shallow gas from the interface at 2,153 ft to Horizon G at 2,979 ft bml. There is a ***low*** potential for SWF from Horizon F at 1,631 ft to Horizon G at 2,979 ft bml.

Appendix C

Horizon G to Horizon H. The sequence between Horizon G and Horizon H is interpreted to comprise intervals of landslide and debris flow deposits containing interbedded silt, clay, and sand alternating with turbidite deposits containing layered silts and sands (Figure W-4).

The Horizon G to Horizon H sequence is 617 ft thick at the proposed location and Horizon H is mapped at 3,596 ft bml.

There is a ***negligible*** potential for gas hydrates in this sequence. There is a ***moderate*** potential for shallow gas from this sequence. There is a ***low*** potential for SWF from this sequence.

Horizon H to Horizon I. The sequence between Horizons H and I is interpreted to contain an upper unit of interbedded silt and clay-dominated mass transport deposits and sand-prone channel overbank deposits overlying a lower unit of silt and clay-dominated mass transport deposits separated by an interface at 4,085 ft bml (Figure W-4). The upper unit of this sequence is 489 ft thick and the lower unit is 669 ft thick.

The Horizon H to Horizon I sequence is 1,158 ft thick at the proposed location and Horizon I is mapped at 4,754 ft bml.

There is a ***negligible*** potential for gas hydrates in this sequence. There is a ***moderate*** potential for shallow gas from Horizon H at 3,596 ft bml to the interface at 4,085 ft bml and a ***low*** potential for shallow gas from the interface at 4,085 ft bml to Horizon I at 4,754 ft bml. There is a ***low*** potential for SWF from within this sequence (Figure W-4).

Horizon I to investigation limit (5,000 ft bml). The sediments below Horizon I to 5,000 ft bml are interpreted to consist of silt and clay dominated mass transport deposits (Figure W-4). The sediments are 246 ft thick at the proposed location.

There is a ***negligible*** potential for gas hydrates in this sequence. There is a ***low*** potential for shallow gas and a ***low*** potential for SWF from this interval (Figure W-4).

Shallow Gas. There are no amplitude anomalies within 250 ft of the proposed well (Map W-4). The nearest anomaly is between Horizons F and G about 264 ft south of the proposed well. This anomaly is associated with sandy mass transport deposits which may contain accumulated hydrocarbons that may have migrated along a deep-seated fault. Additional amplitude anomalies between Horizons F and G are located 368 ft to the southeast and 350 ft to the northeast.

Faults. There are no observed seafloor faults at or near Proposed Well MC 519-U (Figure W-3). A vertical wellbore at Proposed Well MC 519-U will not penetrate any apparent faults within the investigation limit (Figure W-4).

There are no apparent seafloor or buried faults within 250 ft of the proposed wellbore within the investigation limit.

Appendix C

Proposed Well MC 519-V

The water depth at Proposed Well MC 519-V is 6,527 ft below sea level (BSL; Map W-5). The proposed well is within an area of relatively smooth seafloor that slopes to the southeast at 0.5°. The proposed location provided by Talos is as follows:

Table W-3. Location, block calls, and seismic lines for Proposed Well MC 519-V

NAD27 UTM Zone 16 North, US Survey ft		Geographic Coordinates	
X	Y	Latitude	Longitude
1,242,571.15	10,340,272.53	28°29'17.0345"N	88°14'19.9478"W
Block Calls		3-D Seismic Line Reference	
		Line	Trace
7,051.15 FWL	3,247.47 FNL	11651	11889

Twinned Location

Proposed Well MC 519-Alt-V is 50 ft east of the Proposed Well MC 519-V, and conditions are approximately equivalent, no separate illustrations of the subsurface conditions were prepared. The proposed alternate drilling location is as follows:

Table W-4. Location and block calls for Proposed Well MC 519-Alt-V

NAD27 UTM Zone 16 North, US Survey ft		Geographic Coordinates	
X	Y	Latitude	Longitude
1,242,621.15	10,340,272.53	28°29'17.0396"N	88°14'19.3874"W
Block Calls			
7,101.15 FWL	3,247.47 FNL		

Appendix C

Power Spectrum Analysis

The power spectrum for the proposed well was derived using IHS Kingdom Suite's Trace Calculator tools. For Proposed Well MC 519-V, the power spectrum was extracted from a subset that ranges from Inline 11601 to 11701 and Crossline 11839 to 11939 and is limited to one second below the seafloor. The frequency content within the upper one second below the seafloor is of sufficient quality for shallow hazards analysis.

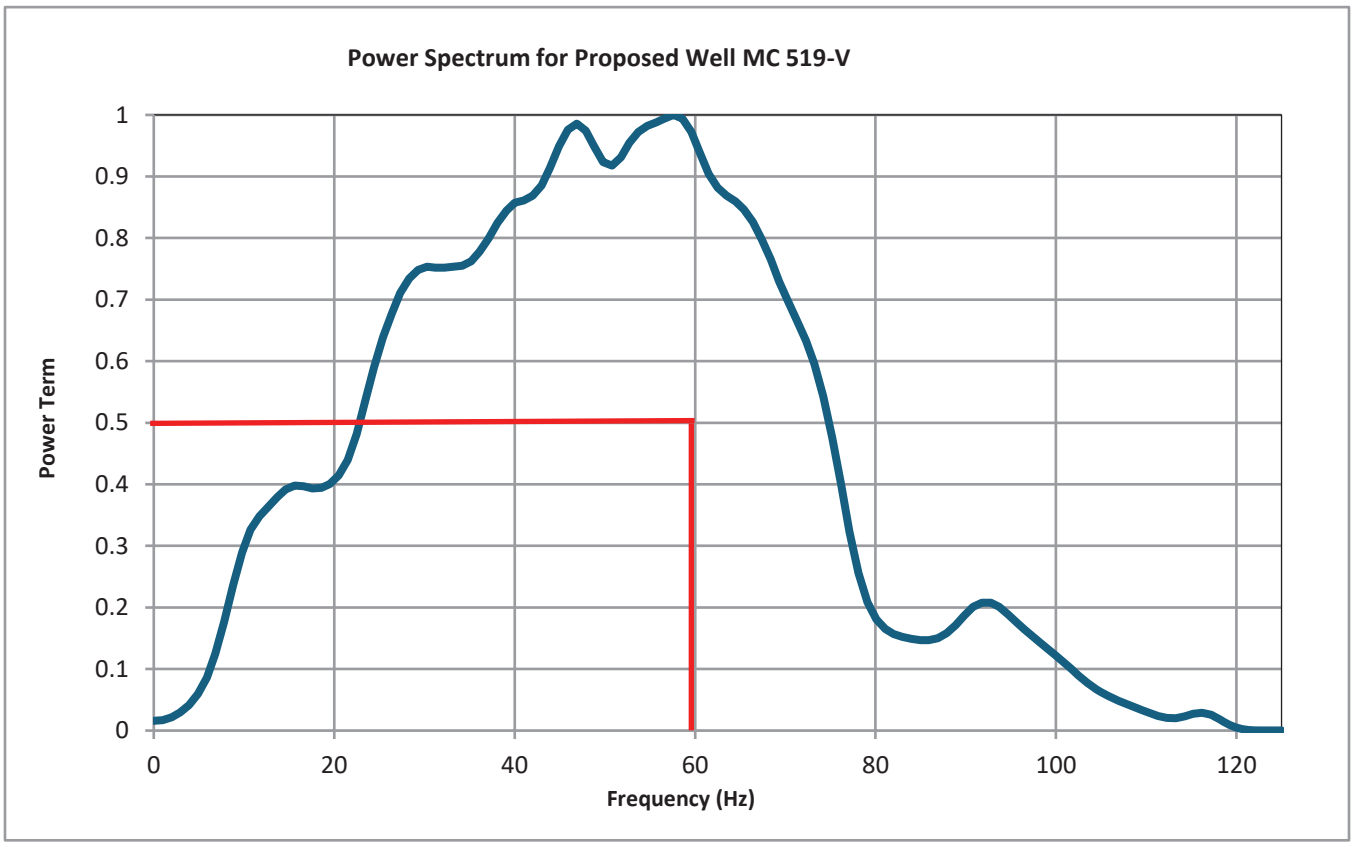

Figure W-5. Power spectrum at Proposed Well MC 519-V

Appendix C

Seafloor Conditions

The following paragraphs summarize the seafloor morphology, benthic communities potential, and archaeological potential at the proposed well location.

Seafloor Morphology. Proposed Well MC 519-V is located in the northwestern portion of MC 519 (Figure W-1). The water depths at the proposed well is 6527 ft BSL and in the vicinity range from 6,453 ft to 6,596 ft BSL (Map W-5). The seafloor near the proposed well is hummocky and gently dipping 0.5 ° to the southeast. No seafloor faults or other seafloor features are within the 2,000-ft muds and cuttings radius for the proposed wellsite (Map W-5, Figure W-6 and Figure W-7).

There are no seafloor faults within 2,000 ft of Proposed Well MC 519-V.

Benthic Communities Assessment. There are no water bottom anomalies identified by the BOEM (2025b) within 2,000 ft of the proposed well location. There are no high-amplitude seafloor anomalies identified in the 3-D seismic data within 2,000 ft of the proposed well location (Map W-7 and Map W-8). Features or areas that could support high-density benthic communities are not anticipated within 2,000 ft of the proposed location.

Features or areas that could support high-density chemosynthetic or other benthic communities are not anticipated within 2,000 ft of Proposed Well MC 519-V.

Infrastructure. There are four existing wells within MC 519. The nearest existing well G14641-001 is 5,230 ft southwest of the proposed well MC 519-V location (Figure W-1). There are seven oil pipelines, seven umbilicals and one gas pipeline within MC 519 (Figure W-1). The nearest of these is an umbilical with segment number 13790 (Map W-5 through Map W-8). This umbilical trends northwest to southeast and passes 1,670 ft northeast of the proposed well location (BOEM, 2025a).

Existing umbilical with segment number 13790 passes 1,670 ft northeast of Proposed Well MC 519-V.

Archaeologic Assessment. All blocks in the Mississippi Canyon Protraction Area are regarded as being in a high probability zone for historic shipwrecks based on Bureau of Ocean Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE) NTL No. 2011-JOINT-G01 (BOEM/BSEE, 2011), including MC 519. Pursuant to the public information in the NOAA Automated Wreck and Obstruction Information System and Navigational Charts (NOAA, 2021); there are no reported shipwrecks within the seafloor assessment area. The required archaeological survey and report were completed by C&C Technologies and were submitted under separate cover (C&C, 2006). There are no archaeologically significant contacts identified within 2,000 ft of Proposed Well MC 519-V. For avoidances and sonar contacts please refer to the C&C Archaeological Assessment.

No archaeologically significant contacts identified within 2,000 ft of Proposed Well MC 519-V.

Appendix C

Wellsite Assessment

The wellsite assessment covers the subsurface conditions within a 500 ft radius of the proposed wellpath from the seafloor to the investigation limit of 5,000 ft BML.

Stratigraphy and Tophole Prognosis. Nine 3-D seismic marker horizons (Horizons A, B, C, D, E, F, G, H, and I) were interpreted at the Proposed Well MC 519-V (Figure W-7). A generalized description of the stratigraphic sequences can be found in Section 1.4 of the previous Berger (2018) Shallow Hazards Assessment. The following is an assessment of the conditions that will be encountered at or near the proposed borehole.

Seafloor to Horizon A. Horizon A is the first stratigraphic marker horizon traced on the 3-D seismic data; however, the SBP data provided more detailed information about the sediments in the upper half of this sequence.

> Seafloor to SBP Penetration Limit. The sediments just below the seafloor are high-water content hemipelagic clays (Figure W-6). The high-water content drape is 7 ft thick at the proposed well. Stratified clays with greater silt content comprise the shallow sediments to the limits of SBP data penetration. These sediments are conformable to the underlying irregular morphology produced by buried mass transport deposits (MTDs). The base of the stratified clays is 119 ft bml at the proposed well (Figure W-6).
>
> SBP Penetration Limit to Horizon A. The SBP data resolves the low-amplitude, parallel reflectors below the seafloor on the 3-D seismic data. The lower half of the sequence is composed of MTDs that likely contain interbedded clays and silts. This portion of this sequence is 149 ft thick at the proposed well. Horizon A will be encountered at 268 ft bml (Figure W-7).

There is a ***low*** potential for gas hydrates from this sequence. There is a ***negligible*** potential for shallow gas from this sequence. There is a ***negligible*** potential for SWF from this sequence.

Horizon A to Horizon B. The stratigraphic sequence between Horizons A and B is composed of a mass transport deposit. This sequence is interpreted as the upper portion of the regionally defined Blue unit (Figure W-7) as described by Ostermeier et al. (2002) and Winker and Booth (2000). This sequence likely contains clays and silts with potential isolated sand bodies. Horizon B is a prominent reflector at the base of this relatively low-amplitude sequence. A sand layer was identified on offset well data associated with Horizon B (see Figure 1-13 of the Berger 2018 report). Horizon B will be encountered at 515 ft bml, whereas the sand layer may occur between 477 ft and 546 ft bml (Figure W-7).

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from 268 ft to 477 ft bml. There is a ***moderate*** potential for SWF from 477 ft to 546 ft bml within the potential sand layer.

Horizon B to Horizon C. The stratigraphic sequence between Horizons B and C is interpreted as the lower portion of the Blue unit. This portion of the Blue unit also contains MTDs. The top of this sequence is marked by prominent reflectors at and below Horizon B. These high-amplitude reflectors may represent a 69 ft thick interval of sheet sands that may be encountered down to 546 ft bml (Figure W-7). The lower MTD portion of this sequence likely contains clays and silts with potential isolated sand bodies. The lower portion of this sequence is 278 ft thick at the proposed well. Horizon C is encountered at 824 ft bml (Figure W-7).

Appendix C

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from within this unit.

Horizon C to Horizon D. The sequence between Horizons C and D is likely a clay-dominated turbidite deposit. The sequence is 158 ft thick at the proposed well. Horizon D is the base of these parallel-bedded turbidites and is encountered at 982 ft bml (Figure W-7).

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***negligible*** potential for SWF from within this sequence.

Horizon D to Horizon E. This sequence is represented as the Green unit of potential shallow water flow (Berger, 2017), composed of channelized mass transport deposit sediments, predominantly silts and clays with possible isolated sands near the base of the sequence. This sequence correlates to a low-severity SWF at the offset well MC 607 G09837-#1 completed in 1997. However, no flow was reported from other wells in MC 519 which were completed in 2009, 2010, 2011, and 2019. Horizon E is encountered at 1,430 ft bml (Figure W-7).

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from within this sequence (Figure W-7).

Horizon E to Horizon F. The sequence between Horizons E and F comprises a mass transport deposit containing interbedded silts, clays, and isolated sands (Figure W-7). Horizon F is a prominent reflector at the base of this relatively low-amplitude sequence. Horizon F is encountered at 1,658 ft bml within a sand from 1,605 ft to 1,703 ft bml. The combine deposits between Horizon E and F total 228 ft in thickness.

There is a ***low*** potential for gas hydrates within this sequence. There is a ***low*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from within this sequence.

Horizon F to Horizon G. The sequence between Horizons F and G contains an upper unit interpreted as thinly-bedded turbidite deposits containing silts and clays and a lower unit of sand-prone mass transport deposits separated by an interface at 2,202 ft BML. The upper unit is 544 ft thick at the proposed well. The lower unit is about 829 ft thick at the proposed well and correlates to the unit at the depth of the reported SWF at the offset well MC 520 G09821-#H001. The MC 520 well was completed in 1997. Other wells in MC 519, completed in 2009, 2010, 2011, and 2019, did not experience any flow associated with this lower unit. A second well in MC 520, located near MC 520 G09821-#H001, was completed in 2009 without experiencing SWF (BOEM, 2011). Horizon G is the erosional surface at the base of the mass transport deposits and is encountered at 3,031 ft bml (Figure W-7).

The BGHSZ is estimated to occur at 1,838 ft bml within this sequence based on Maekawa et al. (1995).

There is a ***low*** potential for gas hydrates from Horizon F to the BGHSZ (1,658 ft to 1,838 ft bml) and a ***negligible*** potential for gas hydrates from 1,838 ft bml to Horizon G (3,031 ft bml). There is a ***low*** potential for shallow gas from 1,658 ft to an interface at 2,202 ft bml and a ***moderate*** potential for shallow gas from the interface at 2,202 ft to Horizon G at 3,031 ft bml. There is a ***low*** potential for SWF from Horizon F at 1,658 ft to Horizon G at 3,031 ft bml.

Horizon G to Horizon H. The sequence between Horizon G and Horizon H is interpreted to comprise intervals of landslide and debris flow deposits containing interbedded silt, clay, and sand alternating with turbidite deposits containing layered silts and sands (Figure W-7).

Appendix C

The Horizon G to Horizon H sequence is 491 ft thick at the proposed location and Horizon H is mapped at 3,522 ft bml.

There is a ***negligible*** potential for gas hydrates in this sequence. There is a ***moderate*** potential for shallow gas from this sequence. There is a ***low*** potential for SWF from this sequence.

Horizon H to Horizon I. The sequence between Horizons H and I is interpreted to contain an upper unit of interbedded silt and clay-dominated mass transport deposits and sand-prone channel overbank deposits overlying a lower unit of silt and clay-dominated mass transport deposits separated by an interface at 3,958 ft bml (Figure W-7). The upper unit of this sequence is 436 ft thick and the lower unit is 782 ft thick.

The Horizon H to Horizon I sequence is 1,218 ft thick at the proposed location and Horizon I is mapped at 4,740 ft bml (Figure W-7).

There is a ***negligible*** potential for gas hydrates in this sequence. There is a ***moderate*** potential for shallow gas from Horizon H at 3,522 ft bml to the interface at 3,958 ft bml and a ***low*** potential for shallow gas from the interface at 3,958 ft bml to Horizon I at 4,740 ft bml. There is a ***low*** potential for SWF from within this sequence (Figure W-7).

Horizon I to investigation limit (5,000 ft bml). The sediments below Horizon I to 5,000 ft bml are interpreted to consist of silt and clay dominated mass transport deposits (Figure W-7). The sediments are 260 ft thick at the proposed location.

There is a ***negligible*** potential for gas hydrates in this sequence. There is a ***low*** potential for shallow gas and a ***low*** potential for SWF from this interval (Figure W-7).

Shallow Gas. There are no amplitude anomalies within 250 ft of the proposed well (Map W-8). The nearest anomaly is between Horizons F and G about 262 ft southwest of the proposed well. This anomaly is associated with sandy mass transport deposits which may contain accumulated hydrocarbons that may have migrated along a deep-seated fault. Additional amplitude anomalies between Horizons F and G are located 481 ft to the northwest and 491 ft to the northeast.

Faults. There are no observed seafloor faults at or near Proposed Well MC 519-V. A vertical wellbore at Proposed Well MC 519-V will not penetrate any apparent faults within the investigation limit (Figure W-6 and Figure W-7).

There are no apparent seafloor or buried faults within 250 ft of the proposed wellbore within the investigation limit.

Appendix C

Proposed Well MC 519-W

The water depth at Proposed Well MC 519-W is 6,522 ft below sea level (BSL; Map W-9). The proposed well is within an area of relatively smooth seafloor that slopes to the southeast at 0.3°. The proposed location provided by Talos is as follows:

Table W-5. Location, block calls, and seismic lines for Proposed Well MC 519-W

NAD27 UTM Zone 16 North, US Survey ft		Geographic Coordinates	
X	Y	Latitude	Longitude
1,242,062.16	10,340,935.63	28°29'23.5490"N	88°14'25.7294"W
Block Calls		3-D Seismic Line Reference	
		Line	Trace
6,542.16 FWL	2,584.37 FNL	11653	11909

Twinned Location

Proposed Well MC 519-Alt-W is 50 ft east of the Proposed Well MC 519-W, and conditions are approximately equivalent, no separate illustrations of the subsurface conditions were prepared. The proposed alternate drilling location is as follows:

Table W-6. Location and block calls for Proposed Well MC 519-Alt-W

NAD27 UTM Zone 16 North, US Survey ft		Geographic Coordinates	
X	Y	Latitude	Longitude
1,242,112.16	10,340,935.63	28°29'23.5541"N	88°14'25.1690"W
Block Calls			
6,592.16 FWL	2,584.37 FNL		

Appendix C

Power Spectrum Analysis

The power spectrum for the proposed well was derived using IHS Kingdom Suite's Trace Calculator tools. For Proposed Well MC 519-W, the power spectrum was extracted from a subset that ranges from Inline 11603 to 11703 and Crossline 11859 to 11959 and is limited to one second below the seafloor. The frequency content within the upper one second below the seafloor is of sufficient quality for shallow hazards analysis.

Figure W-8. Power spectrum at Proposed Well MC 519-W

Appendix C

Seafloor Conditions

The following paragraphs summarize the seafloor morphology, benthic communities potential, and archaeological potential at the proposed well location.

Seafloor Morphology. Proposed Well MC 519-W is located in the northwestern portion of MC 519 (Figure W-1). The water depths at the proposed well is 6,522 ft BSL and in the vicinity ranges from 6,439 ft to 6,589 ft BSL (Map W-9). The seafloor near the proposed well is hummocky and gently dipping 0.3°to the southeast. No seafloor faults or other seafloor features are within the 2,000-ft muds and cuttings radius for the proposed wellsite (Map W-9, Figure W-9 and Figure W-10).

There are no seafloor faults within 2,000 ft of Proposed Well MC 519-W.

Benthic Communities Assessment. There are no water bottom anomalies identified by the BOEM (2025b) within 2,000 ft of the proposed well location. There are no high-amplitude seafloor anomalies identified in the 3-D seismic data within 2,000 ft of the proposed well location (Map W-11 and Map W-12). Features or areas that could support high-density benthic communities are not anticipated within 2,000 ft of the proposed location.

Features or areas that could support high-density chemosynthetic or other benthic communities are not anticipated within 2,000 ft of Proposed Well MC 519-W.

Infrastructure. There are four existing wells within MC 519. The nearest existing well G14641-001 is 5,420 ft southwest of the proposed well MC 519-W location (Figure W-1). There are seven oil pipelines, seven umbilicals and one gas pipeline within MC 519 (Figure W-1). The nearest of these is an umbilical with segment number 13790. This umbilical trends northwest to southeast and passes 1,380 ft northeast of the proposed well location as seen on Maps W-9 through W-12 (BOEM, 2025a).

Existing umbilical with segment number 13790 passes 1,380 ft northeast of Proposed Well MC 519-W.

Archaeologic Assessment. All blocks in the Mississippi Canyon Protraction Area are regarded as being in a high probability zone for historic shipwrecks based on Bureau of Ocean Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE) NTL No. 2011-JOINT-G01 (BOEM/BSEE, 2011), including MC 519. Pursuant to the public information in the NOAA Automated Wreck and Obstruction Information System and Navigational Charts (NOAA, 2021); there are no reported shipwrecks within the seafloor assessment area. The required archaeological survey and report were completed by C&C Technologies and were submitted under separate cover (C&C, 2006). There are no archaeologically significant contacts identified within 2,000 ft of Proposed Well MC 519-W. For avoidances and sonar contacts please refer to the C&C Archaeological Assessment.

No archaeologically significant contacts identified within 2,000 ft of Proposed Well MC 519-W.

Appendix C

Wellsite Assessment

The wellsite assessment covers the subsurface conditions within a 500 ft radius of the proposed wellpath from the seafloor to the investigation limit of 5,000 ft BML.

Stratigraphy and Tophole Prognosis. Nine 3-D seismic marker horizons (Horizons A, B, C, D, E, F, G, H, and I) were interpreted at the Proposed Well MC 519-W (Figure W-10). A generalized description of the stratigraphic sequences can be found in Section 1.4 of the previous Berger (2018) Shallow Hazards Assessment. The following is an assessment of the conditions that will be encountered at or near the proposed borehole.

Seafloor to Horizon A. Horizon A is the first stratigraphic marker horizon traced on the 3-D seismic data; however, the SBP data provided more detailed information about the sediments in the upper half of this sequence.

Seafloor to SBP Penetration Limit. The sediments just below the seafloor are high-water content hemipelagic clays (Figure W-9). The high-water content drape is 8 ft thick at the proposed well. Stratified clays with greater silt content comprise the shallow sediments to the limits of SBP data penetration. These sediments are conformable to the underlying irregular morphology produced by buried mass transport deposits (MTDs). The base of the stratified clays is 106 ft bml at the proposed well (Figure W-9).

SBP Penetration Limit to Horizon A. The SBP data resolves the low-amplitude, parallel reflectors below the seafloor on the 3-D seismic data. The lower half of the sequence is composed of MTDs that likely contain interbedded clays and silts. This portion of this sequence is 157 ft thick at the proposed well. Horizon A will be encountered at 263 ft bml (Figure W-10).

There is a ***low*** potential for gas hydrates from this sequence. There is a ***negligible*** potential for shallow gas from this sequence. There is a ***negligible*** potential for SWF from this sequence.

Horizon A to Horizon B. The stratigraphic sequence between Horizons A and B is composed of a mass transport deposit. This sequence is interpreted as the upper portion of the regionally defined Blue unit (Figure W-10) as described by Ostermeier et al. (2002) and Winker and Booth (2000). This sequence likely contains clays and silts with potential isolated sand bodies. Horizon B is a prominent reflector at the base of this relatively low-amplitude sequence. A sand layer was identified on offset well data associated with Horizon B (see Figure 1-13 of the Berger 2018 report). Horizon B will be encountered at 518 ft bml, whereas the sand layer may occur between 477 ft and 546 ft bml (Figure W-10).

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from 263 ft to 477 ft bml. There is a ***moderate*** potential for SWF from 477 ft to 546 ft bml within the potential sand layer.

Horizon B to Horizon C. The stratigraphic sequence between Horizons B and C is interpreted as the lower portion of the Blue unit. This portion of the Blue unit also contains MTDs. The top of this sequence is marked by prominent reflectors at and below Horizon B. These high-amplitude reflectors may represent a 69 ft thick interval of sheet sands that may be encountered down to 546 ft bml (Figure W-10). The lower MTD portion of this sequence likely contains clays and silts with potential isolated sand bodies. The lower portion of this sequence is 280 ft thick at the proposed well. Horizon C is encountered at 826 ft bml (Figure W-10).

Appendix C

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from within this unit.

Horizon C to Horizon D. The sequence between Horizons C and D is likely a clay-dominated turbidite deposit. The sequence is 153 ft thick at the proposed well. Horizon D is the base of these parallel-bedded turbidites and is encountered at 979 ft bml (Figure W-10).

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***negligible*** potential for SWF from within this sequence.

Horizon D to Horizon E. This sequence is composed of channelized mass transport deposits sediments, predominantly silts and clays with possible isolated sands near the base of the sequence. This sequence correlates to a low-severity SWF at the offset well MC 607 G09837-#1 completed in 1997. This sequence probably represents the Green unit SWF zone (Berger, 2017); however, no flow was reported from other wells in MC 519 which were completed in 2009, 2010, 2011, and 2019. Horizon E is encountered at 1,436 ft bml (Figure W-10).

There is a ***low*** potential for gas hydrates within this sequence. There is a ***negligible*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from within this sequence (Figure W-10).

Horizon E to Horizon F. The sequence between Horizons E and F comprises a mass transport deposit containing interbedded silts, clays, and isolated sands (Figure W-10). Horizon F is a prominent reflector at the base of this relatively low-amplitude sequence. Horizon F is encountered at 1,643 ft bml within a sand layer occuring between 1,596 ft and 1,682 ft bml. The combined deposits between Horizons E and F total 207 ft.

There is a ***low*** potential for gas hydrates within this sequence. There is a ***low*** potential for shallow gas from within this sequence. There is a ***low*** potential for SWF from within this sequence.

Horizon F to Horizon G. The sequence between Horizons F and G contains an upper unit interpreted as thinly-bedded turbidite deposits containing silts and clays and a lower unit of sand-prone mass transport deposits separated by an interface at 2196 ft BML. The upper unit is 553 ft thick at the proposed well. The lower unit is about 841 ft thick at the proposed well and correlates to the unit at the depth of the reported SWF at the offset well MC 520 G09821-#H001. The MC 520 well was completed in 1997. Other wells in MC 519, completed in 2009, 2010, 2011, and 2019, did not experience any flow associated with this lower unit. A second well in MC 520, located near MC 520 G09821-#H001, was completed in 2009 without experiencing SWF (BOEM, 2011). Horizon G is the erosional surface at the base of the mass transport deposits and is encountered at 3,037 ft bml (Figure W-10).

The BGHSZ is estimated to occur at 1,838 ft bml within this sequence based on Maekawa et al. (1995).

There is a ***low*** potential for gas hydrates Horizon F to the BGHSZ (1,643 ft to 1,838 ft bml) and a ***negligible*** potential for gas hydrates from 1,838 ft bml to Horizon G (3,037 ft bml). There is a ***low*** potential for shallow gas from Horizon F at 1,643 ft to an interface at 2,196 ft bml and a ***moderate*** potential for shallow gas from the interface at 2,196 ft to Horizon G at 3,037 ft bml. There is a ***low*** potential for SWF from Horizon F at 1,643 ft to Horizon G at 3,037 ft bml.

Appendix C

Horizon G to Horizon H. The sequence between Horizon G and Horizon H is interpreted to comprise intervals of landslide and debris flow deposits containing interbedded silt, clay, and sand alternating with turbidite deposits containing layered silts and sands (Figure W-10).

The Horizon G to Horizon H sequence is 498 ft thick at the proposed location and Horizon H is mapped at 3,535 ft bml.

There is a ***negligible*** potential for gas hydrates in this sequence. There is a ***moderate*** potential for shallow gas from this sequence. There is a ***low*** potential for SWF from this sequence.

Horizon H to Horizon I. The sequence between Horizons H and I is interpreted to contain an upper unit of interbedded silt and clay-dominated mass transport deposits and sand-prone channel overbank deposits overlying a lower unit of silt and clay-dominated mass transport deposits separated by an interface at 3,886 ft bml (Figure W-10). The upper unit of this sequence is 351 ft thick and the lower unit is 858 ft thick.

The combine Horizon H to Horizon I sequence is 1,209 ft thick at the proposed location and Horizon I is mapped at 4,744 ft bml.

There is a ***negligible*** potential for gas hydrates in this sequence. There is a ***moderate*** potential for shallow gas from Horizon H at 3,535 ft bml to the interface at 3,886 ft bml and a ***low*** potential for shallow gas from the interface at 3,886 ft bml to Horizon I at 4,744 ft bml. There is a ***low*** potential for SWF from within this sequence (Figure W-10).

Horizon I to investigation limit (5,000 ft bml). The sediments below Horizon I to 5,000 ft bml are interpreted to consist of clay-rich mass transport deposits (Figure W-10). The sediments are 256 ft thick at the proposed location.

There is a ***negligible*** potential for gas hydrates in this sequence. There is a ***low*** potential for shallow gas and a ***low*** potential for SWF from this interval (Figure W-10).

Shallow Gas. There are no amplitude anomalies within 250 ft of the proposed well (Map W-12). The nearest anomaly is between Horizons F and G about 261 ft south-southeast of the proposed well. This anomaly is associated with sandy mass transport deposits which may contain accumulated hydrocarbons that may have migrated along the deep-seated fault. Additional amplitude anomalies between Horizons F and G are located 265 ft to the northwest and 365 ft to the east.

Faults. There are no observed seafloor faults at or near Proposed Well MC 519-W. A vertical wellbore at Proposed Well MC 519-W will not penetrate any apparent faults within the investigation limit (Figure W-9 and Figure W-10).

There are no apparent seafloor or buried faults within 250 ft of the proposed wellbore within the investigation limit.

Appendix C

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MC 519 "MARCHENA" EP
LINE OF SECTION A – A'

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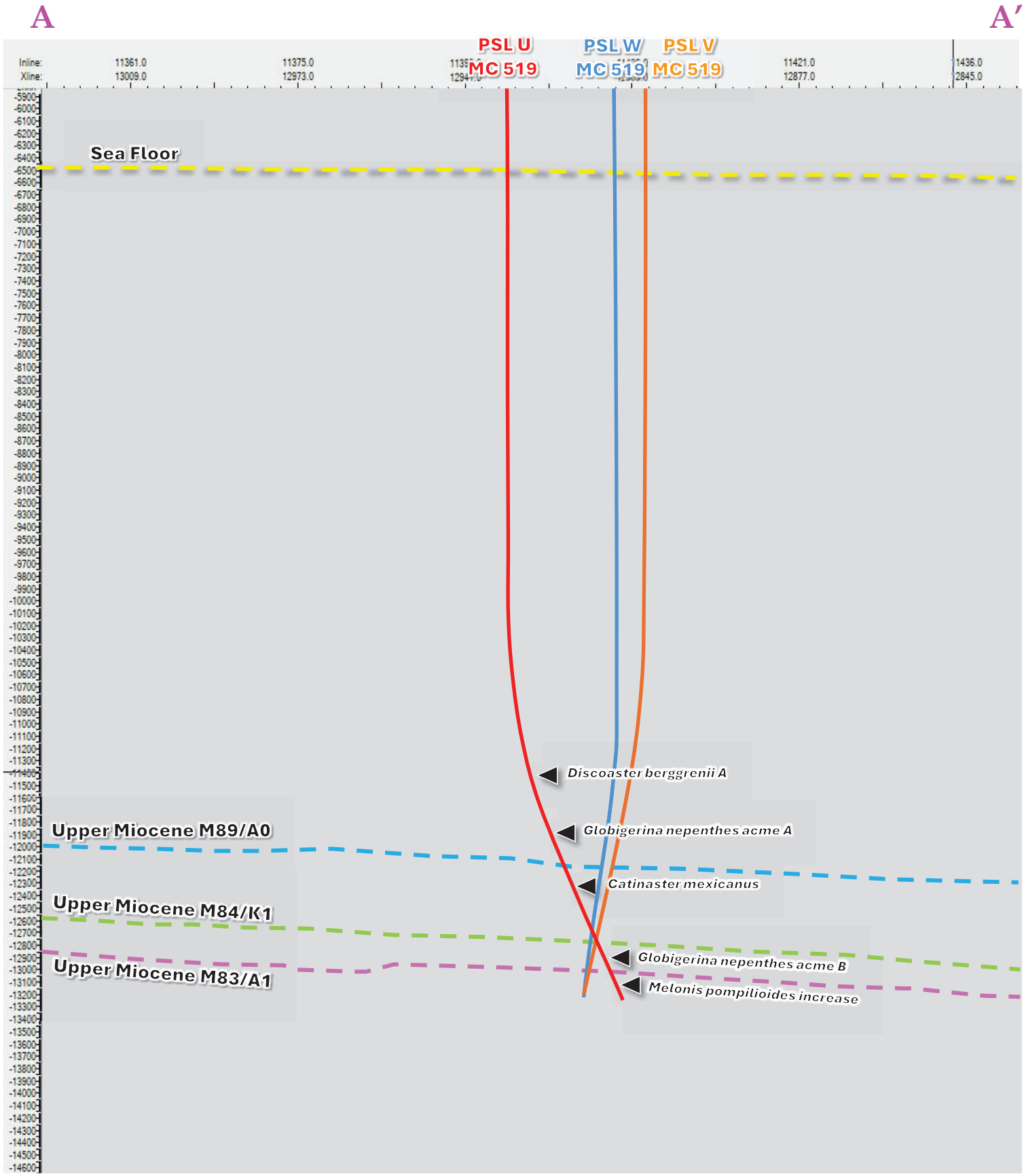


Appendix C

APPENDIX D
HYDROGEN SULFIDE INFORMATION

A) CONCENTRATION

In accordance with NTL 2008-G04, this information is not applicable to this plan as Talos QN Exploration LLC does not anticipate encountering any H2S during the operations proposed herein.

B) CLASSIFICATION

In accordance with 30 CFR 250.490(c), Mississippi Canyon Block 519 has been, previously, classified by the DOI as H2S absent.

PROPRIETARY INFORMATION

C) H2S CONTINGENCY PLAN

In accordance with NTL 2008-G04, this information is not applicable to this plan as Talos QN Exploration LLC does not anticipate encountering H2S during the activities proposed herein.

D) MODELING REPORT

In accordance with NTL 2008-G04, this information is not applicable to this plan as Talos QN Exploration LLC does not anticipate encountering H2S during the activities proposed herein.

APPENDIX E
MINERAL RESOURCE CONSERVATION INFORMATION

A) TECHNOLOGY & RESERVOIR ENGINEERING PRACTICES & PROCEDURES
PROPRIETARY INFORMATION

B) TECHNOLOGY & RECOVERY PRACTICES & PROCEDURES
PROPRIETARY INFORMATION

C) RESERVOIR DEVELOPMENT
PROPRIETARY INFORMATION

APPENDIX F
BIOLOGICAL, PHYSICAL, & SOCIOECONOMIC INFORMATION

A) CHEMOSYNTHETIC COMMUNITIES REPORT

The activities proposed herein could disturb seafloor areas in water depths of 984 feet or greater. An assessment of chemosynthetic communities associated with the subject lease area is included with the Shallow Hazards and Archaeological Assessment previously approved under Plan Control No. N-9122.

B) TOPOGRAPHIC FEATURES MAP

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as no rig, barge or anchors,etc. will be placed within 1,000 feet of the "No Activity Zone" of an identified topographic feature.

C) TOPOGRAPHIC FEATURES STATEMENT (SHUNTING)

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as Talos QN Exploration LLC is not proposing to drill more than two wells from the same surface location.

D) LIVE BOTTOM (PINNACLE TREND) MAP

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the Live Bottom (Pinnacle Trend) lease stipulation is not attached to the subject lease(s).

E) LIVE BOTTOM (LOW RELIEF) MAP

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the Live Bottom (Low Relief) lease stipulation is not attached to the subject lease(s).

F) POTENTIALLY SENSITIVE BIOLOGICAL FEATURES

In accordance with NTL 2009-G39. this information is not applicable to the activities proposed herein as the bottom-disturbing activities are not within 100 feet of potentially sensitive biological features.

G) REMOTELY OPERATED VEHICLE (ROV) SURVEYS

This is not applicable as NTL No. 2008-G06 has expired.

H) THREATENED & ENDANGERED SPECIES, CRITICAL HABITAT, & MARINE MAMMAL INFORMATION

Endangered marine mammal species as listed under the Endangered Species Act that might occur in the Gulf of Mexico are the Gulf of Mexico Bryde's Whale (Balaenoptera edeni), Oceanic Whitetip Shark (Carcharhinus longimanus), Giant Manta Ray (Manta birostris), West Indian manatee (Trichechus manatus), northern right whale (Eubalaena glacialis), fin whale (Balaenoptera physalus), humpback whale (Megaptera novaiangliae), sei whale (Balaenoptera borealis), sperm whale (Physeter macrocephalus), and blue whale (Balaenoptera musculus). Endangered or threatened sea turtle species that might occur in the Gulf of Mexico are Kemp's ridley (Lepidochelys kempii), green turtle (Chelonia mydas), hawksbill (Eretmochelys imbricate), leatherback (Demochelys coriacea), and loggerhead (Caretta caretta) (USDOI, OCS EIS/EA MMS 2007-2012). The only listed threatened fish species in the Gulf of Mexico is the Gulf sturgeon (Ancipenser oxyrincus desotoi).The subject area(s) and block(s) is not designated as a critical habitat for any of these species. Talos Energy Offshore LLC does not anticipate that any threatened or endangered species will be adversely affected as a result of the activities proposed herein. However, in the unlikely event of an accident, adverse impacts to endangered marine mammal species are possible.

Talos Energy Offshore LLC will adhere to the requirements as set forth in the following Notices to Lessees and guidelines, as applicable, to avoid or minimize impacts to any of the species listed in the ESA as a result of the operations conducted herein:

- NTL 2015-G03 "Marine Trash and Debris Awareness and Elimination"
- BOEM NTL 2016-G01 "Vessel Strike Avoidance and Injured/ Dead Protected Species Reporting
- BOEM NTL 2016-G02 "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program"
- Biological Opinion 2020:
- Appendix A: Seismic Survey Mitigation and Protected Species Observer Protocols, found in the Biological Opinion issued by the National Marine Fisheries Service on March 13,2020
- Appendix B: Gulf of Mexico Marine Trash and Debris Awareness and Elimination Survey Protocols, found in the Biological Opinion issued by the National Marine Fisheries Service on March 13,2020
- Appendix C: Gulf of Mexico Vessel Strike Avoidance and Injured/Dead Aquatic Protected Species Reporting Protocols, found in the Biological Opinion issued by the National Marine Fisheries Service on March 13,2020
- Appendix J: Sea Turtle Handling and Resuscitation Guidelines, found in the Biological Opinion issued by the National Marine Fisheries Service on March 13,2020

I) ARCHAEOLOGICAL REPORT

An assessment of the archaeological resources associated with the subject lease area is included with the Shallow Hazards and Archaeological Assessment previously approved under Plan Control No. N-9122.

J) AIR & WATER QUALITY INFORMATION

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the State of Florida is not an affected State.

K) SOCIOECONOMIC INFORMATION

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the State of Florida is not an affected State.

APPENDIX G
WASTES AND DISCHARGES INFORMATION

A) PROJECTED GENERATED WASTES

In accordance with 30 CFR 250.217 and 30 CFR 250.248, information must be provided on all projected solid and liquid wastes likely to be generated by an operator's proposed activities including operational wastes permitted by the appropriate NPDES permit and any other identified wastes. Attached to this appendix is a table entitled "Wastes you will transport and/or dispose of onshore" which satisfies the requirements set forth by NTL 2008-G04 and the aforementioned CFRs.

B) PROJECTED OCEAN DISCHARGES

In accordance with 30 CFR 250.217 and 30 CFR 250.248, information must be provided on all projected solid and liquid wastes likely to be generated by an operator's proposed activities including operational wastes permitted by the appropriate NPDES permit and any other identified wastes. Attached to this appendix is a table entitled "Wastes you will generate, treat and downhole dispose or discharge to the GOM" which satisfies the requirements set forth by NTL 2008-G04 and the aforementioned CFRs.

C) MODELING REPORT

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the subject activities do not require an individual NPDES permit. Therefore, a modeling report is not mandated.

D) NPDES PERMITS

The subject rig and/or facility will be covered under Talos QN Exploration LLC's General Permit upon commencement of the activities proposed herein.

E) COOLING WATER INTAKES

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the associated leases are within the Gulf of Mexico Region.

TABLE 1. WASTES YOU WILL GENERATE, TREAT AND DOWNHOLE DISPOSE OR DISCHARGE TO THE GOM - MC 519

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

Projected generated waste			Projected ocean discharges	
Type of Waste	**Composition**	**Projected Amount**	**Discharge rate**	**Discharge Method**
Will drilling occur ? If yes, you should list muds and cuttings		**Yes**		
Water-based drilling fluid	**Water based drilling fluids used while drilling riserless**	**45000 bbls/well**	**9000 bbls/day/well**	**discharge at seafloor during riserless operations**
Cuttings wetted with water-based fluid	**Cuttings generated while using water based drilling fluids in riserless operations**	**2400 bbls/well**	**480 bbls/day/well**	**discharge at seafloor during riserless operations**
Cuttings wetted with synthetic-based fluid	**Cuttings generated while using synthetic based drilling fluid**	**3850 bbls/well**	**110 bbls/day/well**	**dried & discharge overboard**
Will humans be there? If yes, expect conventional waste				
Domestic waste	**grey water from living quarters**	**9600 bbls/well**	**240 bbls/hr/well**	**USCG approved MSD with chlorination and discharge overboard**
Sanitary waste	**treated sanitary waste from living quarters**	**7680 bbls/well**	**192 bbls/hr/well**	**USCG approved MSD with chlorination and discharge overboard**
Is there a deck? If yes, there will be Deck Drainage				
Deck Drainage	**washwater, rain water and deck drainage**	**11520 bbls/well**	**288 bbls/hr/well**	**discharge overboard**
Will you conduct well treatment, completion, or workover?				
Well treatment fluids	**11.5 Sodium Bromide**	**N/A**	**N/A**	**N/A**
Well completion fluids	**Calcium Bromide & Glycol**	**12,000 bbls**	**N/A**	**Completion fluid is recyled from well to well and is not discharged**
Workover fluids	**N/A**	**N/A**	**N/A**	**N/A**
Miscellaneous discharges. If yes, only fill in those associated with your activity.				
Desalinization unit discharge	**desalinization unit water**	**4000 bbls/well**	**100 bbls/day/well**	**discharge overboard**
Blowout prevent fluid	**Water-based hydraulic control fluid**	**62 bbls/well**	**2 bbls/day/well**	**discharged from vent ports on BOP stack**
Uncontaminated Ballast water	**Uncontaminated seawater**	**160000 bbls/well**	**4000 bbls/day/well**	**per MARPOL regulations**
Rig Wash Water	**Fresh Water & Soap**	**2000 bbls/well**	**50 bbls/day/well**	**discharge overboard**
Uncontaminated Bilge water	**Uncontaminated bilge water**	**800 bbls/well**	**20 bbls/day/well**	**discharge overboard**
Excess cement at seafloor	**Water, CaCl Class H cement & rheological modifiers**	**1600 bbls/well**	**800 bbls/day for 2 days/well (only when the 22" casing are run)**	**discharge at seafloor**
Cement Spacer	**Water base fluid, viscosifier, barite & gel**	**200 bbls/well**	**100 bbls/day for 2 days/well (only when the 22" casing are run)**	**discharge at seafloor**
Fire water	**Seawater**	**NA**	**NA**	**discharge overboard**
Uncontaminated Cooling water	**Seawater**	**NA**	**NA**	**discharge overboard**
Will you produce hydrocarbons? If yes fill in for produced water.				
Produced water (During Well Test)	**N/A**	**N/A**	**N/A**	**N/A**
Will you be covered by an individual or general NPDES permit ?		**General Permit**		

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

Appendix G

TABLE 1. WASTES YOU WILL GENERATE, TREAT AND DOWNHOLE DISPOSE OR DISCHARGE TO THE GOM - MC 519

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

Projected generated waste			Projected ocean discharges		Projected Downhole Disposal
Type of Waste	Composition	Projected Amount	Discharge rate	Discharge Method	Answer yes or no
drilling occur ? If yes, you should list muds and cuttings		Yes			
Water-based drilling fluid	Water based drilling fluids used while drilling riserless	45000 bbls/well	9000 bbls/day/well	discharge at seafloor during riserless operations	No
Cuttings wetted with water-based fluid	Cuttings generated while using water based drilling fluids in riserless operations	2400 bbls/well	480 bbls/day/well	discharge at seafloor during riserless operations	No
Cuttings wetted with synthetic-based fluid	Cuttings generated while using synthetic based drilling fluid	3850 bbls/well	110 bbls/day/well	dried & discharge overboard	No
humans be there? If yes, expect conventional waste					
Domestic waste	grey water from living quarters	9600 bbls/well	240 bbls/hr/well	USCG approved MSD with chlorination and discharge overboard	No
Sanitary waste	treated sanitary waste from living quarters	7680 bbls/well	192 bbls/hr/well	USCG approved MSD with chlorination and discharge overboard	No
ıere a deck? If yes, there will be Deck Drainage					
Deck Drainage	washwater, rain water and deck drainage	11520 bbls/well	288 bbls/hr/well	discharge overboard	No
you conduct well treatment, completion, or workover?					
Well treatment fluids	11.5 Sodium Bromide	N/A	N/A	N/A	N/A
Well completion fluids	Calcium Bromide & Glycol	12,000 bbls	N/A	Completion fluid is recyled from well to well and is not discharged	No
Workover fluids	N/A	N/A	N/A	N/A	N/A
cellaneous discharges. If yes, only fill in those associated with your activity.					
Desalinization unit discharge	desalinization unit water	4000 bbls/well	100 bbls/day/well	discharge overboard	N/A
Blowout prevent fluid	Water-based hydraulic control fluid	62 bbls/well	2 bbls/day/well	discharged from vent ports on BOP stack	NA
Uncontaminated Ballast water	Uncontaminated seawater	160000 bbls/well	4000 bbls/day/well	per MARPOL regulations	NA
Rig Wash Water	Fresh Water & Soap	2000 bbls/well	50 bbls/day/well	discharge overboard	NA
Uncontaminated Bilge water	Uncontaminated bilge water	800 bbls/well	20 bbls/day/well	discharge overboard	NA
Excess cement at seafloor	Water, CaCl Class H cement & rheological modifiers	1600 bbls/well	800 bbls/day for 2 days/well (only when the 22" casing are run)	discharge at seafloor	NA
Cement Spacer	Water base fluid, viscosifier, barite & gel	200 bbls/well	100 bbls/day for 2 days/well (only when the 22" casing are run)	discharge at seafloor	NA
Fire water	Seawater	NA	NA	discharge overboard	NA
Uncontaminated Cooling water	Seawater	NA	NA	discharge overboard	NA
you produce hydrocarbons? If yes fill in for produced water.					
Produced water (During Well Test)	N/A	N/A	N/A	N/A	N/A
you be covered by an individual or general NPDES permit ?		General Permit			
TE: If you will not have a type of waste, enter NA in the row.					

Appendix G

TABLE 1. WASTES YOU WILL GENERATE, TREAT AND DOWNHOLE DISPOSE OR DISCHARGE TO THE GOM - MC 519

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

Projected generated waste			Projected ocean discharges	
Type of Waste	**Composition**	**Projected Amount**	**Discharge rate**	**Discharge Method**
drilling occur ? If yes, you should list muds and cuttings		**Yes**		
Water-based drilling fluid	**Water based drilling fluids used while drilling riserless**	**45000 bbls/well**	**9000 bbls/day/well**	**discharge at seafloor during riserless operations**
Cuttings wetted with water-based fluid	**Cuttings generated while using water based drilling fluids in riserless operations**	**2400 bbls/well**	**480 bbls/day/well**	**discharge at seafloor during riserless operations**
Cuttings wetted with synthetic-based fluid	**Cuttings generated while using synthetic based drilling fluid**	**3850 bbls/well**	**110 bbls/day/well**	**dried & discharge overboard**
humans be there? If yes, expect conventional waste				
Domestic waste	**grey water from living quarters**	**9600 bbls/well**	**240 bbls/hr/well**	**USCG approved MSD with chlorination and discharge overboard**
Sanitary waste	**treated sanitary waste from living quarters**	**7680 bbls/well**	**192 bbls/hr/well**	**USCG approved MSD with chlorination and discharge overboard**
ıere a deck? If yes, there will be Deck Drainage				
Deck Drainage	**washwater, rain water and deck drainage**	**11520 bbls/well**	**288 bbls/hr/well**	**discharge overboard**
you conduct well treatment, completion, or workover?				
Well treatment fluids	**11.5 Sodium Bromide**	**N/A**	**N/A**	**N/A**
Well completion fluids	**Calcium Bromide & Glycol**	**12,000 bbls**	**N/A**	**Completion fluid is recyled from well to well and is not discharged**
Workover fluids	**N/A**	**N/A**	**N/A**	**N/A**
cellaneous discharges. If yes, only fill in those associated with your activity.				
Desalinization unit discharge	**desalinization unit water**	**4000 bbls/well**	**100 bbls/day/well**	**discharge overboard**
Blowout prevent fluid	**Water-based hydraulic control fluid**	**62 bbls/well**	**2 bbls/day/well**	**discharged from vent ports on BOP stack**
Uncontaminated Ballast water	**Uncontaminated seawater**	**160000 bbls/well**	**4000 bbls/day/well**	**per MARPOL regulations**
Rig Wash Water	**Fresh Water & Soap**	**2000 bbls/well**	**50 bbls/day/well**	**discharge overboard**
Uncontaminated Bilge water	**Uncontaminated bilge water**	**800 bbls/well**	**20 bbls/day/well**	**discharge overboard**
Excess cement at seafloor	**Water, CaCl Class H cement & rheological modifiers**	**1600 bbls/well**	**800 bbls/day for 2 days/well (only when the 22" casing are run)**	**discharge at seafloor**
Cement Spacer	**Water base fluid, viscosifier, barite & gel**	**200 bbls/well**	**100 bbls/day for 2 days/well (only when the 22" casing are run)**	**discharge at seafloor**
Fire water	**Seawater**	**NA**	**NA**	**discharge overboard**
Uncontaminated Cooling water	**Seawater**	**NA**	**NA**	**discharge overboard**
you produce hydrocarbons? If yes fill in for produced water.				
Produced water (During Well Test)	**N/A**	**N/A**	**N/A**	**N/A**
you be covered by an individual or general NPDES permit ?		**General Permit**		
TE: If you will not have a type of waste, enter NA in the row.				

Appendix G

TABLE 2. WASTES YOU WILL TRANSPORT AND /OR DISPOSE OF ONSHORE, MC 519

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.					
Oil-based drilling fluid or mud	N/A	N/A	N/A	N/A	N/A
Synthetic-based drilling fluid or mud	Used SBM consisting of base oil (isomerized alpha olefin), barite, CaCl, Acrylate Copolymer, Limestone, Lime, and invert emulsifiers and wetting agent, assuming surface volume only	Below deck storage tanks on offshore support vessels	Mud Supplier Facility, Fourchon, LA	6000 bbls/well	Returned to Mud Supplier Facility in Fourchon and reconditioned for future use
Synthetic-based drilling fluid or mud	Contaminated used synthetic-based drilling fluid	Below deck storage tanks on offshore support vessels	ECOSERV/Fourchon	Varies	Recycle / Injection well
Cuttings wetted with Water-based fluid	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with Synthetic-based fluid	Formation cuttings, SBM Base oil (isomerized alpha olefin), barite, CaCl, Acrylate Copolymer, LCM, Limestone, Lime, and invert emulsifiers and wetting agent contaminated with formation oil	Cuttings boxes on supply vessels	ECOSERV/Fourchon	5000 bbls/well	Recycle / Injection well
Cuttings wetted with oil-based fluids	N/A	N/A	N/A	N/A	N/A
Displacement Pills & Interface	Base oil, barite, water wetting agents, surfactants & viscosifyers	Hull Storage tanks or DOT tanks on supply vessels	R360 Environmental Solutions/Fourchon	500 bbls/well	Recycle / Injection well
Excess Water Base Mud	Freshwater, CaCl, NaCl, Barite, Bentonite, Lime, XCD Polymer	Below deck storage tanks on offshore support vessels	Mud Supplier Facility, Fourchon, LA	10000 bbls/well	Returned to Mud Supplier Facility in Fourchon and reconditioned for future use
Will you produce hydrocarbons? If yes fill in for produced sand.					
Produced sand	N/A	N/A	N/A	N/A	N/A
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.					
Trash and debris	Domestic trash, plastic, paper, aluminum	40 cu ft super sacks transported by boat	Progresso Galliano Waste	800 lbs/week/well	Landfill or recycled and disposed per classification
Contaminated pills & interface	Base oil, barite, water wetting agents, surfactants & viscosifyers, contaminated mud and brine with formation oil	Transport to shore by boat in drums or DOT tanks for disposal at an approved disposal facility	R360 Environmental Solutions/Fourchon	500 bbls/well	Recycle / Injection well
Used oil	Oil	550 gal tote tank transported by boat	Martin Energy/Fourchon	20 bbls/mo/well	Recycle
Wash water from mud tanks	Water, surfactants & solids from mud system if zero discharge	Hull Storage tanks or DOT tanks on supply vessels	R360 Environmental Solutions/Fourchon	1500 bbls/mo/well	Recycle / Injection well
Chemical Product Wastes	Paint & thinner waste	Drums or tote tanks on supply vessels	EDI Environmental Services/ Lafayette LA	10 bbls/mo/well	Recycle
Drums of oily rags & filters	Oily rags and filters impregnated with oil & grease	DOT drums transported by boat	Martin Energy/Fourchon	5 drums/mo/well	Recycle

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

Appendix G

APPENDIX H
AIR EMISSIONS INFORMATION

A) Attached to this appendix are emissions worksheets showing the emissions calculations for the Plan Emissions, and if different, a set of worksheets showing the emissions calculations for the Complex Total emissions.

(A) AQR SCREENING QUESTIONS –

Screen Procedures for DOCD's	Yes	No
Is any calculated Complex Total (CT) Emission amount (tons) associated with your proposed exploration activities more than 90% of the amounts calculated using the following formulas: CT = $3400D^{2/3}$ for CO, and CT = 33.3D for the other air pollutants (where D = distance to shore in miles)?		X
Do your emission calculations include any emission reduction measures or modified emission factors?		X
Are your proposed exploration activities located east of 87.5° W longitude?		X
Do you expect to encounter H_2S at concentrations greater than 20 parts per million (ppm)?		X
Do you propose to flare or vent natural gas for more than 48 continuous hours from any proposed well?		X
Do you propose to burn produced hydrocarbon liquids?		X

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

COMPANY	Talos QN Exploration LLC
AREA	Mississippi Canyon
BLOCK	519
LEASE	OCS-G 27278
FACILITY	N/A
WELL	#005
COMPANY CONTACT	Eric Berger
TELEPHONE NO.	713-907-5910
REMARKS	Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.

AIR EMISSIONS COMPUTATION FACTORS

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

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

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

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

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

Appendix H

AIR EMISSIONS CALCULATIONS - 1ST YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL					CONTACT		PHONE		REMARKS										
Talos QN Exploration LLC	Mississippi Canyon		519	OCS-G 27278	N/A	#005					Eric Berger		713-907-5910		Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.										
OPERATIONS	**EQUIPMENT**	**EQUIPMENT ID**	**RATING**	**MAX. FUEL**	**ACT. FUEL**	**RUN TIME**		**MAXIMUM POUNDS PER HOUR**									**ESTIMATED TONS**								
	Diesel Engines		**HP**	**GAL/HR**	**GAL/D**																				
	Nat. Gas Engines		**HP**	**SCF/HR**	**SCF/D**																				
	Burners		**MMBTU/HR**	**SCF/HR**	**SCF/D**	**HR/D**	**D/YR**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	60	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	31.39	18.94	18.37	0.46	752.10	21.62	0.00	117.97	0.22
	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	0.00	0.00	0.00	0.00	0.00	0.00	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
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
			BPD																						
DRILLING	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
WELL TEST	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		**kW**			**HR/D**	**D/YR**																		
	VESSELS - Ice Management Diesel		0			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
2026	**Facility Total Emissions**							**131.10**	**46.43**	**39.08**	**1,243.13**	**1,219.59**	**33.01**	**0.01**	**207.59**	**7.30**	**33.49**	**19.42**	**18.70**	**30.28**	**756.30**	**21.70**	**0.00**	**119.02**	**0.39**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**2,131.20**			**2,131.20**	**2,131.20**	**2,131.20**		**54,400.00**	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	34	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.09	0.05	0.05	0.00	2.04	0.06	0.00	0.32	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	25	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.05	0.63	0.62	0.02	25.21	0.72	0.00	3.95	0.01
	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 INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			**GAL/HR**	**GAL/D**																				
	Man Camp - Operation (maximum people per day)		**PEOPLE/DAY**																						
	VESSELS		**kW**			**HR/D**	**D/YR**																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	**Non-Facility Total Emissions**							**4.96**	**2.99**	**2.90**	**0.07**	**118.72**	**3.41**	**0.00**	**18.62**	**0.03**	**1.14**	**0.69**	**0.67**	**0.02**	**27.25**	**0.78**	**0.00**	**4.27**	**0.01**

Appendix H

AIR EMISSIONS CALCULATIONS - 2ND YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL					CONTACT		PHONE		REMARKS										
Talos QN Exploration LLC	Mississippi Canyon		519	OCS-G 27278	N/A	#005					Eric Berger		713-907-5910		Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.										
OPERATIONS	**EQUIPMENT**	**EQUIPMENT ID**	**RATING**	**MAX. FUEL**	**ACT. FUEL**	**RUN TIME**		**MAXIMUM POUNDS PER HOUR**									**ESTIMATED TONS**								
	Diesel Engines		**HP**	**GAL/HR**	**GAL/D**																				
	Nat. Gas Engines		**HP**	**SCF/HR**	**SCF/D**																				
	Burners		**MMBTU/HR**	**SCF/HR**	**SCF/D**	**HR/D**	**D/YR**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	75	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	39.24	23.67	22.96	0.57	940.13	27.03	0.00	147.46	0.27
	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	0.00	0.00	0.00	0.00	0.00	0.00	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 INSTALLATION	VESSELS - Heavy Lift Vessel/Lay Barge Diesel		9000	463.014	11112.34	24	14	6.35	3.83	3.72	0.09	152.12	4.37	0.00	23.86	0.04	1.07	0.64	0.62	0.02	25.56	0.73	0.00	4.01	0.01
			BPD																						
DRILLING	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
WELL TEST	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		**kW**			**HR/D**	**D/YR**																		
	VESSELS - Ice Management Diesel		0			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
2027	**Facility Total Emissions**							**137.45**	**50.26**	**42.79**	**1,243.23**	**1,371.71**	**37.38**	**0.01**	**231.45**	**7.35**	**42.41**	**24.80**	**23.91**	**30.41**	**969.89**	**27.84**	**0.00**	**152.52**	**0.45**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**2,131.20**			**2,131.20**	**2,131.20**	**2,131.20**		**54,400.00**	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	40	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.10	0.06	0.06	0.00	2.40	0.07	0.00	0.38	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	30	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.26	0.76	0.74	0.02	30.26	0.87	0.00	4.75	0.01
	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
FACILITY INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			**GAL/HR**	**GAL/D**																				
	Man Camp - Operation (maximum people per day)		**PEOPLE/DAY**																						
	VESSELS		**kW**			**HR/D**	**D/YR**																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	**Non-Facility Total Emissions**							**4.96**	**2.99**	**2.90**	**0.07**	**118.72**	**3.41**	**0.00**	**18.62**	**0.03**	**1.36**	**0.82**	**0.80**	**0.02**	**32.66**	**0.94**	**0.00**	**5.12**	**0.01**

Appendix H

AIR EMISSIONS CALCULATIONS - 3RD YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL					CONTACT		PHONE		REMARKS										
Talos QN Exploration LLC	Mississippi Canyon		519	OCS-G 27278	N/A	#005					Eric Berger		713-907-5910		Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.										
OPERATIONS	**EQUIPMENT**	**EQUIPMENT ID**	**RATING**	**MAX. FUEL**	**ACT. FUEL**	**RUN TIME**		**MAXIMUM POUNDS PER HOUR**									**ESTIMATED TONS**								
	Diesel Engines		**HP**	**GAL/HR**	**GAL/D**																				
	Nat. Gas Engines		**HP**	**SCF/HR**	**SCF/D**																				
	Burners		**MMBTU/HR**	**SCF/HR**	**SCF/D**	**HR/D**	**D/YR**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	75	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	39.24	23.67	22.96	0.57	940.13	27.03	0.00	147.46	0.27
	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	0.00	0.00	0.00	0.00	0.00	0.00	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
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
			BPD																						
DRILLING WELL TEST	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		**kW**			**HR/D**	**D/YR**																		
	VESSELS - Ice Management Diesel		0			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
2028	**Facility Total Emissions**							**131.10**	**46.43**	**39.08**	**1,243.13**	**1,219.59**	**33.01**	**0.01**	**207.59**	**7.30**	**41.34**	**24.16**	**23.29**	**30.39**	**944.33**	**27.10**	**0.00**	**148.51**	**0.44**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**2,131.20**			**2,131.20**	**2,131.20**	**2,131.20**		**54,400.00**	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	40	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.10	0.06	0.06	0.00	2.40	0.07	0.00	0.38	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	30	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.26	0.76	0.74	0.02	30.26	0.87	0.00	4.75	0.01
	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
FACILITY INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			**GAL/HR**	**GAL/D**																				
	Man Camp - Operation (maximum people per day)		**PEOPLE/DAY**																						
	VESSELS		**kW**			**HR/D**	**D/YR**																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	**Non-Facility Total Emissions**							**4.96**	**2.99**	**2.90**	**0.07**	**118.72**	**3.41**	**0.00**	**18.62**	**0.03**	**1.36**	**0.82**	**0.80**	**0.02**	**32.66**	**0.94**	**0.00**	**5.12**	**0.01**

Appendix H

AIR EMISSIONS CALCULATIONS - 4TH YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL					CONTACT		PHONE		REMARKS										
Talos QN Exploration LLC	Mississippi Canyon		519	OCS-G 27278	N/A	#005					Eric Berger		713-907-5910		Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.										
OPERATIONS	**EQUIPMENT**	**EQUIPMENT ID**	**RATING**	**MAX. FUEL**	**ACT. FUEL**	**RUN TIME**		**MAXIMUM POUNDS PER HOUR**									**ESTIMATED TONS**								
	Diesel Engines		**HP**	**GAL/HR**	**GAL/D**																				
	Nat. Gas Engines		**HP**	**SCF/HR**	**SCF/D**																				
	Burners		**MMBTU/HR**	**SCF/HR**	**SCF/D**	**HR/D**	**D/YR**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	75	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	39.24	23.67	22.96	0.57	940.13	27.03	0.00	147.46	0.27
	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	0.00	0.00	0.00	0.00	0.00	0.00	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
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
			BPD																						
DRILLING	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
WELL TEST	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		**kW**			**HR/D**	**D/YR**																		
	VESSELS - Ice Management Diesel		0			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
2029	**Facility Total Emissions**							**131.10**	**46.43**	**39.08**	**1,243.13**	**1,219.59**	**33.01**	**0.01**	**207.59**	**7.30**	**41.34**	**24.16**	**23.29**	**30.39**	**944.33**	**27.10**	**0.00**	**148.51**	**0.44**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**2,131.20**			**2,131.20**	**2,131.20**	**2,131.20**		**54,400.00**	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	40	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.10	0.06	0.06	0.00	2.40	0.07	0.00	0.38	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	30	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.26	0.76	0.74	0.02	30.26	0.87	0.00	4.75	0.01
	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
FACILITY INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			**GAL/HR**	**GAL/D**																				
	Man Camp - Operation (maximum people per day)		**PEOPLE/DAY**																						
	VESSELS		**kW**			**HR/D**	**D/YR**																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	**Non-Facility Total Emissions**							**4.96**	**2.99**	**2.90**	**0.07**	**118.72**	**3.41**	**0.00**	**18.62**	**0.03**	**1.36**	**0.82**	**0.80**	**0.02**	**32.66**	**0.94**	**0.00**	**5.12**	**0.01**

Appendix H

AIR EMISSIONS CALCULATIONS - 5TH YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL					CONTACT		PHONE		REMARKS										
Talos QN Exploration LLC	Mississippi Canyon		519	OCS-G 27278	N/A	#005					Eric Berger		713-907-5910		Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.										
OPERATIONS	**EQUIPMENT**	**EQUIPMENT ID**	**RATING**	**MAX. FUEL**	**ACT. FUEL**	**RUN TIME**		**MAXIMUM POUNDS PER HOUR**									**ESTIMATED TONS**								
	Diesel Engines		**HP**	**GAL/HR**	**GAL/D**																				
	Nat. Gas Engines		**HP**	**SCF/HR**	**SCF/D**																				
	Burners		**MMBTU/HR**	**SCF/HR**	**SCF/D**	**HR/D**	**D/YR**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	75	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	39.24	23.67	22.96	0.57	940.13	27.03	0.00	147.46	0.27
	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	0.00	0.00	0.00	0.00	0.00	0.00	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
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
			BPD																						
DRILLING	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
WELL TEST	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		**kW**			**HR/D**	**D/YR**																		
	VESSELS - Ice Management Diesel		0			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
2030	**Facility Total Emissions**							**131.10**	**46.43**	**39.08**	**1,243.13**	**1,219.59**	**33.01**	**0.01**	**207.59**	**7.30**	**41.34**	**24.16**	**23.29**	**30.39**	**944.33**	**27.10**	**0.00**	**148.51**	**0.44**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**2,131.20**			**2,131.20**	**2,131.20**	**2,131.20**		**54,400.00**	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	40	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.10	0.06	0.06	0.00	2.40	0.07	0.00	0.38	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	30	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.26	0.76	0.74	0.02	30.26	0.87	0.00	4.75	0.01
	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
FACILITY INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			**GAL/HR**	**GAL/D**																				
	Man Camp - Operation (maximum people per day)		**PEOPLE/DAY**																						
	VESSELS		**kW**			**HR/D**	**D/YR**																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	**Non-Facility Total Emissions**							**4.96**	**2.99**	**2.90**	**0.07**	**118.72**	**3.41**	**0.00**	**18.62**	**0.03**	**1.36**	**0.82**	**0.80**	**0.02**	**32.66**	**0.94**	**0.00**	**5.12**	**0.01**

Appendix H

AIR EMISSIONS CALCULATIONS - 6TH YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL						CONTACT		PHONE		REMARKS									
Talos QN Exploration LLC	Mississippi Canyon		519	OCS-G 27278	N/A	#005						Eric Berger		713-907-5910		Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.									
OPERATIONS	**EQUIPMENT**	**EQUIPMENT ID**	**RATING**	**MAX. FUEL**	**ACT. FUEL**	**RUN TIME**		**MAXIMUM POUNDS PER HOUR**									**ESTIMATED TONS**								
	Diesel Engines		**HP**	**GAL/HR**	**GAL/D**																				
	Nat. Gas Engines		**HP**	**SCF/HR**	**SCF/D**																				
	Burners		**MMBTU/HR**	**SCF/HR**	**SCF/D**	**HR/D**	**D/YR**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	75	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	39.24	23.67	22.96	0.57	940.13	27.03	0.00	147.46	0.27
	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	0.00	0.00	0.00	0.00	0.00	0.00	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
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
			BPD																						
DRILLING	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
WELL TEST	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		**kW**			**HR/D**	**D/YR**																		
	VESSELS - Ice Management Diesel		0			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
2031	**Facility Total Emissions**							**131.10**	**46.43**	**39.08**	**1,243.13**	**1,219.59**	**33.01**	**0.01**	**207.59**	**7.30**	**41.34**	**24.16**	**23.29**	**30.39**	**944.33**	**27.10**	**0.00**	**148.51**	**0.44**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**2,131.20**			**2,131.20**	**2,131.20**	**2,131.20**		**54,400.00**	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	40	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.10	0.06	0.06	0.00	2.40	0.07	0.00	0.38	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	30	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.26	0.76	0.74	0.02	30.26	0.87	0.00	4.75	0.01
	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
FACILITY INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			**GAL/HR**	**GAL/D**																				
	Man Camp - Operation (maximum people per day)		**PEOPLE/DAY**																						
	VESSELS		**kW**			**HR/D**	**D/YR**																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2031	**Non-Facility Total Emissions**							**4.96**	**2.99**	**2.90**	**0.07**	**118.72**	**3.41**	**0.00**	**18.62**	**0.03**	**1.36**	**0.82**	**0.80**	**0.02**	**32.66**	**0.94**	**0.00**	**5.12**	**0.01**

Appendix H

AIR EMISSIONS CALCULATIONS - 7TH YEAR

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS
Talos QN Exploration LLC	Mississippi Canyon	519	OCS-G 27278	N/A	#005	Eric Berger	713-907-5910	Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.

OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR									ESTIMATED TONS								
	Diesel Engines		HP	GAL/HR	GAL/D																				
	Nat. Gas Engines		HP	SCF/HR	SCF/D																				
	Burners		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	75	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	39.24	23.67	22.96	0.57	940.13	27.03	0.00	147.46	0.27
	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	0.00	0.00	0.00	0.00	0.00	0.00	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
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
			BPD																						
DRILLING	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
WELL TEST	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		kW			HR/D	D/YR																		
	VESSELS - Ice Management Diesel		0			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
2032	**Facility Total Emissions**							**131.10**	**46.43**	**39.08**	**1,243.13**	**1,219.59**	**33.01**	**0.01**	**207.59**	**7.30**	**41.34**	**24.16**	**23.29**	**30.39**	**944.33**	**27.10**	**0.00**	**148.51**	**0.44**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**2,131.20**			**2,131.20**	**2,131.20**	**2,131.20**		**54,400.00**	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	40	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.10	0.06	0.06	0.00	2.40	0.07	0.00	0.38	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	30	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.26	0.76	0.74	0.02	30.26	0.87	0.00	4.75	0.01
	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
FACILITY INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			GAL/HR	GAL/D																				
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY																						
	VESSELS		kW			HR/D	D/YR																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2032	**Non-Facility Total Emissions**							**4.96**	**2.99**	**2.90**	**0.07**	**118.72**	**3.41**	**0.00**	**18.62**	**0.03**	**1.36**	**0.82**	**0.80**	**0.02**	**32.66**	**0.94**	**0.00**	**5.12**	**0.01**

Appendix H

AIR EMISSIONS CALCULATIONS - 8TH YEAR

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS
Talos QN Exploration LLC	Mississippi Canyon	519	OCS-G 27278	N/A	#005	Eric Berger	713-907-5910	Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.

OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR									ESTIMATED TONS								
	Diesel Engines		HP	GAL/HR	GAL/D																				
	Nat. Gas Engines		HP	SCF/HR	SCF/D																				
	Burners		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	75	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	39.24	23.67	22.96	0.57	940.13	27.03	0.00	147.46	0.27
	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	0.00	0.00	0.00	0.00	0.00	0.00	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
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
			BPD																						
DRILLING	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
WELL TEST	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		kW			HR/D	D/YR																		
	VESSELS - Ice Management Diesel		0			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
2033	**Facility Total Emissions**							**131.10**	**46.43**	**39.08**	**1,243.13**	**1,219.59**	**33.01**	**0.01**	**207.59**	**7.30**	**41.34**	**24.16**	**23.29**	**30.39**	**944.33**	**27.10**	**0.00**	**148.51**	**0.44**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**2,131.20**			**2,131.20**	**2,131.20**	**2,131.20**		**54,400.00**	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	40	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.10	0.06	0.06	0.00	2.40	0.07	0.00	0.38	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	30	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.26	0.76	0.74	0.02	30.26	0.87	0.00	4.75	0.01
	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
FACILITY INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			GAL/HR	GAL/D																				
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY																						
	VESSELS		kW			HR/D	D/YR																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2033	**Non-Facility Total Emissions**							**4.96**	**2.99**	**2.90**	**0.07**	**118.72**	**3.41**	**0.00**	**18.62**	**0.03**	**1.36**	**0.82**	**0.80**	**0.02**	**32.66**	**0.94**	**0.00**	**5.12**	**0.01**

Appendix H

AIR EMISSIONS CALCULATIONS - 9TH YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL					CONTACT		PHONE		REMARKS										
Talos QN Exploration LLC	Mississippi Canyon		519	OCS-G 27278	N/A	#005					Eric Berger		713-907-5910		Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.										
OPERATIONS	**EQUIPMENT**	**EQUIPMENT ID**	**RATING**	**MAX. FUEL**	**ACT. FUEL**	**RUN TIME**		**MAXIMUM POUNDS PER HOUR**									**ESTIMATED TONS**								
	Diesel Engines		**HP**	**GAL/HR**	**GAL/D**																				
	Nat. Gas Engines		**HP**	**SCF/HR**	**SCF/D**																				
	Burners		**MMBTU/HR**	**SCF/HR**	**SCF/D**	**HR/D**	**D/YR**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	75	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	39.24	23.67	22.96	0.57	940.13	27.03	0.00	147.46	0.27
	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	0.00	0.00	0.00	0.00	0.00	0.00	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
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
			BPD																						
DRILLING	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
WELL TEST	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		**kW**			**HR/D**	**D/YR**																		
	VESSELS - Ice Management Diesel		0			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
2034	**Facility Total Emissions**							**131.10**	**46.43**	**39.08**	**1,243.13**	**1,219.59**	**33.01**	**0.01**	**207.59**	**7.30**	**41.34**	**24.16**	**23.29**	**30.39**	**944.33**	**27.10**	**0.00**	**148.51**	**0.44**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**2,131.20**			**2,131.20**	**2,131.20**	**2,131.20**		**54,400.00**	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	40	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.10	0.06	0.06	0.00	2.40	0.07	0.00	0.38	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	30	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.26	0.76	0.74	0.02	30.26	0.87	0.00	4.75	0.01
	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
FACILITY INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			**GAL/HR**	**GAL/D**																				
	Man Camp - Operation (maximum people per day)		**PEOPLE/DAY**																						
	VESSELS		**kW**			**HR/D**	**D/YR**																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2034	**Non-Facility Total Emissions**							**4.96**	**2.99**	**2.90**	**0.07**	**118.72**	**3.41**	**0.00**	**18.62**	**0.03**	**1.36**	**0.82**	**0.80**	**0.02**	**32.66**	**0.94**	**0.00**	**5.12**	**0.01**

Appendix H

AIR EMISSIONS CALCULATIONS - 10TH YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL					CONTACT		PHONE		REMARKS										
Talos QN Exploration LLC	Mississippi Canyon		519	OCS-G 27278	N/A	#005					Eric Berger		713-907-5910		Drilling & completion of Well #005 using drillship or DP Semisubmersible and lease term pipeline installation. This includes potential rig emissions each year to allow for scheduling flexibility.										
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR									ESTIMATED TONS								
	Diesel Engines		HP	GAL/HR	GAL/D																				
	Nat. Gas Engines		HP	SCF/HR	SCF/D																				
	Burners		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	76304.71	24	75	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	39.24	23.67	22.96	0.57	940.13	27.03	0.00	147.46	0.27
	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	0.00	0.00	0.00	0.00	0.00	0.00	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
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
			BPD																						
DRILLING	Liquid Flaring		5000			24	2	87.50	20.13	13.56	1242.50	175.00	2.98	0.01	43.75	7.00	2.10	0.48	0.33	29.82	4.20	0.07	0.00	1.05	0.17
WELL TEST	COMBUSTION FLARE - no smoke			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 - light smoke			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	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	VESSELS		kW			HR/D	D/YR																		
	VESSELS - Ice Management Diesel		0			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
2035	Facility Total Emissions							131.10	46.43	39.08	1,243.13	1,219.59	33.01	0.01	207.59	7.30	41.34	24.16	23.29	30.39	944.33	27.10	0.00	148.51	0.44
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																2,131.20			2,131.20	2,131.20	2,131.20		54,400.00	
	64.0																								
DRILLING	VESSELS- Crew Diesel		394	20.269724	486.47	18	40	0.28	0.17	0.16	0.00	6.66	0.19	0.00	1.04	0.00	0.10	0.06	0.06	0.00	2.40	0.07	0.00	0.38	0.00
	VESSELS - Supply Diesel		6630	341.08698	8186.09	18	30	4.68	2.82	2.74	0.07	112.06	3.22	0.00	17.58	0.03	1.26	0.76	0.74	0.02	30.26	0.87	0.00	4.75	0.01
	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
FACILITY INSTALLATION	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
	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	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	On-Ice Equipment			GAL/HR	GAL/D																				
	Man Camp - Operation (maximum people per day)		PEOPLE/DAY																						
	VESSELS		kW			HR/D	D/YR																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2035	Non-Facility Total Emissions							4.96	2.99	2.90	0.07	118.72	3.41	0.00	18.62	0.03	1.36	0.82	0.80	0.02	32.66	0.94	0.00	5.12	0.01

Appendix H

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	
Talos QN Exploration LLC	519	OCS-G 27278	N/A	N/A	#005	

Year	Facility Emitted Substance								
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
2026	33.49	19.42	18.70	30.28	756.30	21.70	0.00	119.02	0.39
2027	42.41	24.80	23.91	30.41	969.89	27.84	0.00	152.52	0.45
2028	41.34	24.16	23.29	30.39	944.33	27.10	0.00	148.51	0.44
2029	41.34	24.16	23.29	30.39	944.33	27.10	0.00	148.51	0.44
2030	41.34	24.16	23.29	30.39	944.33	27.10	0.00	148.51	0.44
2031	41.34	24.16	23.29	30.39	944.33	27.10	0.00	148.51	0.44
2032	41.34	24.16	23.29	30.39	944.33	27.10	0.00	148.51	0.44
2033	41.34	24.16	23.29	30.39	944.33	27.10	0.00	148.51	0.44
2034	41.34	24.16	23.29	30.39	944.33	27.10	0.00	148.51	0.44
2035	41.34	24.16	23.29	30.39	944.33	27.10	0.00	148.51	0.44
Allowable	2131.20			2131.20	2131.20	2131.20		54400.00	

APPENDIX I
OIL SPILLS INFORMATION

A) OIL SPILL RESPONSE PLANNING

Pursuant to CFR 250.219 and NTL BOEM 2015-N01, this appendix provides information regarding any potential oil spill(s), the assumptions and calculations used to determine the worst case discharge (WCD) measures scenario.

Below is a reference to and status of Talos QN Exploration LLC's Regional OSRP. A site specific OSRP nor a subregional OSRP is not required with this plan, as the State of Florida is not an affected State for the activities proposed herein.

1) REGIONAL OR SUBREGIONAL OSRP INFORMATION

All of the proposed activities and facilities in this Plan will be covered by the Regional Oil Spill Response Plan filed by Talos Production Inc. (BOEM Company No. 03283) in accordance with 30 CFR 254 and approved on August 1, 2024, OSRP Control No. O-1082. By letter dated December 18, 2024, the update was found to be in compliance. BSEE acknowledged that the following operators are covered under this OSRP:
Talos ERT LLC (02899)
Talos Petroleum LLC (01834)
Talos Energy Offshore LLC (03247)
Talos Energy Ventures, LLC (03026)Talos Oil and Gas LLC (03269)
Talos Third Coast LLC (03619)
Talos Gulf Coast Onshore, LLC (22691)
Talos Gulf Coast Offshore LLC (03201)
Talos QN Exploration LLC (03672)

2) SPILL RESPONSE SITES

The table below provides information on the location of the primary spill response equipment and the location of the planned staging area(s) that would be used should an oil spill occur resulting from the activities proposed herein.

Primary Response Equipment Location	Pre-planned Staging Location
Houma, LA; Harvey, LA; Leeville, LA	Houma, LA; Harvey, LA; Leeville, LA; Fourchon, LA

3) OIL SPILL REMOVAL ORGANIZATION (OSRO) INFORMATION

Talos' primary equipment provider is Clean Gulf Association (CGA). The Marine Spill Response Corporation's (MSRC) STARS network will closest available personnel, as well as a MSRC supervisor to operate the equipment. CGA and MSRC have equipment pre-staged around the Gulf of Mexico. The major locations of this equipment are Lake Charles, Houma, Fort Jackson, and Venice, Louisiana; Galveston and Ingleside, Texas; and Pascagoula, Mississippi.

4) WORST CASE SCENARIO COMPARISON

The table below provides a comparison of the worst-case discharge scenario from the above referenced Regional OSRP with the worst-case scenario from the activities proposed herein. Please note the Regional OSRP distance to shore scenarios are approximate and will be updated as required with modifications to the OSRP. The distance to shore for the proposed activities is accurate and based on survey data.

Worst Case Discharge Comparison Chart				
Category	**DRILLING**		**PRODUCTION**	
	REGIONAL OSRP WCD	DOCD WCD CURRENT PLAN	REGIONAL OSRP WCD	DOCD WCD CURRENT PLAN
Type of Activity	EXPLORATORY WELL	DOCD WCD	Production > 10 miles from shore	DOCD WCD
Facility Location (Area/Block)	GC 39	MC 519	GC 200	MC 519
Facility Designation	Katmai West #2	Well R	TA009	005
Distance to Shore (miles)	73	66	88	66

Worst Case Discharge Comparison Chart				
Category	**DRILLING**		**PRODUCTION**	
	REGIONAL OSRP WCD	DOCD WCD CURRENT PLAN	REGIONAL OSRP WCD	DOCD WCD CURRENT PLAN
Type of Activity	EXPLORATORY WELL	DOCD WCD	Production > 10 miles from shore	DOCD WCD
Volume				
Flowlines (on facility)				
Lease Term Pipelines				
Uncontrolled Blowout	421050.00	10521.00	54689.00	14888.00
Storage				7551.00
Total Volume	**421050.00**	**10521.00**	**54689.00**	**22439.00**
Type of Oil(s) (crude, condensate, diesel)	Crude	Crude	Crude	Crude
API Gravity	37.9		24.9	23.5

The WCD volume/numbers shown above were reviewed/cleared under Plan S-7934. The WCD volume for Plan S-7934 is higher that the volume for the activities proposed herein.

Since Talos QN Exploration LLC has the capacity to respond to the worst case spill scenario included in our Regional OSRP approved on May 4, 2017 and determined in compliance December 18, 2024, and since the worst case scenario determined for our Plan does not replace the worst case scenario in our Regional
OSRP, Talos hereby certifies that we have the capacity to respond, to the maximum extent practicable, to a worst case discharge, or substantial threat of such a discharge, resulting from the activities proposed in this Plan.

5) WORST CASE DISCHARGE SCENARIOS AND ASSUMPTIONS

Provided in the attachments of the Proprietary Copy of this plan are Worst Case Discharge Volume Calculations and Assumptions for the activities proposed in this plan.

6) OIL SPILL RESPONSE DISCUSSION

Attached to this appendix is an Oil Spill Response Discussion for the activities proposed in this Plan.

SPILL RESPONSE DISCUSSION

For the purpose of NEPA and Coastal Zone Management Act analysis, the largest spill volume originating from the proposed activity would be a well blowout during drilling operations, estimated to be 10,521 barrels of crude oil with an API gravity of 23.2°.

Land Segment and Resource Identification

Trajectories of a spill and the probability of it impacting a land segment have been projected utilizing information in the BOEM Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf available on the BOEM website. The results are shown in **Figure 1.** The BOEM OSRAM identifies an 8% probability of impact to the shorelines of Plaquemines Parish, Louisiana within 30 days. Plaquemines Parish includes Barataria Bay, the Mississippi River Delta, Breton Sound and the affiliated islands and bays. This region is an extremely sensitive habitat and serves as a migratory, breeding, feeding and nursery habitat for numerous species of wildlife. Beaches in this area vary in grain particle size and can be classified as fine sand, shell or perched shell beaches. Sandy and muddy tidal flats are also abundant.

Response

Talos will make every effort to respond to the Worst Case Discharge as effectively as practicable. A description of the response equipment under contract to contain and recover the Worst Case Discharge is shown in **Figure 2.**

Using the estimated chemical and physical characteristics of crude oil, an ADIOS weathering model was run on a similar product from the ADIOS oil database.

Natural Weathering Data: MC 519, Well #005	**Barrels of Oil**
WCD Volume	10,521
Less 20% natural evaporation/dispersion	2,104
Remaining volume	8,417

Figure 2 outlines equipment, personnel, materials and support vessels as well as temporary storage equipment available to respond to the worst case discharge. The volume accounts for the amount remaining after evaporation/dispersion at 24 hours. The list estimates individual times needed for procurement, load out, travel time to the site and deployment. **Figure 2** also indicates how operations will be supported. Please note that **Figure 2** is a list of contractually available equipment, which may be called out in the event of an exercise or spill. However, operations and specific equipment are situationally dependent and may change according to product specifications, weather, and environmental conditions, etc.

Appendix I

Talos's Oil Spill Response Plan includes alternative response technologies such as dispersants and in-situ burn. Strategies will be decided by Unified Command based on an operations safety analysis, the size of the spill, weather and potential impacts. If aerial dispersants are utilized, 4 sorties (4,800 gallons) from two of the DC-3 aircrafts and 4 sorties (8,000 gallons) from the Basler aircraft would provide a daily dispersant capability. If the conditions are favorable for in-situ burning, the proper approvals have been obtained and the proper planning is in place, in-situ burning of oil may be attempted. Slick containment boom would be immediately called out and on-scene as soon as possible. Offshore response strategies may include attempting to skim utilizing CGA's spill response equipment with a total derated skimming capacity of 122,055 barrels. Temporary storage associated with skimming equipment equals 4,498 barrels. If additional storage is needed, various tank barges with a total of 130,000 barrels of storage capacity may be mobilized and centrally located to provide temporary storage and minimize off-loading time. Additionally, CGA works with the member company's Incident Management Team (IMT), specifically the marine logistics group within the logistics section, to identify and procure Offshore Supply Vessels (PSV/OSV) capable of providing temporary offshore storage to the initial mechanical recovery assets within 12-24 hours, ensuring that devices for the storage of recovered oil are sufficient to allow containment and recovery operations to continue without interruption. If needed, CGA can leverage an internal CGA membership vessel sharing agreement to help locate available Petroleum Industry Dedicated Vessels (PIDV). All OSVs can provide between 20% - 100% of their deadweight in recovered oil storage (4k – 30k bbls) based on the vessel's Certificate of Inspection (COI). **Safety is first priority. Air monitoring will be accomplished and operations deemed safe prior to any containment/skimming attempts.**

If the spill went unabated, shoreline impact in Plaquemines Parish, Louisiana would depend upon existing environmental conditions. Shoreline protection would include the use of CGA's shoreline, near shore and shallow water skimmers with a totaled derated skimming capacity of 15,997 barrels. Temporary storage associated with skimming equipment equals 638 barrels. If additional storage is needed, one tank barge with a total storage capacity of 35,000 barrels may be mobilized and centrally located to provide temporary storage and minimize off-loading time. Onshore response may include the deployment of shoreline boom on beach areas, or protection and sorbent boom on vegetated areas. A Letter of Intent from E3 OMI will ensure access to 140,700 feet of 18" shoreline protection boom. **Figure 2** outlines individual times needed for procurement, load out, travel time to the site and deployment. Strategies would be based upon surveillance and real time trajectories that depict areas of potential impact given actual sea and weather conditions. Applicable Area Contingency Plans (ACPs), Geographic Response Plans (GRPs), and Unified Command (UC) will be consulted to ensure that environmental and special economic resources are correctly identified and prioritized to ensure optimal protection. Shoreline protection strategies depict the protection response modes applicable for oil spill clean-up operations. The UC should take into consideration all appropriate items detailed in Tactics discussion of this Appendix. The UC and their personnel have the option to modify the deployment and operation of equipment to allow for a more effective response to site-specific

circumstances. Talos's contract Incident Management Team has access to the applicable ACP(s) and GRP(s).

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

Initial Response Considerations

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

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

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

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

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

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

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

Offshore Response Actions

Equipment Deployment

Surveillance

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

Dispersant application assets

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

Containment boom

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

Oceangoing Boom Barge

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

In-situ Burn assets

- Determine appropriateness of in-situ burn operation in coordination with the FOSC and affected SOSC
- Determine availability of fire boom and selected ignition systems
- Start ordering fire boom stocks required for expected operations
- Contact boom manufacturer to provide training & tech support for operations, if required
- Determine assets to perform on water operation

- Build operations into safety plan
- Conduct operations in accordance with an approved plan
- Initial test burn to ensure effectiveness

Dedicated offshore skimming systems
General

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

CGA HOSS Barge

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

CGA 95' Fast Response Vessels (FRVs)

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

CGA FRUs

- To the area of the thickest oil
- Use as far offshore as allowed

T&T Koseq Skimming Systems

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

Storage Vessels

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

Vessels of Opportunity (VOO)

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

Adverse Weather Operations:

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

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

Maximization of skimmer-oil encounter rate

- Place barges in skimming task forces, groups, etc., to reduce recovered oil offloading time
- Place barges alongside skimming systems for immediate offloading of recovered oil when practicable

- Use two vessels, each with heavy sea boom, in an open-ended "V" configuration to funnel surface oil into a trailing skimming unit's organic, V-shaped boom and skimmer (see page 7, *CGA Equipment Guide Book and Tactic Manual* (CGATM)
- Use secondary vessels and heavy sea boom to widen boom swath beyond normal skimming system limits (see page 15, CGATM)
- Consider night-time operations, first considering safety issues
- Utilize all available advanced technology systems (IR, X-Band Radar, etc.) to determine the location of, and move to, recoverable oil
- Confirm the presence of recoverable oil prior to moving to a new location

Maximize skimmer system efficiency

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

Recovered Oil Storage

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

Command, Control, and Communications (C^3)

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

CGA Minimum Acceptable Capabilities for Vessels of Opportunity (VOO)

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

Capability	FRU	KOSEQ	AquaGuard
Type of Vessel	Utility Boat/ Offshore Supply Vessel	Offshore Supply Vessel	Utility Boat
Operating parameters			
Sea State	2-4 ft max	9.8 ft max	3-5 ft max
Skimming speed	≤1 kt	≤3 kts	≤1 kt
Vessel size			
Minimum Length	100-165 ft	200 ft	100 ft
Deck space for: • Tank(s) • Crane(s) • Boom Reels • Hydraulic Power Units • Equipment Boxes	18x32 ft	100x40 ft	18x32 ft
Communication Assets	Marine Band Radio	Marine Band Radio	Marine Band Radio

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

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

The Fast Response Unit (FRU): The 502 FRU is designed to provide an advancing fast response skimming capability in the offshore and nearshore environment. To tow the FRU alongside the vessel, the rigid sweeping arm is connected to the ship by a tow line to a bow bollard or forward

bit. The range and sustainability offshore are determined by the PIDV the unit is placed on, but generally can stay offshore for extended periods. The FRU works well independently or assigned in a task force with other skimming assets and is more efficient when UAS or aircraft are assigned to direct into recoverable oil

Maximum Sea Conditions – Under most circumstances the FRU can maintain standard oil spill recovery operations in 2' to 4' seas. Ultimately, the Coast Guard licensed Captain in charge of the VOO (with input from the CGAS Supervisor assigned) will be responsible to determine when the sea conditions have surpassed the vessel's safe operating capabilities.

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

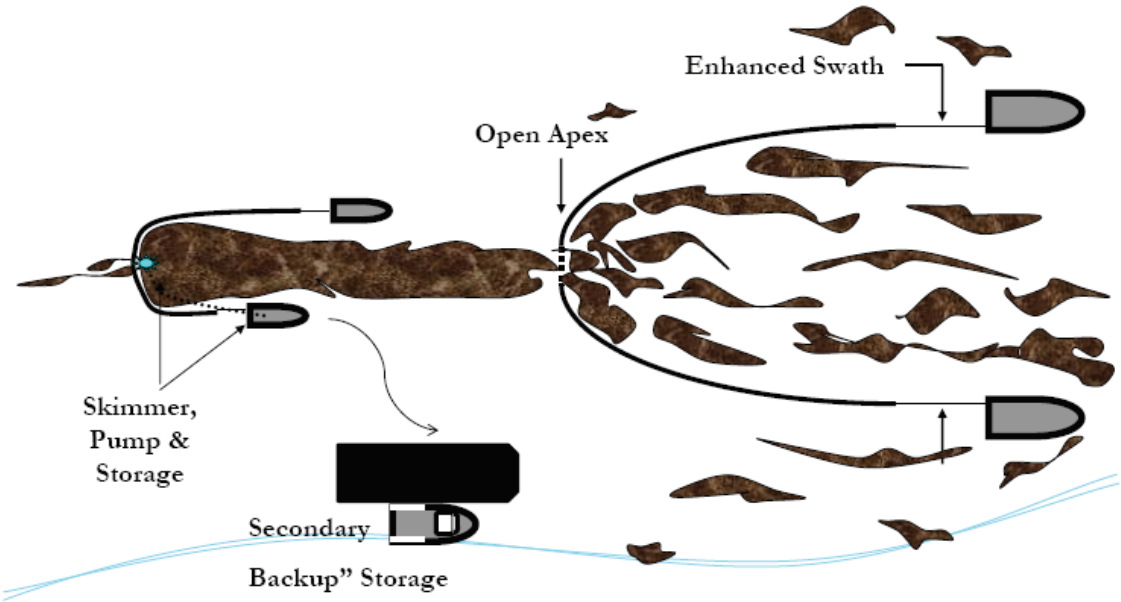
Tactical Overview

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

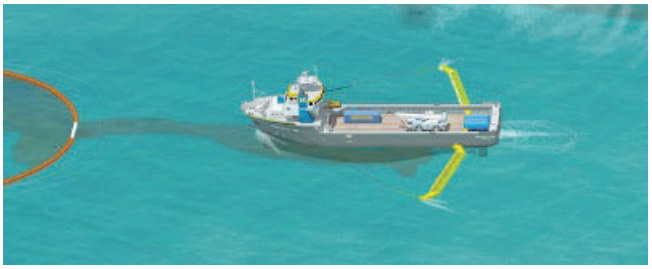
Maximum Sea Conditions - Under most circumstances the larger OSVs are capable of remaining on scene well past the Skimming Arms maximum sea state of 9.8'. Ultimately it will be the decision of the VOO Captain, with input from the T&T Supervisor onboard, to determine when the sea conditions have exceeded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

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

Possible Task Force Configuration (Multiple Koseq VOOs can be deployed in a task force)
1 – ≥ 200' Offshore Supply Vessels (OSV) with set of Koseq Arms
2 to 4 portable storage tanks (500 bbl)
1 – Modular Crane Pedestal System set (MCPS) or 30 cherry picker (crane) for deployment
1 – Tank barge (offshore) for temporary storage
1 – Utility/Crewboat (supply)
1 – Designated spotter aircraft
4 – Personnel (4 T&T OSRO)



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



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

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

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

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

Near Shore Response Actions

Timing

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

Considerations

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

Surveillance

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

Dispersant Use

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

Dedicated Near Shore skimming systems

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

VOO

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

Appendix I

Shoreline Protection Operations

Response Planning Considerations

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

Placement of boom

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

Beach Preparation - Considerations and Actions

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

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

Inland and Coastal Marsh Protection and Response Considerations and Actions

- All considered response methods will be weighed against the possible damage they may do to the marsh. Methods will be approved by the Unified Command only after discussions with local Stakeholder, as identified above.
    - In-situ burn may be considered when marshes have been impacted
- Passive cleanup of marshes should be considered and appropriate stocks of sorbent boom and/or sweep obtained.
- Response personnel must be briefed on methods to traverse the marsh, i.e.,

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

Decanting Strategy

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

CGA Equipment Limitations

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

Boom	3 foot seas, 20 knot winds
Dispersants	Winds more than 25 knots Visibility less than 3 nautical miles Ceiling less than 1,000 feet.
FRU	2-4 foot seas
HOSS Barge/OSRB	7 foot seas
Koseq Arms	8 foot seas
OSRV	3-5 foot seas

Environmental Conditions in the Gulf

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

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

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

FIGURE 1
TRAJECTORY BY LAND SEGMENT

Trajectory of a spill and the probability of it impacting a land segment have been projected utilizing Talos's WCD and information in the BOEM Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf available on the BOEM website using 30 day impact. The results are tabulated below.

Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%)
MC 519, Well #005 *64 miles from shore*	G27278	C58	Galveston, TX Jefferson, TX Cameron, LA Vermilion, LA Iberia, LA Terrebonne, LA Lafourche, LA Jefferson, LA **Plaquemines, LA** St. Bernard, LA Okaloosa, FL	1 1 3 2 1 3 3 1 **8** 1 1

WCD Scenario– <u>BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS</u> (64 miles from shore)
8,417 bbls of crude oil (Volume considering natural weathering)
API Gravity 23.2°

FIGURE 2 – Equipment Response Time to MC 519, Well #005

Dispersants/Surveillance

Dispersant/Surveillance	Dispersant Capacity (gal)	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to site	Total Hrs
ASI							
Basler 67T	2000	2	Houma	2	2	0.6	4.8
DC 3	1200	2	Houma	2	2	0.8	5.1
Aero Commander	NA	2	Houma	2	2	0.6	4.8

Offshore Response

Offshore Equipment Pre-Determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to Gulf	Travel to Spill Site	Hrs to Deploy	Total Hrs
CGA											
HOSS Barge	76285	4000	3 Tugs	8	Harvey	6	0	10	8	2	26
95' FRV	22885	249	NA	6	Leeville	2	0	2	2	1	7
95' FRV	22885	249	NA	6	Venice	2	0	2	2	1	7
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	8	0	4	8	2	22

Recovered Oil Storage Pre-Determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to Gulf	Travel to Spill Site	Hrs to Deploy	Total Hrs
Genesis Marine (Available through contract with CGA)											
GM 6506	NA	65000	1 Tug	6	New Orleans	24	12	0	12	0	48
GM 6507	NA	65000	1 Tug	6	New Orleans	24	12	0	12	0	48

Staging Area: Venice

Offshore Equipment Preferred Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Site	Hrs to Deploy	Total Hrs
CGA											
Hydro-Fire Boom	NA	NA	8 Utility	40	Harvey	0	24	2	5	6	37

Appendix I

Nearshore Response

Nearshore Equipment Pre-determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to Gulf	Travel to Spill Site	Hrs to Deploy	Total Hrs
Kirby Offshore (Available through contract with CGA)											
Chesapeake	NA	35000	1 Tug	6	New Orleans	24	12	0	6	0	42

Staging Area: Venice

Nearshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Load Out	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
CGA											
SWS Marco	3588	20	NA	3	Vermilion	2	2	8	2	1	15
SWS Marco	3588	34	NA	3	Leeville	2	2	4.5	2	1	11.5
SWS Marco	3588	34	NA	3	Venice	2	2	2	2	1	9
Foilex Skim Package (TDS 150)	1131	50	NA	3	Vermilion	4	12	8	2	2	28
Foilex Skim Package (TDS 150)	1131	50	NA	3	Galveston	4	12	13	2	2	33
Foilex Skim Package (TDS 150)	1131	50	NA	3	Harvey	4	12	2	2	2	22
4 Drum Skimmer (Magnum	680	100	1 Crew	3	Vermilion	2	2	8	2	1	15
4 Drum Skimmer (Magnum	680	100	1 Crew	3	Harvey	2	2	2	2	1	9
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Vermilion	2	2	8	2	1	15
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Harvey	2	2	2	2	1	9

Shoreline Protection

Shoreline Protection Boom	VOO	Persons Req.	Storage/Warehouse Location	Hrs to Procure	Hrs to Loadout	Travel to Venice	Travel to Deployment Site	Hrs to Deploy	Total Hrs
E3 OMI (available through Letter of Intent)									
11,500' 18" Boom	5 Crew	10	Lake Charles, LA	1	1	8	2	3	15
2,000' 18" Boom	1 Crew	2	Shreveport, LA	1	1	12	2	3	19
9,600' 18" Boom	5 Crew	10	Baton Rouge, LA	1	1	5	2	3	12
12,800' 18" Boom	6 Crew	12	Lafayette, LA	1	1	6	2	3	13
4,200' 18" Boom	2 Crew	4	New Orleans, LA	1	1	2	2	3	9
53,600' 18" Boom	24 Crew	72	Jackson, MS	1	1	7.5	2	3	14.5
14,000' 18" Boom	6 Crew	12	Mobile, AL	1	1	6	2	3	13
4,000' 18" Boom	2 Crew	4	Pensacola, FL	1	1	8	2	3	15
5,000' 18" Boom	3 Crew	6	Deer Park, TX	1	1	12	2	3	19
12,000' 18" Boom	6 Crew	12	La Marque, TX	1	1	13	2	3	20
12,000' 18" Boom	6 Crew	12	Port Arthur, TX	1	1	10	2	3	17

Wildlife Response	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
CGA											
Wildlife Support Trailer	NA	NA	NA	2	Harvey	2	2	3	1	2	10
Bird Scare Guns (24)	NA	NA	NA	2	Harvey	2	2	3	1	2	10
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	2	2	12	1	2	19
Bird Scare Guns (12)	NA	NA	NA	2	Aransas Pass	2	2	16.5	1	2	23.5
Bird Scare Guns (24)	NA	NA	NA	2	Lake Charles	2	2	7	1	2	14
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	2	1	2	9

Response Asset	Total (bbls)
Offshore EDRC	122,055
Offshore Recovered Oil Storage	134,498
Nearshore / Shallow Water EDRC	15,997
Nearshore / Shallow Water Recovered Oil Storage	35,638

APPENDIX J
ENVIRONMENTAL MONITORING INFORMATION

A) MONITORING SYSTEMS

The proposed drilling units are equipped with Acoustic Doppler Current Profile (ADCP) monitoring equipment. Data from these meters are reported to the National Data Buoy Center website.

B) INCIDENTAL TAKES

There is no reason to believe that any of the endangered species or marine mammals as listed in the ESA will be "taken" as a result of the operations proposed under this plan.To date, 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. Operations in this plan will also not be utilizing pile driving. The pipeline proposed in this plan will not be making landfall.

Talos QN Exploration LLC will adhere to the requirements as set forth in the following Notices to Lessees and guidelines, as applicable, to avoid or minimize impacts to any of the species listed in the ESA as a result of the operations conducted herein:

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

2020 Biological Opinion:

- Appendix A: Seismic Survey Mitigation and Protected Species Observer Protocols, found in the Biological Opinion issued by the NAtional Marine Fisheries Service on March 13, 2020
- Appendix B: Gulf of Mexico Marine Trash and Debris Awareness and Elimination Survey Protocols, found in the Biological Opinion issued by the National Marine Fisheries Service on March 13, 2020
- Appendix C: Gulf of Mexico Vessel STrike Avoidance and Injured/Dead Aquatic Protected Species Reporting Protocols, found in the Biological Opinion issued by the National Marine Fisheries Service on March 13, 2020
- Appendix J: Sea Turtle Handling and Resuscitation Guidelines, found in the Biological Opinion issued by the National Marine Fisheries Services on March 13, 2020

C) FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the subject area and block(s) are not located within the Protective Zones of the Flower Garden Banks and Stetson Bank.

APPENDIX K
LEASE STIPULATIONS INFORMATION

A) Lease stipulations are developed and implemented on a sale by sale basis and are applied to individual leases based on specific instructions in the applicable Final Notice of Sale Package. Stipulations place restrictions and operating requirements on lessees. This may involve protection of environmentally sensitive organisms or communities that exist in the area covered by the lease, conflicts with other uses such as military operations, LNG or sand extraction. The activities proposed herein are subject to the following stipulations attached to the subject lease(s).

As per Lease Sale 194 Final Notice of Sale Stipulations, Stipulations No. 6 to the MC519 lease.

Stipulation No. 6: Protected Species The Endangered Species Act (16 U.S.C. §§ 1531 et seq.) and the Marine Mammal Protection Act (16 U.S.C. §§ 1361 et seq.) are designed to protect threatened and endangered species and marine mammals and apply to activities authorized under the Outer Continental Shelf Lands Act (OCSLA, 43 U.S.C. §§ 1331 et seq.). The Congressional Declaration of Policy included in OCSLA provides that it is the policy of the United States that the OCS should be made available for expeditious and orderly development, subject to environmental safeguards, in a manner that is consistent with the maintenance of competition and other national needs (see 43 U.S.C. § 1332). Both the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) comply with these laws on the OCS.

The lessee and its operators must:
Comply with the Reasonable and Prudent Measures and implementing Terms and Conditions of the Biological Opinion issued by the National Marine Fisheries Service (NMFS) on March 13, 2020 (2020 NMFS BiOp), as amended. This includes mitigation, particularly any appendices to Terms and Conditions applicable to the activity, as well as record-keeping and reporting sufficient to allow BOEM and BSEE to comply with reporting and monitoring requirements under the BiOp; and any additional reporting required by BOEM or BSEE developed as a result of implementation of the 2020 NMFS BiOp and 2021 Amended Incidental Take Statement (ITS) and Revised Appendices.

-The 2020 NMFS BiOp may be found here:https://www.fisheries.noaa.gov/resource/document/biological-opinion-federally-regulated-oil-and-gas-program-activities-gulf-mexico.

-The Appendices and protocols may be found here:https://www.fisheries.noaa.gov/resource/document/appendices-biological-opinion-federally-regulated-oil-and-gas-program-gulf-mexico.

-The 2021 Amended ITS and Revised Appendices are found here:https://www.fisheries.noaa.gov/resource/document/amended-incidental-take-statement-and-revised-appendices.

Immediately report all sightings and locations of injured or dead protected species(e.g., marine mammals and sea turtles) to the appropriate hotlines listed athttps://www.fisheries.noaa.gov/report (phone numbers vary by state), as required in the 2020 NMFS BiOp and 2021 Revised Appendix C. If oil and gas industry activity is responsible for the injured or dead animal (e.g., injury or death was caused by a vessel strike, entrapment or entanglement), the responsible parties must notify BOEM and BSEE within 24 hours of the strike or entanglement/entrapment by email to protectedspecies@boem.gov and protectedspecies@bsee.gov, respectively. Unless previously approved by BOEM or BSEE through a plan or permit issued nder this lease, notify BOEM at least 15 days prior to any proposed vessel transit of the Bryde's Whale area, and receive prior approval for that transit from BOEM. The Bryde’s whale area, as described in the 2020 NMFS BiOp, includes the area from 100- to 400-meter isobaths from 87.5° W to 27.5° N as described in the status review (Rosel, 2016), plus an additional 10 kilometers around that area. 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 the following Appendices of the 2020 NMFS BiOp and 2021 Amended ITS and Revised Appendices: -Appendix A: “Seismic Survey Mitigation and Protected Species Observer Protocols”

-Appendix B: “Gulf of Mexico Marine Trash and Debris Awareness and Elimination Survey Protocols”

-Appendix C: “Vessel Strike Avoidance and Injured/Dead Aquatic Protected Species Reporting Protocols”

-Appendix I: “Explosive Removal of Structure Measures”

-Appendix J: “Sea Turtle Handling and Resuscitation Guidelines”

Certain post-lease approvals (e.g., for activities proposing new and unusual technologies, certain seismic surveys) will require a step-down review by NMFS, as provided by the 2020 NMFS BiOp and 2021 Amended ITS, and additional mitigations to protect ESA-listed species may be applied at that time. 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 2020 NMFS BiOp, the 2021 ITS, and Appendices, or through new or activity-specific consultations. The most current applicable terms and conditions and reasonable and prudent measures from the 2020 NMFS BiOp, 2021 Amended ITS and Appendices or other relevant consultations will be applied to post-lease approvals. The lessee and its operators, personnel, and subcontractors will be required to comply with the mitigation measures identified in the above referenced 2020 NMFS BiOp and 2021 Amended ITS (including the Appendices), and additional measures in the conditions of approvals for their plans or permits.

APPENDIX L
ENVIRONMENTAL MITIGATION MEASURES INFORMATION

A) MEASURES TAKEN TO AVOID, MINIMIZE, AND MITIGATE IMPACTS

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the State of Florida is not an affected State.

B) INCIDENTAL TAKES

Talos QN Exploration LLC will adhere to the requirements as set forth in the following Notices to Lessees, as applicable, to avoid or minimize impacts to any of the species listed in the ESA as a result of the operations conducted herein:NTL 2015-G03 "Marine Trash and Debris Awareness and Elimination"BOEM NTL 2016-G01 "Vessel Strike Avoidance and Injured/ Dead Protected Species Reporting"BOEM NTL 2016-G02 "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program"Biological Opinion 2020:Appendix A: Seismic Survey Mitigation and Protected Species Observer Protocols, found in the Biological Opinion issued by the NAtional Marine Fisheries Service on March 13, 2020Appendix B: Gulf of Mexico Marine Trash and Debris Awareness and Elimination Survey Protocols, found in the Biological Opinion issued by the National Marine Fisheries Service on March 13, 2020Appendix C: Gulf of Mexico Vessel STrike Avoidance and Injured/Dead Aquatic Protected Species Reporting Protocols, found in the Biological Opinion issued by the National Marine Fisheries Service on March 13, 2020Appendix J: Sea Turtle Handling and Resuscitation Guidelines, found in the Biological Opinion issued by the National Marine Fisheries Services on March 13, 2020
Note: The proposed operations will not utilize a casing hammer to drive pipe. Talos does not propose any new pipelines that will make landfall.

Talos will utilize a Drilling Rig with a typical moonpool that is used in all Deepwater Dynamically Positioned Drillships and Semi-submersibles. The moonpool is located on or about the center of the rig. The moonpool's purpose is to allow access to the water level to drill, complete and workover wells. This also allows access to run the Blowout Preventers, Marine Riser and ancillary equipment to the seafloor. There is no closing mechanism for the moonpool area as it is always open to the sea.

In the extremely rare instance that marine life would get entrapped or entangled by equipment in the moonpool, or by any other equipment on the rig, below are mitigations that will be put in place to protect the marine life in case of an incident:

- Talos will provide a dedicated crew member to survey the moonpool area for marine life while moving any equipment in or out of that area.
- If marine life is detected in the moonpool area, we will cease all operations until it is free and clear.
- Monitor video from the camera(s) that is focused on the moonpool area.
- If endangered marine life is seen in the area, a live video feed can be streamed real-time for additional coverage.
- If marine life is entrapped or entangled, we can safely lower someone into the moonpool to free it.

APPENDIX M
RELATED FACILITIES & OPERATIONS INFORMATION

A) RELATED OCS FACILITIES AND OPERATIONS

The subject wells will be protected by a subsea wellhead. A 6-inch bulk oil, lease-term (jumper) pipeline up to 10,000 feet in length will be installed to transport produced hydrocarbons from each subsea well to the existing PLEM in Mississippi Canyon Block 519.

Talos anticipates installing minimal processing equipment on this structure. All hydrocarbon handling equipment installed for testing and production operations will be designed, installed and operated to prevent pollution.

B) TRANSPORTATION SYSTEM

An existing ROW pipeline will transport produced hydrocarbons to the existing A-NaKika FPDS in Mississippi Canyon Block 474. No new nearshore or onshore pipelines or facilities will be constructed.

C) PRODUCED LIQUID HYDROCARBONS TRANSPORTATION VESSELS

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as no new production is being proposed for transport nor is existing production transporting methods being modified.

APPENDIX N
SUPPORT VESSELS AND AIRCRAFT INFORMATION

A) GENERAL

The most practical and direct route from the shorebase as permitted by weather and traffic conditions will be utilized. The table below provides information on vessels and aircraft that will be used to support the proposed activities.

Type	Maximun Fuel Tank Capacity	Maximun Number in Area at Any Time	Trip Frequency or Duration
Supply Boat	6630 bbls	2	3 trips per week
Crew Boat	394 bbls	1	4 trips per week
Helicopter	260 gallons	1	3 trips per week

B) DIESEL OIL SUPPLY VESSELS

The table below provides information on the vessels that will be used to supply diesel oil. It also includes all vessels that will transfer diesel oil that will be used for purposes other than fuel.

Size of Fuel Supply Vessel	Capacity of Fuel Supply Vessel	Frequency of Fuel Transfers	Route Fuel Supply Vessel Will Take
320 feet	6,000 bbls	Weekly	Most direct route from shorebase

C) DRILLING FLUID TRANSPORTATION

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the State of Florida is not an affected State.

D) SOLID AND LIQUID WASTE TRANSPORTATION

In accordance with BOEM guidance, the required data regarding the solid and liquid waste which will be transported from the site of the activities proposed herein has been incorporated into the Waste & Discharge tables which are included in the attachment(s) to the Waste & Discharge Information appendix.

E) VICINITY MAP

Enclosed as an attachment to this appendix is a vicinity map for the activities proposed herein depicting the location of same relative to the shoreline with the distance of the proposed activities from the shoreline and the primary route(s) of the support vessels and aircraft which will be used when traveling between the onshore support facilities and the proposed operations.

The vessels, supply boats, etc. utilized for the proposed activities will not transit the Bryde's/Rice whale area.

APPENDIX O
ONSHORE SUPPORT FACILITIES INFORMATION

A) GENERAL

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

Name of Shorebase	Location	Existing/New/Modified
Martin Terminal North	Port Fourchon, LA	Existing
Heliport -RCL Galliano Base	Galliano, LA	Existing

B) SUPPORT BASE CONSTRUCTION OR EXPANSION

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as Talos Energy Offshore LLC will use an existing onshore base facility and will not need to expand or modify those facilities to accomodate the operations proposed herein.

C) SUPPORT BASE CONSTRUCTION OR EXPANSION TIMETABLE

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as no land is being acquired to construct or expand an onshore support base.

D) WASTE DISPOSAL

In accordance with BOEM guidance, the required data regarding the facilities that will be used to store and dispose of any solid and liquid wastes generated by the activities proposed herein has been incorporated into the Waste & Discharge tables which are included in the attachment(s) to the Waste & Discharge Information appendix.

E) AIR EMISSIONS

In accordance with NTL 2008-G04, this information is not applicable to the activites proposed herein as the air emissions information in this section is not required for plans where the activities being proposed are within the boundaries of the Gulf of Mexico Region.

F) UNUSUAL SOLID AND LIQUID WASTES

In accordance with NTL 2008-G04, this information is not appliable to the activities proposed herein as the unusual solid and liquid wastes information generated by onshore support facilities is not required for plans that propose activities that fall within the boundaries of the Gulf of Mexico Region.

APPENDIX P
COASTAL ZONE MANAGEMENT (CZMA) INFORMATION

A) Under the direction of the Coastal Zone Management Act (CZMA), the states of Alabama, Florida, Louisiana, Mississippi, and Texas developed Coastal Zone Management Programs (CZMP) to allow for the supervision of significant land and water use activities that take place within or that could significantly impact their respective coastal zones.
Relevant enforceable policies were considered in certifying consistency for the state of Alabama.

A certificate of Coastal Zone Management Consistency for Alabama is enclosed in this Appendix.

APPENDIX Q
ENVIRONMETAL IMPACT ANALYSIS

A) In accordance with NTL 2008-G04, Talos QN Exploration LLC has included with this plan an Environmental Impact Analysis (EIA) prepared by J. Connor Consulting, Inc., which addresses the activities proposed herein. A copy of the EIA is included as an attachment to this appendix.

Talos QN Exploration, LLC (Talos)

Supplemental Development Operations Coordination Document
Mississippi Canyon Block 519
OCS-G 27278

(A) Impact Producing Factors

ENVIRONMENTAL IMPACT ANALYSIS WORKSHEET

Environment Resources	Impact Producing Factors (IPFs) Categories and Examples Refer to recent GOM OCS Lease Sale EIS for a more complete list of IPFs					
	Emissions (air, noise, light, etc.)	**Effluents (muds, cutting, other discharges to the water column or seafloor)**	**Physical disturbances to the seafloor (rig or anchor emplacements, etc.)**	**Wastes sent to shore for treatment or disposal**	**Accidents (e.g., oil spills, chemical spills, H_2S releases)**	**Discarded Trash & Debris**
Site-specific at Offshore Location						
Designated topographic features		(1)	(1)		(1)	
Pinnacle Trend area live bottoms		(2)	(2)		(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Benthic communities			(4)			
Water quality		X			X	
Fisheries		X			X	
Marine Mammals	X(8)	X			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					X6)	
Coastal wildlife refuges						
Wilderness areas						

Appendix Q

Footnotes for Environmental Impact Analysis Matrix

1) Activities that may affect a marine sanctuary or topographic feature. Specifically, if the well or platform site or any anchors will be on the seafloor within the:
   - 4-mile zone of the Flower Garden Banks, or the 3-mile zone of Stetson Bank;
   - 1000-meter, 1-mile or 3-mile zone of any topographic feature (submarine bank) protected by the Topographic Features Stipulation attached to an Outer Continental Shelf (OCS) lease;
   - Essential Fish Habitat (EFH) criteria of 500 feet from any no-activity zone; or
   - Proximity of any submarine bank (500-foot buffer zone) with relief greater than two meters that is not protected by the Topographic Features Stipulation attached to an OCS lease.
2) Activities with any bottom disturbance within an OCS lease block protected through the Live Bottom (Pinnacle Trend) Stipulation attached to an OCS lease.
3) Activities within any Eastern Gulf OCS block where seafloor habitats are protected by the Live Bottom (Low-Relief) Stipulation attached to an OCS lease.
4) Activities on blocks designated by the BOEM as being in water depths 300 meters or greater.
5) Exploration or production activities where H_2S concentrations greater than 500 ppm might be encountered.
6) All activities that could result in an accidental spill of produced liquid hydrocarbons or diesel fuel that you determine would impact these environmental resources. If the proposed action is located a sufficient distance from a resource that no impact would occur, the EIA can note that in a sentence or two.
7) All activities that involve seafloor disturbances, including anchor emplacements, in any OCS block designated by the BOEM as having high probability for the occurrence of shipwrecks or prehistoric sites, including such blocks that will be affected that are adjacent to the lease block in which your planned activity will occur. If the proposed operations are located a sufficient distance from a shipwreck or a prehistoric site that no impact would occur, the EIA can note that in a sentence or two.
8) All activities that you determine might have an adverse effect on endangered or threatened marine mammals or sea turtles or their critical habitats.
9) Production activities that involve transportation of produced fluids to shore using shuttle tankers or barges.

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

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

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

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

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of America	Gulf of America Range
			Lease Area	Coastal		
Stork, Wood	*Mycteria americana*	T	-	X	None	Coastal Alabama and Florida
Tern, Roseate	*Sterna dougallii dougallii*	T	-	X	None	Coastal Southern Florida
Warbler, Bachman's	*Vermivora bachmanii*	E	-	X	None	Coastal Southern Florida
Woodpecker, Red-cockaded	*Picoides borealis*	E	-	X	None	Coastal Louisiana and Florida
Marine Reptiles						
Sea Turtle, Green	*Chelonia mydas*	T/E[3]	X	X	None	GOM
Sea Turtle, Hawksbill	*Eretmochelys imbricata*	E	X	X	None	GOM
Sea Turtle, Kemp's Ridley	*Lepidochelys kempli*	E	X	X	None	GOM
Sea Turtle, Leatherback	*Dermochelys coriacea*	E	X	X	None	GOM
Sea Turtle, Loggerhead	*Caretta caretta*	T	X	X	Texas, Louisiana, Mississippi, Alabama, Florida	GOM
Terrestrial Reptiles						
Turtle, Alabama Red-bellied	*Pseudemys alabamensis*	E	-	X	None	Coastal Mississippi and Alabama
Crocodile, American	*Crocodylus acutus*	T	-	X	Everglades and Florida Keys	Coastal Florida
Snake, Eastern Indigo	*Drymarchon couperi*	T	-	X	None	Coastal Mississippi, Alabama, and Florida
Tortoise, Gopher	*Gopherus polyphemus*	T	-	X	None	Coastal Louisiana, Mississippi, and Alabama
Turtle, Ringed Map	*Graptemys oculifera*	T	-	X	None	Coastal Louisiana and Mississippi
Turtle, Yellow-blotched Map	*Graptemys flavimaculata*	T	-	X	None	Coastal Mississippi
Fish						
Sturgeon, Gulf	*Acipenser oxyrinchus (=oxyrhynchus) desotoi*	T	X	X	Coastal Louisiana, Mississippi, Alabama, and Florida (panhandle)	Coastal Louisiana, Mississippi, Alabama, and Florida (panhandle)
Shark, Oceanic Whitetip	Carcharhinus longimanus	T	X	_	None	GOM
Sawfish, Smalltooth	Pristis pectinate	E	-	X	None	Florida
Grouper, Nassau	Epinephelus striatus	T	-	X	Florida[5]	Florida

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of America	Gulf of America Range
			Lease Area	Coastal		
Ray, Giant Manta	Manta birostris	T	X	--	None	GOM
Sturgeon, Pallid	Scaphirhynchus albus	E	-	X	None	Louisiana Coastal Rivers
Corals						
Coral, Elkhorn	*Acopora palmate*	T	X[2]	X	Florida[5]	Flower Garden Banks and Florida
Coral, Staghorn	*Acopora cervicornis*	T	X	X	Florida[5]	Florida
Coral, Boulder Star	*Orbicella franksi*	T	X	X	Flower Garden Banks and Florida	Flower Garden Banks and Florida
Coral, Lobed Star	*Orbicella annularis*	T	X	X	Flower Garden Banks and Florida	Flower Garden Banks and Florida
Coral, Mountainous Star	*Orbicella faveolate*	T	X	X	Flower Garden Banks and Florida	Flower Garden Banks and Florida
Coral, Rough Cactus	*Mycetophyllia ferox*	T	-	X	Florida[5]	Florida and Southern Gulf of America
Coral, Pillar	*Dendrogyra cylindrus*	T	-	X	Florida[5]	Florida

Abbreviations: E = Endangered; T = Threatened

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

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

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

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

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

(B) Analysis

Site-Specific at Mississippi Canyon Block 519

Proposed operations consist of the drilling, completion, and placing into production of one well with three approved SHLs as options (U, V, and W). The operations will be conducted with a drillship or DP semisubmersible. There are no seismic surveys, pile driving, or pipelines making landfall associated with the operations covered by this Plan.

1. Designated Topographic Features

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

Physical disturbances to the seafloor: Mississippi Canyon Block 519 is 80.5 miles from the closest designated Topographic Features Stipulation Block (Sackett Bank); therefore, no adverse impacts are expected. Additionally, a drillship or DP semisubmersible is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Effluents: Mississippi Canyon Block 519 is 80.5 miles from the closest designated Topographic Features Stipulation Block (Sackett Bank); therefore, no adverse impacts are expected.

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

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 America dispersants were not utilized as part of the response. The Regional Response Team was consulted and recommended that dispersants not be used, despite acknowledging the appropriate protocols were correctly followed and that there was a net environmental benefit in utilizing dispersants. This demonstrates that the federal authorities (USCG and RRT) will be extremely prudent in their decision-making regarding dispersant use authorizations.

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

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

2. Pinnacle Trend Area Live Bottoms

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

Physical disturbances to the seafloor: Mississippi Canyon Block 519 is 49.6 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected. Additionally, a drillship or DP semisubmersible is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms. Although there is little information available on sound detection and sound-mediated behaviors for marine invertebrates, the overall impacts on pinnacle and low-relief feature communities from anthropogenic noise are expected to be negligible (BOEM 2017-009). Additionally, Mississippi Canyon Block 519 is 49.6 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Effluents: Mississippi Canyon Block 519 is 49.6 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

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

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

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

3. Eastern Gulf Live Bottoms

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

Physical disturbances to the seafloor: Mississippi Canyon Block 519 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, a drillship or DP semisubmersible is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms. Although there is little information available on sound detection and sound-mediated behaviors for marine invertebrates, the overall impacts on pinnacle and low-relief feature communities from anthropogenic noise are expected to be negligible (BOEM 2017-009). Additionally, Mississippi Canyon Block 519 is not located in an area characterized by the existence of live bottoms; therefore, no adverse impacts are expected.

Effluents: Mississippi Canyon Block 519 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 operations (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to live bottom organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10-meter depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine invertebrates. Oil from a subsurface spill is not expected to impact Eastern Gulf live bottoms due to the distance of these blocks from a live bottom area and coverage of the activities proposed in this plan by Talos's Regional OSRP (refer to information submitted in **Appendix I**).

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

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

4. Deepwater Benthic Communities

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

Mississippi Canyon Block 519 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 519 is approximately 14.2 miles from a known deepwater benthic community site (Mississippi Canyon Block 426), listed in NTL 2009-G40. Additionally, a drillship or DP semisubmersible is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed. Due to the distance from the closest known deepwater benthic community and because physical disturbances to the seafloor will be minimized by the use of a drillship or DP semisubmersible, Talos's proposed operations in Mississippi Canyon Block 519 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 519 include disturbances to the seafloor, effluents, and accidents.

Physical disturbances to the seafloor: Bottom area disturbances resulting from the emplacement of drill rigs, the drilling of wells and the installation of platforms and pipelines would increase water-column turbidity and re-suspension of any accumulated pollutants, such as trace metals and excess nutrients. This would cause short-lived impacts on water quality conditions in the immediate vicinity of the emplacement operations. Additionally, a drillship or DP semisubmersible is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

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

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

Drilling Fluid Spills

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

SBF are considered to be minor. Spills of SBF typically do not require mitigation because SBF sinks in water and naturally biodegrades, seafloor cleanup is technically difficult, and SBF has low toxicity. (BOEM 2017-009)

Chemical Spills

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

Oil Spills

Oil spills have the greatest potential of all OCS oil-and gas-related activities to affect water quality. Small spills (<1,000 barrels) are not expected to substantially impact water quality in coastal or offshore waters because the oil dissipates quickly through dispersion and weathering while still at sea. Reasonably foreseeable larger spills (≥1,000 barrels), however, could impact water quality in coastal and offshore waters (BOEM 2017-007). However, based on data provided in the BOEM 2016 Update of Occurrence Rates for Offshore Oil Spills, it is unlikely that an accidental surface or subsurface spill of a significant volume would occur from the proposed operations. Between 2001 and 2015 OCS operations produced eight billion barrels of oil and spilled 0.062 percent of this oil, or one barrel for every 1,624 barrels produced. (The overall spill volume was almost entirely accounted for by the 2010 Deepwater Horizon blowout and subsequent discharge of 4.9 million barrels of oil. Additional information on unlikely scenarios and impacts from very large oil spills are discussed in the Catastrophic Spill Event Analysis white paper (BOEM 2017-007).

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

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

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

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

Oil that is chemically dispersed at the surface moves into the top six meters of the water column where it mixes with surrounding waters and begins to biodegrade (U.S. Congress, Office of Technology Assessment, 1990). Dispersant use, in combination with natural processes, breaks up oil into smaller components that allows them to dissipate into the water and degrade more rapidly (Nalco, 2010). Dispersant use must be in accordance with an RRT Preapproved Dispersant Use Manual and with any conditions outlined within an RRT's site-specific, dispersant approval given after a spill event. Consequently, dispersant use must be in accordance with the restrictions for specific water depths, distances from shore, and monitoring requirements. At this time, neither the Region IV nor the Region VI RRT dispersant use manuals, which cover the GOM region, give preapproval for the application of dispersant use subsea (BOEM 2017-009).

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

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

6. Fisheries

There are multiple species of fish in the Gulf of America, including the endangered and threatened species listed in **Table 1** at the beginning of this Environmental Impact Assessment. More information regarding the endangered gulf sturgeon (**Item 20.2**), oceanic whitetip shark (**Item 20.3**), and giant manta ray (**Item 20.4**) can be found below. Potential IPFs to fisheries as a result of the proposed operations in Mississippi Canyon Block 519 include physical disturbances to the seafloor, emissions (noise / sound), effluents, and accidents.

Physical disturbances to the seafloor: The emplacement of a structure or drilling rig results in minimal loss of bottom trawling area to commercial fishermen. Pipelines cause gear conflicts

which result in losses of trawls and shrimp catch, business downtime and vessel damage. Most financial losses from gear conflicts are covered by the Fishermen's Contingency Fund (FCF). The emplacement and removal of facilities are not expected to cause significant adverse impacts to fisheries. Additionally, a drillship or DP semisubmersible is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

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

Sound detection capabilities among fishes vary. For most fish species, it is reasonable to assume hearing sensitivity to frequencies below 500 Hertz (Hz) (Popper et al., 2003 and 2014; Popper and Hastings, 2009; Slabbekoorn et al., 2010; Radford et al., 2014). The band of greatest interest to this analysis, low-frequency sound (30-500 Hz), has come to be dominated by anthropogenic sources and includes the frequencies most likely to be detected by most fish species. For example, the noise generated by large vessel traffic typically results from propeller cavitation and falls within 40-150 Hz (Hildebrand, 2009; McKenna et al., 2012). This range is similar to that of fish vocalizations and hearing and could result in a masking effect.

Masking occurs when background noise increases the threshold for a sound to be detected; masking can be partial or complete. If detection thresholds are raised for biologically relevant signals, there is a potential for increased predation, reduced foraging success, reduced reproductive success, or other effects. However, fish hearing and sound production may be adapted to a noisy environment (Wysocki and Ladich, 2005). There is evidence that fishes are able to efficiently discriminate between signals, extracting important sounds from background noise (Popper et al., 2003; Wysocki and Ladich, 2005). Sophisticated sound processing capabilities and filtering by the sound sensing organs essentially narrows the band of masking frequencies, potentially decreasing masking effects. In addition, the low-frequency sounds of interest propagate over very long distances in deep water, but these frequencies are quickly lost in water depths between ½ and ¼ the wavelength (Ladich, 2013). This would suggest that the potential for a masking effect from low-frequency noise on behaviors occurring in shallow coastal waters may be reduced by the receiver's distance from sound sources, such as busy ports or construction activities.

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

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

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

Effluents: Effluents such as drilling fluids and cuttings discharges contain components and properties which are detrimental to fishery resources. Moderate petroleum and metal contamination of sediments and the water column can occur out to several hundred meters down current from the discharge point. Offshore discharges are expected to disperse and dilute to very near background levels in the water column or on the seafloor within 3,000 meters of the discharge point and are expected to have negligible effect on fisheries. Additionally, an analysis of the best available information from the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 *Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico* (NMFS, 2020) concludes that exposures to toxicants in discharges from oil and gas activities are not likely to adversely affect ESA-listed species.

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

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

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

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

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

7. Marine Mammals

The latest population estimates for the Gulf of America revealed that cetaceans of the continental shelf and shelf-edge were almost exclusively bottlenose dolphin and Atlantic spotted dolphin. Squid eaters, including dwarf and pygmy killer whale, Risso's dolphin, rough-toothed dolphin, and Cuvier's beaked whale, occurred most frequently along the upper slope in areas outside of anticyclones. The Rice's whale (née Gulf of America Bryde's whale) is the only commonly occurring baleen whale in the northern Gulf of America and has been sighted off western Florida and in the De Soto Canyon region. Florida manatees have been sighted along the entire northern GOM but are mainly found in the shallow coastal waters of Florida, which are unassociated with the proposed operations. A complete list of all endangered and threatened marine mammals in the 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 519 include emissions (noise / sound), effluents, discarded trash and debris, and accidents.

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

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

Drilling and production noise would contribute to increases in the ambient noise environment of the 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.

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

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

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

Talos 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. Talos 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 Talos management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

Accidents: Collisions between support vessels and marine mammals, including cetaceans, would be unusual events; however, should one occur, death or injury to marine mammals is possible. Contract vessel operators can avoid marine mammals and reduce potential deaths by maintaining a vigilant watch for marine mammals and maintaining a safe distance of 500 meters or greater

from baleen whales, 100 meters or greater from sperm whales, and a distance of 50 meters or greater from all other aquatic protected species, with the exception of animals that approach the vessel. If unable to identify the marine mammal, the vessel will act as if it were a baleen whale and maintain a distance of 500 meters or greater. If a manatee is sighted, all vessels in the area will operate at "no wake/idle" speeds in the area, while maintaining proper distance. When assemblages of cetaceans are observed, including mother/calf pairs, vessel speeds will be reduced to 10 knots or less. Vessel personnel should use a Gulf of America reference guide that includes identifying information on marine mammals, sea turtles, and other marine protected species (i.e., Endangered Species Act listed species such as Gulf sturgeon, giant manta ray, or oceanic whitetip shark) that may be encountered in the Gulf of America OCS.

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

Vessel personnel must report sightings of any injured or dead protected marine mammal species immediately, regardless of whether the injury or death is caused by their vessel, to the NMFS Southeast Marine Mammal Stranding Hotline at (877) WHALE-HELP (877-942-5343). Additional information may be found at the following website: https://www.fisheries.noaa.gov/report. Any injured or dead protected species should also be reported to takereport.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.

These proposed operations will utilize a moon pool(s) to conduct various subsea activities. Talos'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, Talos will cease operations and contact NMFS at nmfs.psoreview@noaa.gov and BSEE at protectedspecies@bsee.gov and 985-722-7902 for additional guidance and incident report information.

Oil spills have the potential to cause sublethal oil-related injuries and spill-related deaths to marine mammals. However, it is unlikely that an accidental oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could impact cetacean behavior and/or distribution, thereby causing additional stress to the animals. The effect of oil dispersants on cetaceans is not known. Removing oil from the surface would reduce the likelihood of oil adhering to marine mammals. Laboratory experiments have shown that the dispersants used during the Deepwater Horizon response are cytotoxic to sperm whale cells; however, it is difficult to determine actual exposure levels in the

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 Talos'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 Talos's OSRP (refer to information submitted in accordance with **Appendix I**).

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

NMFS Protected Resources Contacts for the Gulf of America:

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

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

8. Sea Turtles

GulfCet II studies sighted most loggerhead, Kemp's ridley and leatherback sea turtles over shelf waters. Historically these species have been sighted up to the shelf's edge. They appear to be more abundant east of the Mississippi River than they are west of the river (Fritts et al., 1983b; Lohoefener 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), effluents, discarded trash and debris, and accidents.

Emissions (noise / sound): Noise from drilling activities, support vessels, and helicopters (i.e., non-impulsive anthropogenic sound) may elicit a startle reaction from sea turtles, but this is a temporary disturbance. Responses to sound exposure may include lethal or nonlethal injury, temporary hearing impairment, behavioral harassment and stress, or no apparent response. Vessels are the greatest contributors to increases in low-frequency ambient sound in the sea (Andrew et al. 2011). Sound levels and tones produced are generally related to vessel size and speed. Larger vessels generally emit more sound than smaller vessels, and vessels underway with a full load, or those pushing or towing a load, are noisier than unladen vessels. Routine OCS helicopter traffic would not be expected to disturb animals for extended periods, provided pilots do not alter their flight patterns to more closely observe or photograph marine mammals. Helicopters, while flying offshore, generally maintain altitudes above 700 feet during transit to and from a working area,

and at an altitude of about 500 feet between platforms. The duration of the effects resulting from a startle response is expected to be short-term during routine flights and the potential effects will be insignificant to sea turtles. Therefore, we find that any disturbance that may result from aircraft associated with the proposed operations is not likely to adversely affect sea turtles. Construction and operational sounds other than pile driving should have insignificant effects on sea turtles; effects would be limited to short-term avoidance of construction activity itself rather than the sound produced. As a result, sound sources associated with support vessel movement as part of the proposed operations are insignificant and therefore are not likely to adversely affect sea turtles.

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

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

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

Talos 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. Talos 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 Talos management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

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

Vessel crews must report sightings of any injured or dead protected sea turtle species immediately, regardless of whether the injury or death is caused by their vessel, to the State Coordinators for the Sea Turtle Stranding and Salvage Network (STSSN) at http://www.sefsc.noaa.gov/species/turtles/stranding_coordinators.htm (phone numbers vary by state). Additional information may be found at the following website: https://www.fisheries.noaa.gov/report. Any injured or dead protected species should also be reported to takereport.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.

These proposed operations will utilize a moon pool(s) to conduct various subsea activities. Talos'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, Talos will cease operations and contact NMFS at nmfs.psoreview@noaa.gov and BSEE at protectedspecies@bsee.gov and 985-722-7902 for additional guidance and incidental report information. The procedures found in Appendix J of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion will be employed to free entrapped or entangled marine life safely.

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

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

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 519 is located 89 miles from the Breton Wilderness Area and 64 miles from shore. Applicable emissions data is included in **Appendix H** of the Plan.

There would be a limited degree of air quality degradation in the immediate vicinity of the proposed operations. Plan Emissions for the proposed operations 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 519 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, Talos 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 519 include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: A drillship or DP semisubmersible is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed. Because physical disturbances to the seafloor will be minimized by the use of a drillship or DP

semisubmersible, Talos's proposed operations in Mississippi Canyon Block 519 that are not likely to impact shipwreck sites.

Additionally, Mississippi Canyon Block 519 is not located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks. Should Talos discover any evidence of a shipwreck, they will immediately halt operations within a 1000-foot radius, report to BOEM within 48 hours, and make every reasonable effort to preserve and protect that cultural resource.

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

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, Talos 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 519 are physical disturbances to the seafloor and accidents. Should Talos 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: Although the operations proposed will be conducted by utilizing a drillship or DP semisubmersible, which would cause only an insignificant amount of seafloor to be disturbed, Mississippi Canyon Block 519 is located inside the Archaeological Prehistoric high probability lines. Talos will report to BOEM the discovery of any object of prehistoric archaeological significance and make every reasonable effort to preserve and protect that cultural resource.

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

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 519 include physical disturbances to the seafloor, effluents, and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of America.

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

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

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

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

13. Marine and Pelagic Birds

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

Emissions:

Air Emissions

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

Noise / Sound Emissions

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

The use of explosives for decommissioning activities may potentially kill one or more birds from barotrauma if a bird (or several birds because birds may occur in a flock) is present at the location of the severance. For the impact of underwater sound, a threshold of 202 dB sound exposure level (SEL) for injury and 208 dB SEL for barotrauma was recommended for the 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 operations (refer to **Item 5**, Water Quality). Marine and pelagic birds feeding at the spill location may experience chronic, nonfatal, physiological stress. It is expected that few, if any, coastal and marine birds would actually be affected to that extent. The activities proposed in this plan will be covered by Talos's Regional OSRP (refer to information submitted in **Appendix I**).

Discarded trash and debris: Marine and pelagic birds could become entangled and snared in discarded trash and debris, or ingest small plastic debris, which can cause permanent injuries and death. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, 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).

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

ESA bird species: Seven species found in the 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.

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

Coastal and Onshore

15. Beaches

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

Accidents: Oil spills contacting beaches would have impacts on the use of recreational beaches and associated resources. Due to the distance from shore (64 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 Talos's Regional OSRP (refer to information submitted in **Appendix I**).

Discarded trash and debris: Trash on the beach is recognized as a major threat to the enjoyment and use of beaches. There will only be a limited amount of marine debris, if any, resulting from the proposed operations. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and

regulations imposed by various agencies, including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Talos 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. Talos 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 Talos management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

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

16. Wetlands

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

Accidents: It is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). Due to the distance from shore (64 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Talos's Regional OSRP (refer to information submitted in **Appendix I**).

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

Talos 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. Talos 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 Talos management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

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

17. Shore Birds and Coastal Nesting Birds

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

Accidents: Oil spills could impact shore birds and coastal nesting birds. However, it is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). Given the distance from shore (64 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Talos's Regional OSRP (refer to information submitted in **Appendix I**).

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

Talos 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. Talos 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 Talos management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

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

18. Coastal Wildlife Refuges

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

Accidents: An accidental oil spill from the proposed operations could impact coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed operations (refer to Item 5, Water Quality). Due to the distance from shore (64 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Talos's Regional OSRP (refer to information submitted in **Appendix I**).

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

Talos 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. Talos 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 Talos management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

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

19. Wilderness Areas

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

Accidents: An accidental oil spill from the proposed operations could impact wilderness areas. However, it is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). Due to the distance from the nearest designated Wilderness Area (89 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 Talos's Regional OSRP (refer to information submitted in **Appendix I).**

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

Talos 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. Talos 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 Talos management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

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

20. Other Environmental Resources Identified

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

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

The Rice's whale (née Gulf of America Bryde's whale) is the only commonly occurring baleen whale in the northern Gulf of America and has been sighted off western Florida and in the De Soto Canyon region. The Rice's whale area is over 36.3 miles from the proposed operations. Additionally, vessel traffic associated with the proposed operations will not flow through the Rice's whale area. Therefore, there are no IPFs from the proposed operations that are likely to impact the Rice's whale. Additional information on marine mammals may be found in **Item 7**.

20.2 – Gulf Sturgeon

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

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

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

Should an ESA-listed fish (e.g., giant manta ray, oceanic whitetip shark, or Gulf sturgeon) be entrapped, entangled, or injured, personnel should contact the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov) and report all incidents to takereport.nmfsser@noaa.gov. After making the appropriate notifications, Talos 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.

Due to the distance from the nearest identified Gulf sturgeon critical habitat (118.1 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 Talos's Regional OSRP (refer to information submitted in **Appendix I)**.

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

Discarded trash and debris: Trash and debris are not expected to impact the Gulf sturgeon. There will only be a limited amount of marine debris, if any, resulting from the proposed operations. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Talos 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. Talos 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 Talos 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 America and Florida Keys. Oceanic whitetip sharks were listed as threatened under the Endangered Species Act in 2018 due to worldwide overfishing. Oceanic whitetip sharks had an abundant worldwide population, which has been threatened in recent years by inadequate regulatory measures governing fisheries; therefore, there is little research regarding the impact of oil and gas operations on oceanic whitetip sharks (NMFS, 2020). IPFs that have been determined by NMFS to be discountable to oceanic whitetip sharks include vessel strike, emissions (noise / sound), discharges, entanglement and entrapment, and marine debris. Potential IPFs to oceanic whitetip sharks as a result of the proposed operations in Mississippi Canyon Block 519 include accidents. Additional information on ESA-listed fish may be found in **Item 6**.

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

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

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

Should an ESA-listed fish (e.g., giant manta ray, oceanic whitetip shark, or Gulf sturgeon) be entrapped, entangled, or injured, personnel should contact the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov) and report all incidents to takereport.nmfsser@noaa.gov. After making the appropriate notifications, Talos 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 oceanic whitetip sharks. It is expected that exposure of oil or dispersants to oceanic whitetip sharks would likely result in effects similar to other marine species, including fitness reduction and the possibility of mortality (NMFS, 2020). Due to the sparse population in the Gulf of America, it is possible that a small number of oceanic whitetip sharks could be impacted by an oil spill. However, it is unlikely that such an event would occur from the proposed operations (refer to **Item 5**, Water Quality). The operations proposed in this plan will be covered by Talos's Regional OSRP (refer to information submitted in **Appendix I**).

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

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

Talos 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. Talos 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 Talos management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

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

20.4 – Giant Manta Ray

According to the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, the giant manta ray lives in tropical, subtropical, and temperate oceanic waters and productive coastlines throughout the Gulf of America. While uncommon in the Gulf of America, there is a population of approximately 70 giant manta rays in the Flower Garden Banks National Marine Sanctuary (Miller and Klimovich 2017). Giant manta rays were listed as threatened under the Endangered Species Act in 2018 due to worldwide overfishing. Giant manta rays had an abundant worldwide population, which has been threatened in recent years by inadequate regulatory measures governing fisheries; therefore, there is little research regarding the impact of oil and gas operations on giant manta rays (NMFS, 2020). IPFs that have been determined by NMFS to be discountable to giant manta rays include vessel strike, emissions (noise / sound), discharges, entanglement and entrapment, and marine debris. Potential IPFs to giant manta rays as a result of the proposed operations in Mississippi Canyon Block 519 include accidents. Additional information on ESA-listed fish may be found in **Item 6**.

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

information on marine mammals, sea turtles, and other marine protected species (i.e., Endangered Species Act listed species such as Gulf sturgeon, giant manta ray, or oceanic whitetip shark) that may be encountered in the Gulf of America OCS.

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

Should an ESA-listed fish (e.g., giant manta ray, oceanic whitetip shark, or Gulf sturgeon) be entrapped, entangled, or injured, personnel should contact the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov) and report all incidents to takereport.nmfsser@noaa.gov. After making the appropriate notifications, Talos 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 America. However, due to the distance to the Flower Garden Banks (229.4 miles), the low population dispersed throughout the Gulf of America, and the response capabilities that would be implemented during a spill, no significant adverse impacts are expected to impact giant manta rays. Additionally, it is unlikely that such an event would occur from the proposed operations (refer to **Item 5**, Water Quality). The operations proposed in this plan will be covered by Talos's Regional OSRP (refer to information submitted in **Appendix I**).

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

There will only be a limited amount of marine debris, if any, resulting from the proposed operations. Operators are prohibited from deliberately discharging debris as mandated by

MARPOL-Annex V, the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies, including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

Talos 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. Talos 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 Talos management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE.

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

20.5 – Loggerhead Sea Turtle

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

There are multiple IPFs that may impact loggerhead sea turtles (see **Item 8**). However, the closest loggerhead nearshore reproductive critical habitat is located 119.5 miles from Mississippi Canyon Block 519; therefore, no adverse impacts are expected. Additionally, considering the information from the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, we do not expect proposed operations to affect the ability of *Sargassum* to support adequate prey abundance and cover for loggerhead turtles.

20.6 - Protected Corals

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

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

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

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed operations (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to corals only if the oil contacts the organisms. Due to the distance from the Flower Garden Banks National Marine Sanctuary (229.4 miles) and other critical coral habitats, no adverse impacts are expected. The operations proposed in this plan will be covered by Talos's Regional OSRP (refer to information submitted in **Appendix I**).

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 519 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 OPERATIONS

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

(D) ENVIRONMENTAL HAZARDS

During the hurricane season, June through November, the Gulf of America is impacted by an average of ten tropical storms (39-73 mph winds), of which six become hurricanes (> 74 mph winds). Due to its location in the Gulf, Mississippi Canyon Block 519 may experience hurricane and tropical storm force winds and related sea currents. These factors can adversely impact the integrity of the operations covered by this plan. A significant storm may present physical hazards to operators and vessels, damage exploration or production equipment, or result in the release of hazardous materials (including hydrocarbons). Additionally, the displacement of equipment may disrupt the local benthic habitat and pose a threat to local species.

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

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

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

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

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

(E) ALTERNATIVES

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

(F) MITIGATION MEASURES

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

(G) CONSULTATION

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

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

- Hazard Surveys

APPENDIX R
ADMINISTRATIVE INFORMATION

A) EXEMPTED INFORMATION DESCRIPTION

The bottom-hole location of the well has been removed form the public information copy of this DOCD as well as any discussions of the target objectives, geologic or geophysical data, and any interpreted geology.

B) BIBLIOGRAPHY

Below is a listing of all referenced material used to development this plan.

- BOEM Notice to Lessees No. 2016-G01 "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting"
- BOEM Notice to Lessees No. 2016-G02 "Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program"
- BOEM Notice to Lessees No. 2016-N01 "Requiring Additional Security"
- BOEM Notice to Lessees No. 2015-N01 "Information Requirements for Exploration Plans, Development and Production Plans, and Development Operations Coordination Documents on the OCS for Worst Case Discharge and Blowout Scenarios"
- Notice to Lessees No. 2015-G03 "Marine Trash and Debris Awareness and Elimination"
- Notice to Lessees No. 2011-G01 (Joint) "Revisions to the List of OCS Lease Blocks Requiring Archaeological Resource Surveys and Reports"
- Notice to Lessees No. 2009-G40 "Deepwater Benthic Communities"
- Notice to Lessees No. 2009-G39 "Biologically-Sensitive Underwater Features and Areas"
- Notice to Lessees No. 2008-G04 "Information Requirements for Exploration Plans and Development Operations Coordination Documents"
- Notice to Lessees No. 2008-G05 "Shallow Hazards Program"
- Notice to Lessees No. 2005-G07 "Archaeological Resource Surveys and Reports"