

UNITED STATES GOVERNMENT
MEMORANDUM

May 7, 2026

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

Control # - S-08204
Type - Supplemental Development Operations Coordinations Document
Lease(s) - OCS-G21685 Block - 308 South Timbalier Area
OCS-G34536 Block - 40 Green Canyon Area
Operator - Talos QN Exploration LLC
Description - Subsea Well No. 3 and Platform A-Tarantula
Rig Type - Not Found

Attached is a copy of the subject plan.

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

Chiquita Hill
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
????/A-TARAN		6452 FNL, 7075 FWL	G21685/ST/308
WELL/NO. 3	G34536/GC/40	4216 FNL, 7861 FEL	G34536/GC/40



OCS-G 34536 & OCS-G 21685

**Well(s):
OCSG**

SUPPLEMENTAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

October 1, 2025

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

Ladies and Gentlemen:

Talos QN Exploration LLC (Talos) 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. Talos submits the following Supplemental DOCD for the previously approved DOCD (N-10079) for the Green Canyon Block 40.

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

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

Your expedited review is greatly appreciated.

Respectfully,

A handwritten signature in blue ink, appearing to be "E. Berger", is written over a light blue rectangular background.

Talos QN Exploration LLC



SUPPLEMENTAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

PUBLIC INFORMATION

Lease Number: OCSG

Area/Block: OCS-G 34536 & OCS-G 21685

Well(s):

Offshore: Louisiana

**Submitted By: Talos QN Exploration LLC (03672)
333 Clay St., Suite 3300
Houston, Tx 77002**

**Eric Berger
(713) 335-6922
Eric.Berger@talosenergy.com**

Estimated Start-up Date: July 1, 2026

OCS-G 34536 & OCS-G 21685

Well(s):

OCSG

SUPPLEMENTAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

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**APPENDIX A
PLAN CONTENTS**

A) PLAN INFORMATION

Talos QN Exploration LLC (Talos) submits this Supplemental DOCD to provide for the drilling and completion of GC 40 #3 well and the installation of a lease term pipeline to tie back the well to the ST 308 A-Tarantula platform.

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

This is a supplement to the DOCD approved under control number N-10079.

B) LOCATION

A map depicting the proposed surface and bottomhole location(s) is included in the attachment(s) to this appendix of the proprietary information copy of this plan. A map depicting the proposed surface location(s) is included in the attachment(s) to this appendix of the public information copy of this plan. A vicinity map for the activities proposed herein is included in the attachment(s) to appendix N.

C) SAFETY AND POLLUTION PREVENTION FEATURES

Talos QN Exploration LLC proposes to utilize a DP Semisubmersible/Drillship 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 semi-submersible or a 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 information on oil storage tanks with a capacity of 25 barrels or more that will be used to conduct the activities proposed herein. Since the capacities for both rig types are almost identical, this table is representative of either type rig.

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
Fuel Oil	MODU	9250	4	37000	32.4
Fuel Oil	Crew Boat	394	1	394	30
Fuel Oil	Support Vessel	6630	1	6630	6630
Fuel Oil	Support Vessel	6630	1	6630	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 (Talos) will comply with regulations in 30 CFR Part 250 in regards to safety, pollution prevention, and early spill detection measures. Talos has also reviewed the numerous industry and commission reports, as well as DOI's NTL's, and other guidance documents prepared since the 2010 Macondo blowout. As a result, Talos QN Exploration LLC has joined the HWCG LLC, and is also a member of Clean Gulf Associates and the National Response Corporation.

G) SERVICE FEE

In accordance with 30 CFR 250.125, included in the attachments for this appendix is a copy of the pay.gov receipt for the required service fee for the activities proposed herein.

OCS PLAN INFORMATION FORM

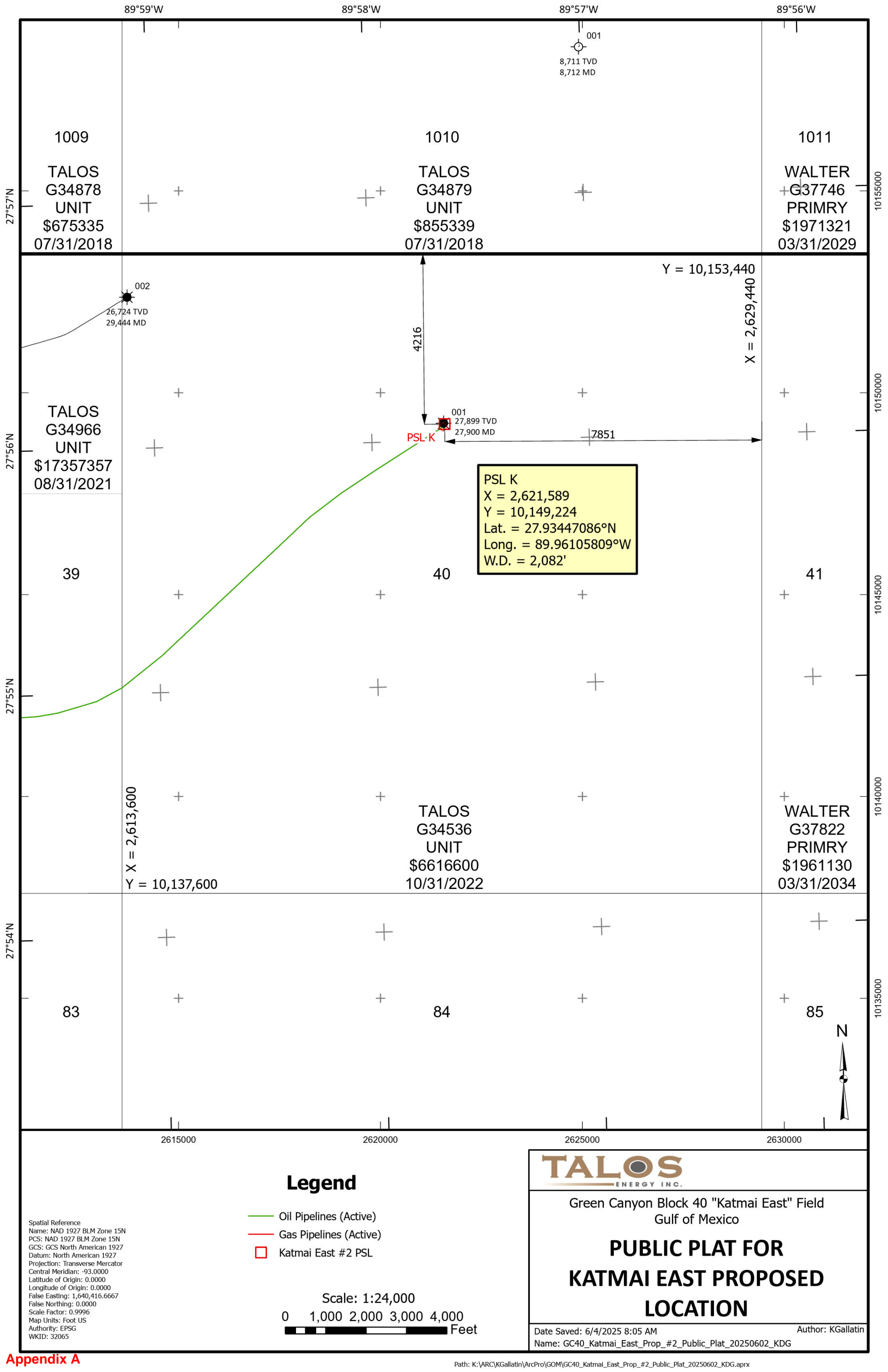
General Information									
Type of OCS Plan:	Exploration Plan (EP)	Development Operations Coordination Document (DOCD)						S-DOCD	
Company Name: Talos QN Exploration LLC		BOEM Operator Number: 03672							
Address:		Contact Person: Eric Berger							
333 Clay Street, Suite 3300		Phone Number: (713) 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	\$5,565	Receipt No.			
Project and Worst Case Discharge (WCD) Information									
Lease(s): OCS-G 34536 & 21685		Area: GC & ST		Block(s): ST 308		Project Name (If Applicable): Katmai			
Objective(s)		<input checked="" type="checkbox"/> Oil	<input type="checkbox"/> Gas	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Salt	Onshore Support Base(s): Fourchon, Louisiana			
Platform/Well Name: ST 308 A/Well #3		Total Volume of WCD: 47,650				API Gravity: 36.7°			
Distance to Closest Land (Miles): 77				Volume from uncontrolled blowout:					
Have you previously provided information to verify the calculations and assumptions for your WCD?							Yes	<input checked="" type="checkbox"/>	No
If so, provide the Control Number of the EP or DOCD with which this information was provided									
Do you propose to use new or unusual technology to conduct your activities?							<input checked="" type="checkbox"/>	Yes	No
Do you propose to use a vessel with anchors to install or modify a structure?							Yes	<input checked="" type="checkbox"/>	No
Do you propose any facility that will serve as a host facility for deepwater subsea development?							Yes	<input checked="" type="checkbox"/>	No
Description of Proposed Activities and Tentative Schedule (Mark all that apply)									
Proposed Activity		Start Date		End Date		No. of Days			
Drilling		7/1/2026		9/29/2026		90			
Development drilling									
Well completion		01/01/2027		03/02/2027		60			
Future Rig Activity 2028-2035		01/01/2028		12/31/2035		60 days/year			
Installation or modification of structure									
Installation of production facilities									
Installation of subsea wellheads and/or manifolds									
Installation of lease term pipelines		01/15/2027		02/14/2027		30			
Commence production									
Other (Specify and attach description)									
Description of Drilling Rig					Description of Structure				
<input type="checkbox"/>	Jackup	<input checked="" type="checkbox"/>	Drillship	<input type="checkbox"/>	Caisson	<input type="checkbox"/>	Tension leg platform		
<input type="checkbox"/>	Gorilla Jackup	<input type="checkbox"/>	Platform rig	<input type="checkbox"/>	Fixed platform	<input type="checkbox"/>	Compliant tower		
<input type="checkbox"/>	Semisubmersible	<input type="checkbox"/>	Submersible	<input type="checkbox"/>	Spar	<input type="checkbox"/>	Guyed tower		
<input checked="" type="checkbox"/>	DP Semisubmersible	<input type="checkbox"/>	Other (Attach Description)	<input type="checkbox"/>	Floating production system	<input type="checkbox"/>	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)			
Well 3#/GC 40		K1 PLET		8"		92'			

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): A-Tarantula				Previously reviewed under an approved EP or DOCD?		<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Is this an existing well or structure?		<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	If this is an existing well or structure, list the Complex ID or API No.		1500-1	
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day):			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid		
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)		
Lease No.	OCS RUE: G21685			OCS			OCS OCS		
Area Name	ST								
Block No.	308								
Blockline Departures (in feet)	N/S Departure: F <u> </u> L		N/S Departure: F <u> </u> L		N/S Departure: F <u> </u> L		N/S Departure: F <u> </u> L		
	6,452'						N/S Departure: F <u> </u> L		
	E/W Departure: F <u> </u> L		E/W Departure: F <u> </u> L		E/W Departure: F <u> </u> L		E/W Departure: F <u> </u> L		
	7,075'						E/W Departure: F <u> </u> L		
Lambert X-Y coordinates	X: 2,356,445.22'			X:			X:		
	Y: -182,040.84'			Y:			Y:		
Latitude/ Longitude	Latitude 28° 9' 41.0904"			Latitude			Latitude		
	Longitude -90° 13' 39.45"			Longitude			Longitude		
Water Depth (Feet): 484'				MD (Feet): N/A		TVD (Feet): N/A		MD (Feet): MD (Feet):	
Anchor Radius (if applicable) in feet:				N/A				TVD (Feet): TVD (Feet):	
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)									
Anchor Name or No.	Area	Block	X Coordinate		Y Coordinate		Length of Anchor Chain on Seafloor		
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				
			X =		Y =				

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

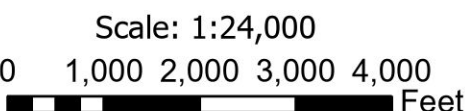
Proposed Well/Structure Location										
Well or Structure Name/Number (If renaming well or structure, reference previous name): Well Location #3				Previously reviewed under an approved EP or DOCD?			Yes	<input checked="" type="checkbox"/>	No	
Is this an existing well or structure?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?							<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 47,650			For structures, volume of all storage and pipelines (Bbls):			API Gravity of fluid 36.7°			
	Surface Location			Bottom-Hole Location (For Wells)			Completion (For multiple completions, enter separate lines)			
Lease No.	OCS G34536			OCS			OCS OCS			
Area Name	Green Canyon									
Block No.	40									
Blockline Departures (in feet)	N/S Departure: F _N L			N/S Departure: F L			N/S Departure: F L			
	4,216.00'						N/S Departure: F L			
	E/W Departure: F _E L			E/W Departure: F L			E/W Departure: F L			
	7,861.00'						E/W Departure: F L			
Lambert X-Y coordinates	X: 2,621,589.00			X:			X:			
	Y: 10,149,224.00			Y:			Y:			
Latitude/ Longitude	Latitude 27.93447086°N			Latitude			Latitude			
	Longitude 89.89.96105809°W			Longitude			Longitude			
Water Depth (Feet): 2,082'				MD (Feet):		TVD (Feet):		MD (Feet):		TVD (Feet):
Anchor Radius (if applicable) in feet:					N/A			MD (Feet):		TVD (Feet):
Anchor Locations for Drilling Rig or Construction Barge (If anchor radius supplied above, not necessary)										
Anchor Name or No.	Area	Block	X Coordinate	Y Coordinate	Length of Anchor Chain on Seafloor					
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						
			X =	Y =						



PSL K
 X = 2,621,589
 Y = 10,149,224
 Lat. = 27.93447086°N
 Long. = 89.96105809°W
 W.D. = 2,082'

Legend

- Oil Pipelines (Active)
- Gas Pipelines (Active)
- Katmai East #2 PSL

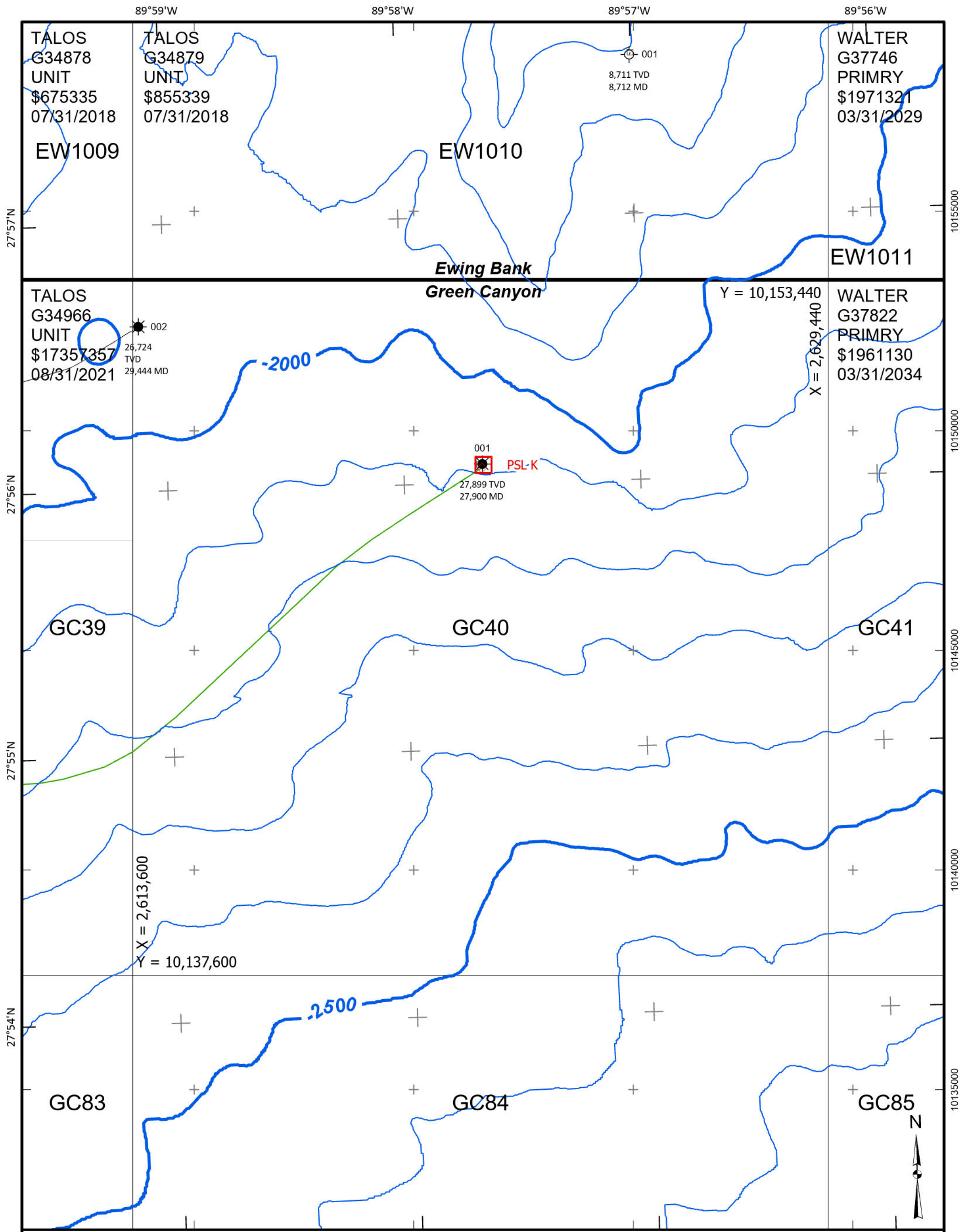


Green Canyon Block 40 "Katmai East" Field
Gulf of Mexico

**PUBLIC PLAT FOR
KATMAI EAST PROPOSED
LOCATION**

Date Saved: 6/4/2025 8:05 AM Author: KGallatin
Name: GC40_Katmai_East_Prop_#2_Public_Plat_20250602_KDG

Spatial Reference
 Name: NAD 1927 BLM Zone 15N
 PCS: NAD 1927 BLM Zone 15N
 GCS: GCS North American 1927
 Datum: North American 1927
 Projection: Transverse Mercator
 Central Meridian: -93.0000
 Latitude of Origin: 0.0000
 Longitude of Origin: 0.0000
 False Easting: 1,640,416.6667
 False Northing: 0.0000
 Scale Factor: 0.9996
 Map Units: Foot US
 Authority: EPSG
 WKID: 32065



TALOS
G34878
UNIT
\$675335
07/31/2018
EW1009

TALOS
G34879
UNIT
\$855339
07/31/2018

WALTER
G37746
PRIMRY
\$1971321
03/31/2029

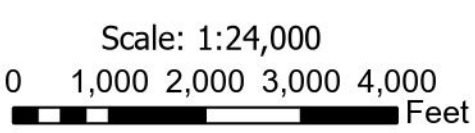
TALOS
G34966
UNIT
\$17357357
08/31/2021

WALTER
G37822
PRIMRY
\$1961130
03/31/2034

Spatial Reference
Name: NAD 1927 BLM Zone 15N
PCS: NAD 1927 BLM Zone 15N
GCS: GCS North American 1927
Datum: North American 1927
Projection: Transverse Mercator
Central Meridian: -93.0000
Latitude of Origin: 0.0000
Longitude of Origin: 0.0000
False Easting: 1,640,416.6667
False Northing: 0.0000
Scale Factor: 0.9996
Map Units: Foot US
Authority: EPSG
WKID: 32065

Legend

- ◇ K1_PLET
- Oil Pipelines (Active)
- Gas Pipelines (Active)
- KE#2_PSL



Green Canyon Block 40 "Katmai East" Field
Gulf of Mexico

**BATHYMETRY MAP
KATMAI EAST FIELD**

Date Saved: 6/4/2025 9:17 AM Author: KGallatin
Name: GC40_Katmai_East_DOCD_Prop_#2_Bathymetry_20250530_KDG

Eric Berger

From: notification@pay.gov
Sent: Thursday, September 18, 2025 10:57 AM
To: Eric Berger
Subject: Pay.gov Payment Confirmation: BOEM Development/DOCD Plan - BD



Caution: External (notification@pay.gov)

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Talos Policy: Never send money without verbal confirmation.

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Application Name: BOEM Development/DOCD Plan - BD
[Pay.gov](#) Tracking ID: 27RH05TC
Agency Tracking ID: 77159595856
Transaction Type: Sale
Transaction Date: 09/18/2025 11:57:19 AM EDT
Account Holder Name: Melissa Sassella
Transaction Amount: \$5,565.00
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): 34536
Area-Block: Green Canyon GC, 40
Type-Wells: Supplemental Plan, 1

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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
NPDES	EPA	Pending
Rig Emergency Evacuation Plan	USCG	Pending
Pipeline Application	BSEE	Pending
Application for Permit to Drill (APD)	BSEE	Pending
Coastal Management Certification	LA Office of Coastal Management	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.

Product Name	Amount to be Used	Reference Number
Bentonite	100 50-lb bags	CAS #1302-78-9
PureDrill IA-35	500 bbls	CAS #178603-63-9

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) = 36.7	ASTM D4052
2) Flash Point (°C) = N/A	ASTM D93/IP34
3) Pour Point (°C) = -17.2	ASTM D97
4) Viscosity (Centipose at 25 °C) = 4.46	ASTM D445
5) Wax Content (wt %) = N/A	Precipitate with 2-butanon/dichloromethane (1 to 1 volume) at -10 °C
6) Asphaltene Content (wt %) = 1.3%	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 = 528	ASTM D2892 (TBP distillation), or ASTM D2887/5307
9) Sulphur (wt %) = 0.5	ASTM D4294

Oil from one well
Area / Block = GC 40
BSEE Platform ID = 1500
API Well No. = 60-811-40623-00
Completion Perforation Interval = 26,105-26,240'MD
BOEM Reservoir Name = PROPRIETARY INFORMATION
Sample Date = 08/28/2014
Sample No. (if more than one is taken) = RFS ID No. 41621-30

E) NEW OR UNUSUAL TECHNOLOGY

Talos QN Exploration LLC (Talos) proposes the use of MPD to execute the proposed drilling activities.

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, BOEM company number 03672, has demonstrated oil spill financial responsibility for the facilities proposed in this EP according to 30 CFR Part 553; and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities".

H) DEEPWATER WELL CONTROL STATEMENT

Talos QN Exploration LLC (01834) 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

Talos QN Exploration LLC focuses on an integrated approach to a loss of well control event (blowout), including prevention, intervention/containment, and recovery. We believe the best way to manage blowouts is to keep them from occurring. A significant amount of time and effort goes into the design and execution of wells and into building and maintaining a competent staff whose primary focus is the construction of safe and environmentally sound wells.

Talos QN Exploration LLC is a member of Helix Well Containment Group (HWCG) and has an agreement with Clean Gulf Associates and Helix Energy Solutions Group which provides access to containment equipment owned and operated by Helix Energy Solutions. The containment equipment is collectively described as "The Helix Fast Response System" which consists of "Capping Stacks" and surface equipment which may be used for processing well fluids. Talos QN Exploration LLC will prepare and provide a detailed Well Containment Plan (WCP) for its intended operations that is consistent with NTL 2010-N06 and other requirements imposed by regulatory authorities. The WCP will incorporate applicable lessons learned from the Macondo response and other industry workshops.

The Worst Case Discharge (WCD) blowout scenario of 47,650 bbls/d for this plan is calculated for proposed location GC 40 and is based on NTL No. 2010-N06 and the subsequent Frequently Asked Questions (FAQ). The WCD does not take into account potential flow mitigating factors such as bridging, obstructions in the wellbore, reservoir barriers.

Blowout Scenario:

The proposed well has drilled the production hole interval with all potential producible hydrocarbon sands 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:

JCC (J. Connor Consulting, Inc) has been contracted to perform the detailed engineering calculations for WCD flow rate estimates. Geological and geophysical inputs from nearby offset wells were used to provide the basis for the estimate.

The estimate worst case discharge (all sands flowing continuously):

- Oil: 47,650 BOPD
- Gas: 1,059 MMSCFD
- Water: 566,600 BWPD

Maximum duration of the potential blowout:

The duration of the blowout is dependent on the characteristics of the blowout. The flow will continue until the well is capped, a relief well is drilled, or the well bridges over.

Scenarios exist in which the duration of the WCD has the potential to flow from hours to months depending on the condition of the well at the time of the discharge as outlined below:

The well could bridge over due to wellbore instability which should happen relatively early in the WCD scenario.

- Containment blowout preventer equipment (BOPE) is installed and closed using a prescribed procedure shutting in the well and eliminating the discharge. This would require 7 – 21 days to accomplish – this time may be impacted by any combination of circumstances, such as weather, air quality, and/or debris removal operations. The range for the worst case volume discharge is between 0.33 and 1.0 million cumulative barrels of oil.
- Damaged riser material may need to be removed prior to any containment equipment installation, which could take considerable time depending on the amount and complexity of debris. It could take several weeks to a few months to clear a connection for the BOPE to eliminate the release of fluid.
- If all intervention attempts are unsuccessful, the well could flow until intercepted and killed by a relief well. The estimated time to drill a relief well is approximately 187 days which includes the time to secure a DP rig and bring it to the location. This is the worst case duration for the blowout and the associated worst case volume discharge is 8.9 million cumulative barrels of oil.

Potential of well to bridge over:

Due to the unrestricted flow of a WCD scenario, the well has the potential to experience a downhole rock failure. The primary failure mechanism would be wellbore instability caused by the reduced wellbore pressure. The in-situ stresses that exist in the reservoir rock are held in place by the hydrostatic pressure of the weighted drilling fluid in the wellbore. If the wellbore pressure is reduced, the high in situ stresses are no longer opposed by the weighted drilling fluid and the in-situ rock may fail and collapse into the wellbore causing the wellbore to bridge over where the failed rock fragments accumulate and lodge downhole to prevent the well discharge from continuing. The presence of water in the blowout fluid increases the potential for bridging to occur because of shale hydration and swelling.

Subsea Control and Containment:

Talos Energy Offshore 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, 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 proposed SHL is free of pipelines and other obstructions. The seafloor is free of any obstructions near the proposed well center. As of September 8, 2025 there are 16 rigs in the USGOM which are “active” and capable of drilling a relief well. 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 1,500-2,000’ from the blowout well. The final rig location will be influenced by operator, contractor, BSEE and depth of intersection 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.

Estimated Time to Drill a Relief Well:

Given the current availability of suitable rigs in the GoM, a candidate rig could be identified within 1-2 days and mobilization and contracting commenced. Backup tubulars and wellhead systems are maintained in stock for each well. Mobilization of the rig, as well as mobilization of equipment and services to the rig could be completed in 18 days, concurrent with contract execution. As per current well time estimates and based on the estimated number of ranging runs required to intercept the well the full relief well time estimate is presented in the table below.

Description	Estimated Days	Estimated Cumulative Days
Well control assessment	2	2
Contract and mobilize rig, source equipment	18	20
Drill to detection depth to begin mag-ranging	60	80
Mag-range prior to setting 14" casing	74	154
Run and cement 14" casing	4	158
Drill out, mag-range, intersect	25	183
R/U pumping equipment and perform kill	5	188

Relief Well Time Estimate Assumptions:

- 35% NPT
- Total of 16 ranging runs
- MPD required below salt

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 well 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. 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 the ability of Talos 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 and Site Clearance Letter proposed location was previously approved by letter dated January 21, 2020 under Plan Control No. N-1007.

F) SHALLOW HAZARDS ASSESSMENT
The Shallow Hazard Assessment was previously approved by letter dated January 21, 2020 under Plan Control No. N-1007.

G) HIGH RESOLUTION SEISMIC LINES
PROPRIETARY INFORMATION

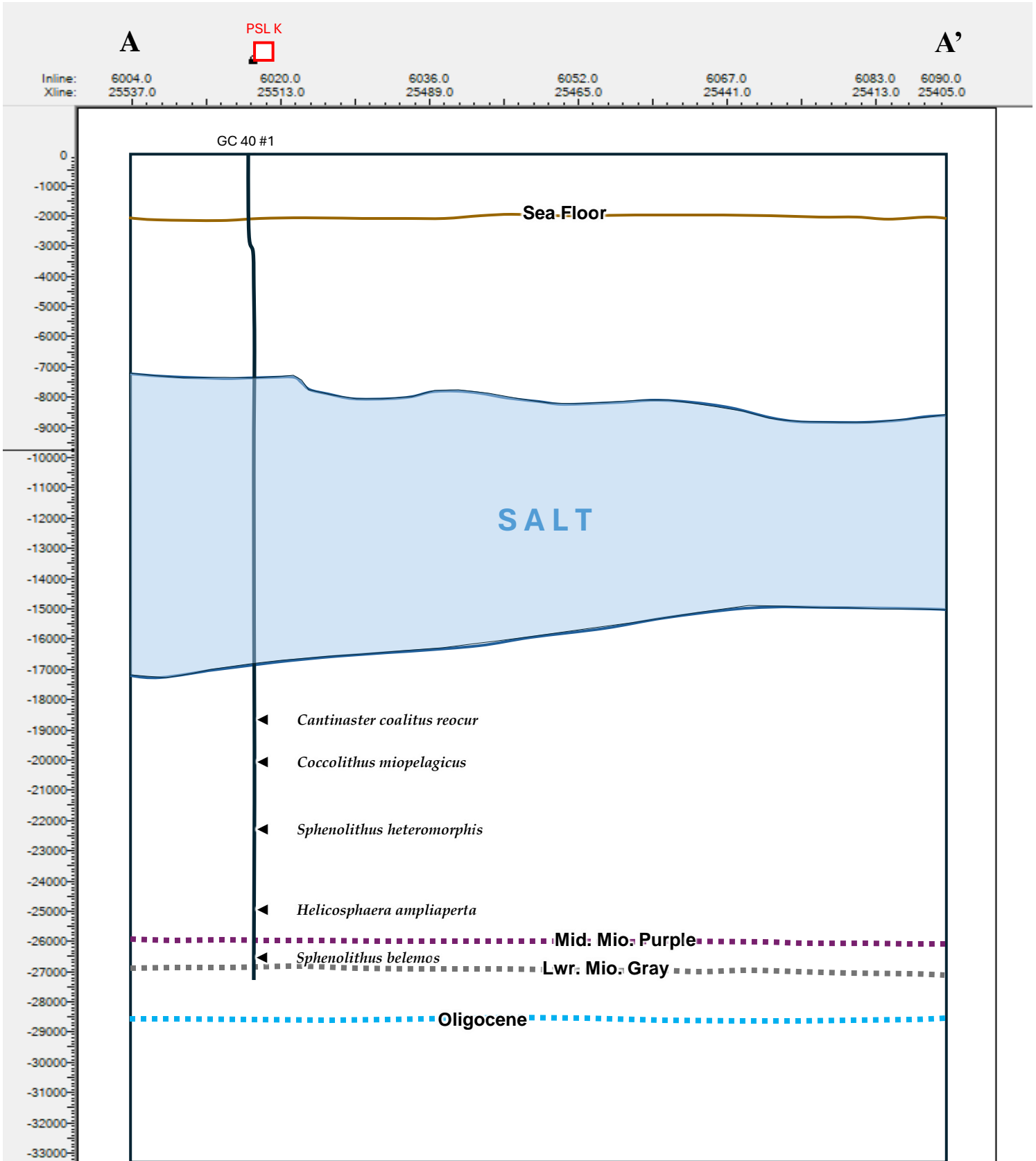
H) STRATIGRAPHIC COLUMN
PROPRIETARY INFORMATION

I) TIME VS DEPTH TABLES
Sufficient well control data for the target areas proposed in this DOCD exists; therefore, seismic time versus depth tables for the proposed well locations are not required.

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.

GREEN CANYON BLOCK 40 KATMAI EAST FIELD LINE OF SECTION A – A' Public Copy



**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), Lease No, OCS-G34536 has been classified by BOEM as H₂S absent under the following Plans:

- Initial Exploration Plan Control No. N-9778 approved on 03/19/2014
- Initial Exploration Plan Control No. N-9910 approved on 12/01/20215
- Supplemental Exploration Plan Control No. S-7870 approved on 03/30/2018
- Initial Development Operations Coordination Document Control No. N-10079 approved on 01/21/2020

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

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as Talos QN Exploration LLC is not proposing any activities in water depths equal to or greater than 984 feet.

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 this is a Development Operations Coordination Document.

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

In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as the location is in an area and block with a water depth less than 984 feet.

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 novaeangliae*), 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 oxyrinchus desotoi*). The subject area(s) and block(s) is not designated as a critical habitat for any of these species. Talos Energy 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 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 archaeological and geohazard assessment titled, "Archaeological, Engineering & Hazard Assessment Proposed 'Katmai' Pipeline & Umbilical Routes," was conducted from Green Canyon 40 to South Timbalier 308 in June 2018 by Oceaneering International, Inc (OII). OII assigned the report Project Number 198305. It was

previously approved under Plan Control No. N-10079 approved on January 21, 2020.

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 550.217 and 30 CFR 550.248, 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 Table 2 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.

B) PROJECTED OCEAN DISCHARGES

In accordance with 30 CFR 550.217 and 30 CFR 550.248, 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 Table 1 entitled "Wastes you will transport and/or dispose of onshore" 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

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	72000 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	3840 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	9680 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	23040 bbls/well	240 bbls/day/well	USCG approved MSD with chlorination and discharge overboard
Sanitary waste	treated sanitary waste from living quarters	18432 bbls/well	192 bbls/day/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	3781 bbls/well	288 bbls/hr/well	discharge overboard
Will you conduct well treatment, completion, or workover?				
Well treatment fluids	N/A	N/A	N/A	N/A
Well completion fluids	Calcium Bromide & Glycol	14,000 bbls	N/A	Completion fluid is recycled 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	9600 bbls/well	100 bbls/day/well	discharge overboard
Blowout prevent fluid	Water-based hydraulic control fluid	192 bbls/well	2 bbls/day/well	discharged from vent ports on BOP stack
Uncontaminated Ballast water	Uncontaminated seawater	384000 bbls/well	4000 bbls/day/well	per MARPOL regulations
Rig Wash Water	Fresh Water & Soap	4800 bbls/well	50 bbls/day/well	discharge overboard
Uncontaminated Bilge water	Uncontaminated bilge water	1920 bbls/well	20 bbls/day/well	discharge overboard
Excess cement at seafloor	Water, CaCl Class H cement & rheological modifiers	2000 bbls/well	1000 bbls/day for 2 days/well (only when the 28" & 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 28" & 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.				

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

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

Projected generated waste			Projected ocean discharges		Project Downhole Disposal
Type of Waste	Composition	Projected Amount	Discharge rate	Discharge Method	Answer
drilling occur ? If yes, you should list muds and cuttings			Yes		
Water-based drilling fluid	Water based drilling fluids used while drilling riserless	72000 bbls/well	9000 bbls/day/well	discharge at seafloor during riserless operations	N
Cuttings wetted with water-based fluid	Cuttings generated while using water based drilling fluids in riserless operations	3840 bbls/well	480 bbls/day/well	discharge at seafloor during riserless operations	N
Cuttings wetted with synthetic-based fluid	Cuttings generated while using synthetic based drilling fluid	9680 bbls/well	110 bbls/day/well	dried & discharge overboard	N
humans be there? If yes, expect conventional waste					
Domestic waste	grey water from living quarters	23040 bbls/well	240 bbls/day/well	USCG approved MSD with chlorination and discharge overboard	N
Sanitary waste	treated sanitary waste from living quarters	18432 bbls/well	192 bbls/day/well	USCG approved MSD with chlorination and discharge overboard	N
ere a deck? If yes, there will be Deck Drainage					
Deck Drainage	washwater, rain water and deck drainage	3781 bbls/well	288 bbls/hr/well	discharge overboard	N
you conduct well treatment, completion, or workover?					
Well treatment fluids	N/A	N/A	N/A	N/A	N/A
Well completion fluids	Calcium Bromide & Glycol	14,000 bbls	N/A	Completion fluid is recycled from well to well and is not discharged	N
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	9600 bbls/well	100 bbls/day/well	discharge overboard	N/A
Blowout prevent fluid	Water-based hydraulic control fluid	192 bbls/well	2 bbls/day/well	discharged from vent ports on BOP stack	N
Uncontaminated Ballast water	Uncontaminated seawater	384000 bbls/well	4000 bbls/day/well	per MARPOL regulations	N
Rig Wash Water	Fresh Water & Soap	4800 bbls/well	50 bbls/day/well	discharge overboard	N
Uncontaminated Bilge water	Uncontaminated bilge water	1920 bbls/well	20 bbls/day/well	discharge overboard	N
Excess cement at seafloor	Water, CaCl Class H cement & rheological modifiers	2000 bbls/well	1000 bbls/day for 2 days/well (only when the 28" & 22" casing are run)	discharge at seafloor	N
Cement Spacer	Water base fluid, viscosifier, barite & gel	200 bbls/well	100 bbls/day for 2 days/well (only when the 28" & 22" casing are run)	discharge at seafloor	N
Fire water	Seawater	NA	NA	discharge overboard	N
Uncontaminated Cooling water	Seawater	NA	NA	discharge overboard	N
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.					

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

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

Projected generated waste			Projected ocean discharges	
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	72000 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	3840 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	9680 bbls/well	110 bbls/day/well	dried & discharge overboard
humans be there? If yes, expect conventional waste				
Domestic waste	grey water from living quarters	23040 bbls/well	240 bbls/day/well	USCG approved MSD with chlorination and discharge overboard
Sanitary waste	treated sanitary waste from living quarters	18432 bbls/well	192 bbls/day/well	USCG approved MSD with chlorination and discharge overboard
ere a deck? If yes, there will be Deck Drainage				
Deck Drainage	washwater, rain water and deck drainage	3781 bbls/well	288 bbls/hr/well	discharge overboard
you conduct well treatment, completion, or workover?				
Well treatment fluids	N/A	N/A	N/A	N/A
Well completion fluids	Calcium Bromide & Glycol	14,000 bbls	N/A	Completion fluid is recycled 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	9600 bbls/well	100 bbls/day/well	discharge overboard
Blowout prevent fluid	Water-based hydraulic control fluid	192 bbls/well	2 bbls/day/well	discharged from vent ports on BOP stack
Uncontaminated Ballast water	Uncontaminated seawater	384000 bbls/well	4000 bbls/day/well	per MARPOL regulations
Rig Wash Water	Fresh Water & Soap	4800 bbls/well	50 bbls/day/well	discharge overboard
Uncontaminated Bilge water	Uncontaminated bilge water	1920 bbls/well	20 bbls/day/well	discharge overboard
Excess cement at seafloor	Water, CaCl Class H cement & rheological modifiers	2000 bbls/well	1000 bbls/day for 2 days/well (only when the 28" & 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 28" & 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.

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

Please specify whether the amount reported is a total or per well					
Projected generated waste		Solid and Liquid Wastes transportation	Waste Disposal		
Type of Waste	Composition	Transport Method	Name/Location of Facility	Amount	Disposal Method
Will drilling occur ? If yes, fill in the muds and cuttings.					
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 ₂ , 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	10000 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 ₂ , Acrylate Copolymer, LCM, Limestone, Lime, and invert emulsifiers and wetting agent contaminated with formation oil	Cuttings boxes on supply vessels	ECOSERV/Fourchon	10000 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 & viscosifiers	Hull Storage tanks or DOT tanks on supply vessels	R360 Environmental Solutions/Fourchon	1000 bbls/well	Injection well or recycled
Excess Water Base Mud	Freshwater, CaCl ₂ , NaCl, Barite, Bentonite, Lime, XCD Polymer	Below deck storage tanks on offshore support vessels	Mud Supplier Facility, Fourchon, LA	30000 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 & viscosifiers, 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	1000 bbls/well	Recycle or 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 or 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 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 EP'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 ₂ S 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

COMPANY	Talos QN Exploration LLC
AREA	South Timaballier
BLOCK	308
LEASE	G21685
FACILITY	ST 308 A (Tarantula) (Complex ID 1500)
WELL	
COMPANY CONTACT	Chris Mullins
TELEPHONE NO.	(337) 521-2084
REMARKS	This AQR is being submitted to address air quality impact for 2025 through 2034 based on current and projected platform equipment and operations.

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER OF PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		
2033		
2034		

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 3.1-18 & 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/ttnchie1/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/ttnchie1/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/ttnchie1/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/ttnchie1/ap42/ch03/final/c03s04.pdf
Diesel Boiler	lbs/bbl	0.0840	0.0420	0.0105	0.0089	1.0080	0.0084	5.14E-05	0.2100	0.0336	AP42 1.3-6; Pb and NH3: WebFIRE (08/2018)	9/98 and 5/10	https://cfpub.epa.gov/webfire/
Diesel Turbine	g/hp-hr	0.0381	0.0137	0.0137	0.0048	2.7941	0.0013	4.45E-05	0.0105	N/A	AP42 3.1-1 & 3.1-2a	4/00	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s01.pdf
Dual Fuel Turbine	g/hp-hr	0.0381	0.0137	0.0137	0.0048	2.7941	0.0095	4.45E-05	0.3719	0.0000	AP42 3.1-18 & 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 NELTSP 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 NELTSP 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 NELTSP (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 NELTSP refer to Diesel Recip. > 600 hp reference	3/19	
Natural Gas Heater/Boiler/Burner	lbs/MMscf	7.60	1.90	1.90	0.60	190.00	5.50	5.00E-04	84.00	3.2	AP42 1.4-1 & 1.4-2; Pb and NH3: WebFIRE (08/2018)	7/98 and 8/18	https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf
Combustion Flare (no smoke)	lbs/MMscf	0.00	0.00	0.00	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Combustion Flare (light smoke)	lbs/MMscf	2.10	2.10	2.10	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	https://www3.epa.gov/ttnchie1/ap42/ch13/final/C13S05_02-05-18.pdf
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.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
Glycol Dehydrator	tons/yr/dehydrator						19.240				2011 Gulfwide Inventory, Avg emiss (upper bound of 95% CI)	2014	https://www.boem.gov/environment/environmental-studies/2011-gulfwide-emission-inventory
Cold Vent	tons/yr/vent						44.747				2014 Gulfwide Inventory, Avg emiss (upper bound of 95% CI)	2017	https://www.boem.gov/environment/environmental-studies/2014-gulfwide-emission-inventory
Waste Incinerator	lb/ton		15.0	15.0	2.5	2.0	N/A	N/A	20.0	N/A	AP 42 2.1-12	10/96	https://www3.epa.gov/ttnchie1/ap42/ch02/final/c02s01.pdf
On-Ice - Loader	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Other Construction Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Other Survey Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	https://www.epa.gov/moves/nonroad2008a-installation-and-updates
On-Ice - Tractor	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Truck (for gravel island)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Truck (for surveys)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
Man Camp - Operation (max people/day)	tons/person/day		0.0004	0.0004	0.0004	0.006	0.001	N/A	0.001	N/A	BOEM 2014-1001	2014	https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/BOEM_Newsroom/Library/Publications/2014-1001.pdf
Vessels - Ice Management Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NELTSP 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 NELTSP refer to Diesel Recip. > 600 hp reference	3/19	

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

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

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

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

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																			
Talos ON Exploration LLC	South Timabalter	308	G21885	ST 308 A (Timabalter) (Complex ID: 1830)		Chris Mullins	(337) 521-2084	This AQR is being submitted to address air quality impact for 2025 through 2034 based on current and projected platform equipment and operations.																			
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	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	VESSLS- 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	0.00	
	VESSLS- 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	0.00	
	VESSLS- 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	0.00	
	VESSLS- 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	0.00	
	Vessels - Diesel Boiler		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	
PIPELINE INSTALLATION	VESSLS - Pipeline Laying Vessel - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSLS - Pipeline Burying - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY INSTALLATION	VESSLS - 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	0.00	
PRODUCTION	RECIP-<600hp Diesel - TAR East Gen (Cummins QSB7-G4-NR3)	TCC-E	261	13.427406	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	--	1.74	--	2.52	2.52	2.52	0.07	35.54	2.62	--	7.64	--		
	RECIP-<600hp Diesel - TAR West Gen (Cummins QSB7-G4-NR3)	TCC-W	261	13.427406	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	--	1.74	--	2.52	2.52	2.52	0.07	35.54	2.62	--	7.64	--		
	RECIP-<600hp Diesel - East Crane (Caterpillar 3406)	E-CRANE	305	15.69103	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--		
	RECIP-<600hp Diesel - West Crane (Caterpillar 3406)	W-CRANE	305	15.69103	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--		
	RECIP-<600hp Diesel - Air Compressor Cellar (Cummins 4B3.9)	AIRCMP	130	6.6879801	160.51	24	365	0.29	0.29	0.29	0.01	4.04	0.30	--	0.87	--	1.26	1.26	1.26	0.04	17.70	1.31	--	3.80	--		
	RECIP-<600hp Diesel - Air Compressor South (John Deere PE60681688751)	AIRCMP2	185	9.5175101	228.42	24	365	0.41	0.41	0.41	0.01	5.75	0.42	--	1.24	--	1.79	1.79	1.79	0.05	25.19	1.86	--	5.41	--		
	RECIP-<600hp Diesel - Life Capsule 1 (Farman S30)	CAPSULE1	30	1.54338	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	--	0.20	--	0.00	0.00	0.00	0.00	0.02	0.00	--	0.01	--		
	RECIP-<600hp Diesel - Life Capsule 2 (Farman S30)	CAPSULE2	30	1.54338	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	--	0.20	--	0.00	0.00	0.00	0.00	0.02	0.00	--	0.01	--		
	RECIP-<600hp Diesel - Fire Water Pump 1 (CAT 3406TA)	FWPUMP-1	425	21.86465	524.75	1	52	0.94	0.94	0.94	0.03	13.21	0.97	--	2.84	--	0.02	0.02	0.02	0.00	0.34	0.03	--	0.07	--		
	RECIP->600hp Diesel - Generator (Caterpillar D3508TA, LAN-7400)	DIE-GEN2	910	46.8159601	1123.58	24	365	0.64	0.64	0.64	0.01	21.87	0.58	--	5.02	--	2.81	1.60	1.56	0.05	95.78	2.55	--	21.97	--		
	Natural Gas Turbine - Gen#1 (Solar Centaur 50; LAN 7100)	GEN-1	4600	43809.5238	1051428.57	24	365	--	0.09	0.09	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--		
	Natural Gas Turbine - Gen#2 (Solar Centaur 50; LAN-7200)	GEN-2	4600	43809.5238	1051428.57	24	365	--	0.09	0.09	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--		
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #1 (EAL-3100)	HEATER-1	5	4762	114285.71	24	365	0.04	0.01	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75	0.07		
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #2 (EAL-3101)	HEATER-2	5	4762	114285.71	24	365	0.04	0.01	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75	0.07		
MISC		BPD	SCF/HR	COUNT																							
	STORAGE TANK1	T-01		2	0	0		--	--	--	--	--	--	0.00	--	--	--	--	--	--	0.00	--	--	--	--	--	
	COMBUSTION FLARE - medium smoke3	FL-HP	5000		24	365	0.05	0.05	0.05	0.00	0.36	0.18	--	1.63	--	0.23	0.23	0.23	0.01	1.56	0.79	--	7.13	--			
	COMBUSTION FLARE - medium smoke3	FL-HP	5000		24	365	0.05	0.05	0.05	0.00	0.36	0.18	--	1.63	--	0.23	0.23	0.23	0.01	1.56	0.79	--	7.13	--			
	COLD VENT2	FL-LP-VENT		3	24	365	--	--	--	--	--	--	30.65	--	--	--	--	--	--	--	134.24	--	--	--	--		
	COLD VENT2	FL-HP-VENT		3	24	365	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	COLD VENT	FL-ATM-VENT		3	24	365	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
	FUGITIVES	FE-01		8900	24	365	--	--	--	--	--	--	4.45	--	--	--	--	--	--	--	19.49	--	--	--	--		
	GLYCOL DEHYDRATOR	GR-SCC		1	24	365	--	--	--	--	--	--	4.39	--	--	--	--	--	--	--	19.24	--	--	--	--		
DRILLING WELL TEST	Liquid Flaring		0					0.00	0.00	0.00	0.00	0.00	0.00	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 - no smoke		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	--		
	COMBUSTION FLARE - light smoke		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	--		
	COMBUSTION FLARE - medium smoke		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	--		
	COMBUSTION FLARE - heavy smoke		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	--		
ALASKA-SPECIFIC SOURCES	VESSLS	KW			HR/D	D/YR																					
	VESSLS - Ice Management Diesel		0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00		
2025 Facility Total Emissions								5.08	4.92	4.91	0.19	113.89	45.11	0.00	29.52	0.03	12.19	11.50	11.47	0.57	357.05	187.12	0.00	0.00	88.83	0.13	
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																										
	62.0																										
DRILLING	VESSLS- 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		
	VESSLS - 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		
	VESSLS - 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		
PIPELINE INSTALLATION	VESSLS - Support Diesel, Laying		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSLS - Support Diesel, Burying		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSLS - 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		
FACILITY INSTALLATION	VESSLS - Support Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00																

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT										PHONE	REMARKS														
Talos ON Exploration LLC	South Timbalier	308	G21885	ST 308 A (Timbalier) (Complex ID 199)		Chris Mullins										(637) 521-2084	This AQR is being submitted to address air quality impact for 2025 through 2034 based on current and projected platform equipment and operations.														
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR										ESTIMATED TONS														
							TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3							
			HP	GAL/HR	GAL/D																										
			MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																								
			Diesel Engines																												
			Nat Gas Engines																												
			Burners																												
DRILLING	VESSELS - Drilling - Propulsion Engine - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00			
	VESSELS - Drilling - Propulsion Engine - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00			
	VESSELS - Drilling - Propulsion Engine - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Drilling - Propulsion Engine - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Diesel Boiler		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Vessels - Drilling Prime Engine, Auxiliary		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PIPELINE INSTALLATION	VESSELS - Pipeline Laying Vessel - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Pipeline Burying - Diesel		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	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	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRODUCTION	RECIP -<600hp Diesel - TAR East Gen (Cummins Q587-G4-NR3)	TCC-E	261	13.42740602	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	--	1.74	--	2.52	2.52	2.52	0.07	35.54	2.62	--	7.64	--						
	RECIP -<600hp Diesel - TAR West Gen (Cummins Q587-G4-NR3)	TCC-W	261	13.42740602	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	--	1.74	--	2.52	2.52	2.52	0.07	35.54	2.62	--	7.64	--						
	RECIP -<600hp Diesel - East Crane (Caterpillar 3406)	E-CRANE	305	15.69103002	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--						
	RECIP -<600hp Diesel - West Crane (Caterpillar 3406)	W-CRANE	305	15.69103002	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--						
	RECIP -<600hp Diesel - Air Compressor Cellar (Cummins 4B3.9)	AIRCOMP	130	6.68798001	160.51	24	365	0.29	0.29	0.29	0.01	4.04	0.30	--	0.87	--	1.26	1.26	1.26	0.04	17.70	1.31	--	3.80	--						
	RECIP -<600hp Diesel - Air Compressor South (John Deere PE0068T888751)	AIRCOMP2	185	9.517510014	228.42	24	365	0.41	0.41	0.41	0.01	5.75	0.42	--	1.24	--	1.79	1.79	1.79	0.05	25.19	1.86	--	5.41	--						
	RECIP -<600hp Diesel - Life Capsule 1 (Fayman S30)	CAPSULE1	30	1.543380002	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	--	0.20	--	0.00	0.00	0.00	0.00	0.02	0.00	--	0.01	--						
	RECIP -<600hp Diesel - Life Capsule 2 (Fayman S30)	CAPSULE2	30	1.543380002	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	--	0.20	--	0.00	0.00	0.00	0.00	0.02	0.00	--	0.01	--						
	RECIP -<600hp Diesel - Fire Water Pump 1 (CAT 3406TA)	FWPUMP-1	425	21.86455003	524.75	1	52	0.94	0.94	0.94	0.03	13.21	0.97	--	2.84	--	0.02	0.02	0.02	0.00	0.34	0.03	--	0.07	--						
	RECIP ->600hp Diesel - Generator (Caterpillar D3508TA; LAN-7400)	DIE-GEN2	910	46.81586007	1123.58	24	365	0.64	0.32	0.36	0.01	21.87	0.58	--	5.02	--	2.81	1.60	1.56	0.05	95.78	2.55	--	21.97	--						
	Natural Gas Turbine - Gen#1 (Solar Centaur 50; LAN-7100)	GEN-1	4600	43809.52381	1051428.57	24	365	--	0.09	0.09	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--						
	Natural Gas Turbine - Gen#2 (Solar Centaur 50; LAN-7200)	GEN-2	4600	43809.52381	1051428.57	24	365	--	0.09	0.09	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--						
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #1 (EAL-3100)	HEATER-1	5	4762	114285.71	24	365	0.04	0.01	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75	0.07						
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #2 (EAL-3101)	HEATER-2	5	4762	114285.71	24	365	0.04	0.01	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75	0.07						
	MISC.			BPD	SCF/HR	COUNT																									
		STORAGE TANK ¹	T-01		2	0	0	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--					
		COMBUSTION FLARE - medium smoke3	T-02		5000	24	365	0.05	0.05	0.05	0.00	0.36	0.18	--	1.63	--	0.23	0.23	0.23	0.01	1.56	0.79	--	7.13	--						
COMBUSTION FLARE - medium smoke3		FL-HP		5000	24	365	0.05	0.05	0.05	0.00	0.36	0.18	--	1.63	--	0.23	0.23	0.23	0.01	1.56	0.79	--	7.13	--							
COLD VENT ²		FL-LP-VENT		3	24	365	--	--	--	--	--	30.65	--	--	--	--	--	--	--	--	--	134.24	--	--	--						
COLD VENT ²		FL-HP-VENT																													
COLD VENT		FL-ATM-VENT																													
FUGITIVES		FE-01			8900	24	365	--	--	--	--	4.45	--	--	--	--	--	--	--	--	--	19.49	--	--	--						
GLYCOL DEHYDRATOR	FE-02			1	24	365	--	--	--	--	4.39	--	--	--	--	--	--	--	--	--	19.24	--	--	--							
DRILLING WELL TEST	Liquid Flaring		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	COMBUSTION FLARE - no smoke		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	--							
	COMBUSTION FLARE - light smoke		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	--							
	COMBUSTION FLARE - medium smoke		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	--							
	COMBUSTION FLARE - heavy smoke		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	--							
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	0.00					
2028	Facility Total Emissions						5.08	4.92	4.91	0.19	113.89	45.11	0.00	29.52	0.03	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13							
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																														
	62.0																														
DRILLING	VESSELS - Crew Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Supply Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Tugs Diesel		0	0	0	0	0.00																								

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																
Talos ON Exploration LLC	South Timbalier	308	G21885	ST 308 A (Timbalier) (Complex ID 199)		Chris Mullins	(937) 521-2084	This AQR is being submitted to address air quality impact for 2025 through 2034 based on current and projected platform equipment and operations.																
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR										ESTIMATED TONS							
	Diesel Engines		HP	GAL/HR	GAL/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
	Nat Gas Engines		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																	
DRILLING	VESSELS - Drilling - Propulsion Engine - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	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
	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
	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
	Vessels - Diesel Boiler		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	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
PIPELINE INSTALLATION	VESSELS - Pipeline Laying Vessel - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Pipeline Burying - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
PRODUCTION	RECIP - <600hp Diesel - TAR East Gen (Cummins Q587-G4-NR3)	TCC-E	261	13.42740602	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	1.74	2.52	2.52	2.52	0.07	35.54	2.62	7.64			
	RECIP - <600hp Diesel - TAR West Gen (Cummins Q587-G4-NR3)	TCC-W	261	13.42740602	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	1.74	2.52	2.52	2.52	0.07	35.54	2.62	7.64			
	RECIP - <600hp Diesel - East Crane (Caterpillar 3406)	E-CRANE	305	15.69103002	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	2.04	0.25	0.25	0.25	0.01	3.46	0.26	0.74			
	RECIP - <600hp Diesel - West Crane (Caterpillar 3406)	W-CRANE	305	15.69103002	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	2.04	0.25	0.25	0.25	0.01	3.46	0.26	0.74			
	RECIP - <600hp Diesel - Air Compressor Cellar (Cummins 4B3.9)	AIRCOMP	130	6.68798001	160.51	24	365	0.29	0.29	0.29	0.01	4.04	0.30	0.87	1.26	1.26	1.26	0.04	17.70	1.31	3.80			
	RECIP - <600hp Diesel - Air Compressor South (John Deere PE0068T888751)	AIRCOMP2	185	9.517510014	228.42	24	365	0.41	0.41	0.41	0.01	5.75	0.42	1.24	1.79	1.79	1.79	0.05	25.19	1.86	5.41			
	RECIP - <600hp Diesel - Life Capsule 1 (Farman S30)	CAPSULE1	30	1.543380002	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	0.20	0.00	0.00	0.00	0.00	0.02	0.00	0.01			
	RECIP - <600hp Diesel - Life Capsule 2 (Farman S30)	CAPSULE2	30	1.543380002	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	0.20	0.00	0.00	0.00	0.00	0.02	0.00	0.01			
	RECIP - <600hp Diesel - Fire Water Pump 1 (CAT 3406TA)	FWPUMP-1	425	21.86455003	524.75	1	52	0.94	0.94	0.94	0.03	13.21	0.97	2.84	0.02	0.02	0.02	0.00	0.34	0.03	0.07			
	RECIP - >600hp Diesel - Generator (Caterpillar D3508TA; LAN-7400)	DIE-GEN2	910	46.81586007	1123.58	24	365	0.64	0.32	0.36	0.01	21.87	0.58	5.02	2.81	1.60	1.56	0.05	95.78	2.55	21.97			
	Natural Gas Turbine - Gen#1 (Solar Centaur 50; LAN-7100)	GEN-1	4600	43809.52381	1051428.57	24	365	0.09	0.09	0.09	0.03	14.72	0.10	3.77	0.38	0.38	0.11	64.47	0.42	16.52				
	Natural Gas Turbine - Gen#2 (Solar Centaur 50; LAN-7200)	GEN-2	4600	43809.52381	1051428.57	24	365	0.09	0.09	0.09	0.03	14.72	0.10	3.77	0.38	0.38	0.11	64.47	0.42	16.52				
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #1 (EAL-3100)	HEATER-1	5	4762	114285.71	24	365	0.04	0.01	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #2 (EAL-3101)	HEATER-2	5	4762	114285.71	24	365	0.04	0.01	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75
	MISC.	BPD		SCF/HR	COUNT																			
	STORAGE TANK ¹	T-01			2	0	0	--	--	--	--	0.00	--	--	--	--	--	--	--	0.00	--	--	--	--
	COMBUSTION FLARE - medium smoke3	FL-01		5000		24	365	0.05	0.05	0.05	0.00	0.36	0.18	1.63	0.23	0.23	0.23	0.01	1.56	0.79	7.13			
	COMBUSTION FLARE - medium smoke3	FL-HP		5000		24	365	0.05	0.05	0.05	0.00	0.36	0.18	1.63	0.23	0.23	0.23	0.01	1.56	0.79	7.13			
	COLD VENT ²	FL-LP-VENT			3	24	365	--	--	--	--	30.65	--	--	--	--	--	--	134.24	--	--	--	--	--
	COLD VENT ²	FL-HP-VENT						--	--	--	--		--	--	--	--	--	--		--	--	--	--	--
	COLD VENT	FL-ATM-VENT						--	--	--	--		--	--	--	--	--	--		--	--	--	--	--
	FUGITIVES	FE-01			8900	24	365	--	--	--	--	4.45	--	--	--	--	--	--	19.49	--	--	--	--	--
	GLYCOL DEHYDRATOR	FE-02						--	--	--	--	4.39	--	--	--	--	--	--	19.24	--	--	--	--	--
	GLYCOL DEHYDRATOR	FE-03						--	--	--	--		--	--	--	--	--	--		--	--	--	--	--
	GLYCOL DEHYDRATOR	GR-SCC			1	24	365	--	--	--	--		--	--	--	--	--	--		--	--	--	--	--
DRILLING WELL TEST	Liquid Flaring		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	0.00
	COMBUSTION FLARE - no smoke		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	0.00
	COMBUSTION FLARE - light smoke		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	0.00
	COMBUSTION FLARE - medium smoke		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	0.00
	COMBUSTION FLARE - heavy smoke		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	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							5.08	4.92	4.91	0.19	113.89	45.11	0.00	29.52	0.03	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																							
	62.0																							
DRILLING	VESSELS - Crew Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	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	
	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	
PIPELINE INSTALLATION	VESSELS - Support Diesel, Laying		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Support Diesel, Burying		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	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	
	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	
FACILITY INSTALLATION	VESSELS - Material Tug Diesel		0	0	0.00	0	0	0.00	0.00															

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL					
Talos QN Exploration LLC	South Timaballier	308	G21685	ST 308 A (Tarantula) (Complex ID 1500)						
Year	Facility Emitted Substance									
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	
2025	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2026	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2027	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2028	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2029	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2030	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2031	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2032	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2033	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2034	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
Allowable	2064.62			2064.62	2064.62	2064.62		53261.05		

**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	GC 40	GC 200	GC 40
Facility Designation	Katmai West #2	Katmai East #2	TA009	Katmai East #2
Distance to Shore (miles)	73	77	88	77
Volume				
Uncontrolled Blowout	421050.00	47650.00	54689.00	37132.00

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
Lease Term Pipelines Flowlines (on facility) Storage				
Total Volume	421050.00	47650.00	54689.00	37132.00
Type of Oil(s) (crude, condensate, diesel)	Crude	Crude	Crude	Crude
API Gravity	37.9	36.7	24.9	36.7

Since Talos QN Exploration LLC has the capacity to respond to the worst case spill scenario included in our Regional OSRP approved on August 1, 2024 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

As a basis for discussion in this section, it is assumed that a subsea blowout with uncontrollable release of formation fluids could result in liquid hydrocarbons being released into OCS waters at any time during the life cycle of a well.

6) OIL SPILL RESPONSE DISCUSSION

The following discussion relates to the response to an oil spill resulting from the activities proposed in this plan. Any oil spill response related activities for facilities included in this document are administered by Talos QN Exploration LLC's (Talos) Oil Spill Response Plan (OSRP). This OSRP meets all requirements contained in 30 CFR 250.

The Talos Regional OSRP (Control No. O-1082) was approved on August 1, 2024. By letter dated December 18, 2024, the update was found to be in compliance.

Additionally, Talos has the capability to respond, to the maximum extent practicable, to a worst case discharge or a substantial threat of such a discharge, for all of Talos's Gulf of Mexico facilities.

The worst case discharge for this plan is for GC 40 with 47,650 barrels per day. This was calculated using the guidance provided in NTL No. 2010-N06.

Included in the attachment(s) to this appendix is information pertaining to resources to be used in the event a spill occurs.

7) MODELING

In accordance with NTL 2008-G04, this information is not required for the activities proposed herein as the State of Florida is not an affected State, no surface facility is being installed in water depths greater than 1,312 feet, nor is a surface facility being installed in any water depth that supports a subsea development in water depths greater than 1,312 feet.

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 47,650 barrels of crude oil with an API gravity of 36.7°.

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 Regions available on the BOEM website. The results are shown in **Figure 1**. The BOEM OSRAM identifies a 5% probability of impact to the shorelines of Cameron Parish, Louisiana within 30 days. Cameron Parish includes the east side of Sabine Lake, Sabine National Wildlife Refuge, Calcasieu Lake, Lacassine National Wildlife Refuge (inland) and Grand Lake. Cameron Parish also includes the area along the coastline from Sabine Pass to Big Constance Lake in Rockefeller Wildlife Refuge. This region is composed of open public beaches, marshlands and swamps. It serves as a habitat for numerous birds, finfish and other animals, including several rare, threatened and endangered species.

Response

Talos QN Exploration LLC 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: GC 40, Well Loc K	Barrels of Oil
WCD Volume	47,650
Less 23% natural evaporation/dispersion	10,960
Remaining volume	36,690

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.

Talos QN Exploration LLC'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 the DC-3 aircraft and 4 sorties (8,000 gallons) from the Basler aircraft would provide a daily dispersant capability of 7,540 barrels. 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 spill response equipment, with a total derated skimming capacity of 135,639 barrels. Temporary storage associated with skimming equipment equals 16,498 barrels. If additional storage is needed, various storage barges with a total capacity 132,148 barrels may be mobilized and centrally located to provide temporary storage and minimize off-loading time. 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 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 vessels. All OSVs can put 20% of their deadweight in recovered oil into their liquid mud storage tanks and dual certificated OSVs can utilize 100% of liquid mud tank capacity for recovered oil storage. **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 Cameron Parish, Louisiana would depend upon existing environmental conditions. Shoreline protection may include the use of CGA's shoreline, near shore and shallow water skimmers with a total derated skimming capacity of 31,254 barrels. Temporary storage associated with skimming equipment equals 703 barrels. If additional storage is needed, one 35,000 barrel storage barge may be mobilized and centrally located to provide temporary storage and minimize off-loading time. Onshore response may include the deployment of shoreline boom on beach areas, or protection and sorbent boom on vegetated areas. A Master Service Agreement with AMPOL will ensure access to 81,450 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 QN Exploration LLC's contract Incident Management Team has access to the applicable ACP(s) and GRP(s).

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

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

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

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

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

Offshore Response Actions

Equipment Deployment

Surveillance

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

Dispersant application assets

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

Containment boom

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

Oceangoing Boom Barge

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

In-situ Burn assets

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

Dedicated off-shore skimming systems

General

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

CGA HOSS Barge

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

CGA 95' Fast Response Vessels (FRVs)

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

CGA FRUs

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

T&T Koseq Skimming Systems

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

Storage Vessels

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

Vessels of Opportunity (VOO)

- Use Talos QN Exploration LLC'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 ≥ 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 (C³)

- Publish, implement, and fully test an appropriate communications plan
- Design an operational scheme, maintaining a manageable span of control
- Designate and mark C³ vessels for easy aerial identification
- Designate and employ C³ aircraft for task forces, groups, etc.
- Use reconnaissance air craft and Rapid Response Teams (RAT) to confirm the presence of recoverable oil

On Water Recovery Group

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

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

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

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

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

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

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

Initial set-up and potential actions:

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

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

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

TF 1

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

TF 2

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

TF 3

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

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

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

TF 4

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

TF 5

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

TF 6

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

TF 7

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

CGA Minimum Acceptable Capabilities for Vessels of Opportunity (VOO)

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

Capability	FRU	KOSEQ	AquaGuard
Type of Vessel	Utility Boat	Offshore Supply Vessel	Utility Boat
Operating parameters			
Sea State	3-5 ft max	9.8 ft max	3-5 ft max
Skimming speed	≤1 kt	≤3 kts	≤1 kt
Vessel size			
Minimum Length	100 ft	200 ft	100 ft
Deck space for: <ul style="list-style-type: none"> • 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 QN Exploration LLC will take all possible measures to maximize the oil-to-skimmer encounter rate of all skimming systems, to include VOOs, as discussed in this section. VOOs will normally be placed within an On-water recovery unit as shown in figures below.

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

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

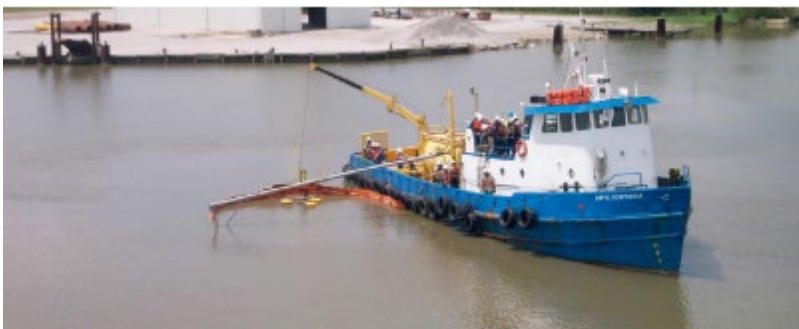
Tactical Overview

Mechanical Recovery – The FRU is designed to provide fast response skimming capability in the offshore and nearshore environment in a stationary or advancing mode. It provides a rated daily recovery capacity of 4,100 barrels. An additional boom reel with 440' of offshore boom can be deployed along with the FRU, and a second support vessel for boom towing, to extend the swath width when attached to the end of the fixed boom. The range and sustainability offshore is dependent on the VOO that the unit is placed on, but generally these can stay offshore for extended periods. The FRU works well independently or assigned with other on-water recovery assets in a task force. In either case, it is most effective when a designated aircraft is assigned to provide tactical direction to ensure the best placement in recoverable oil.

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

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

- 1 – VOO (100' to 165' Utility or Supply Vessel)
- 1 – Boom reel w/support vessel for towing
- 1 – Tank barge (offshore) for temporary storage
- 1 – Utility/Crewboat (supply)
- 1 – Designated spotter aircraft



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



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

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

Tactical Overview

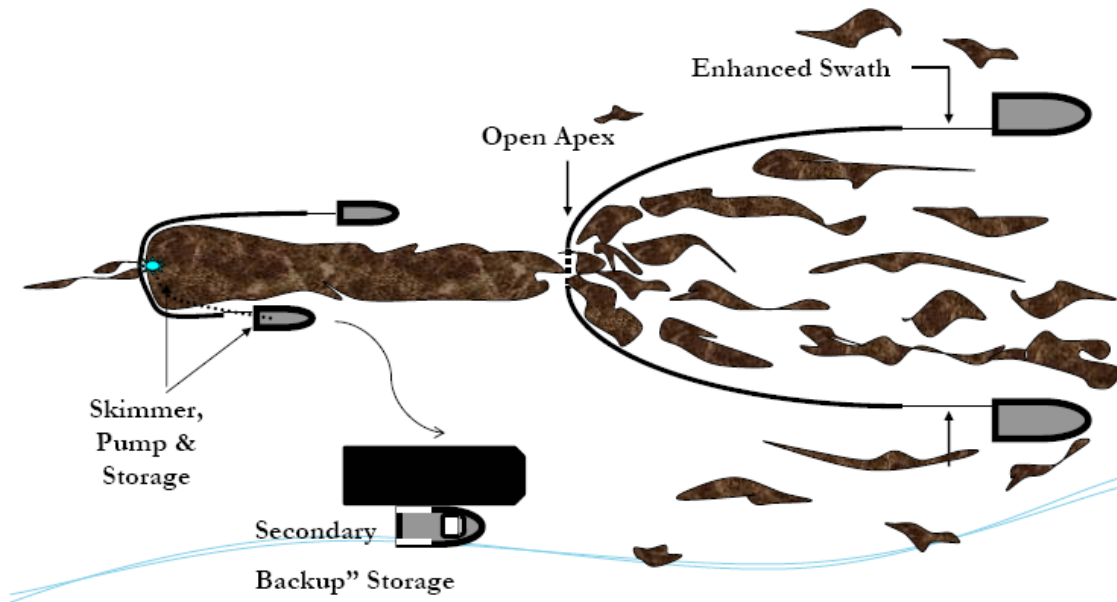
Mechanical Recovery – Deployed on large vessels of opportunity (VOO) the Koseq Rigid Sweeping Arms are high volume surge capacity deployed to increase recovery capacity at the source of a large oil spill in the offshore and outer nearshore environment of the Gulf Region. They are highly mobile and sustainable 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 – \geq 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 through 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 QN Exploration LLC's contracted resources as applicable
- Industry vessel are usually best for deployment of Vessel of Opportunity Skimming Systems (VOSS)
- Acquire additional resources as needed
- Consider use of local assets, i.e. fishing and pleasure craft
- Expect mission specific and safety training to be required
- Plan with the US Coast Guard for vessel inspections
- Operate with aerial spotter directing systems to oil patches

Shoreline Protection Operations

Response Planning Considerations

- Review appropriate Area Contingency Plan(s)
- Locate and review appropriate Geographic Response and Site Specific Plans
- Refer to appropriate Environmentally Sensitive Area Maps
- Capability for continual analysis of trajectories run periodically during the response
- Environmental risk assessments (ERA) to determine priorities for area protection
- Time to acquire personnel and equipment and their availability
- Refer to the State of Louisiana Initial Oil Spill Response Plan, Deep Water Horizon, dated 2 May 2010, as a secondary reference
- Aerial surveillance of oil movement
- Pre-impact beach cleaning and debris removal
- Shoreline Cleanup Assessment Team (SCAT) operations and reporting procedures
- Boom type, size and length requirements and availability
- Possibility of need for In-situ burning in near shore areas
- Current wildlife situation, especially status of migratory birds and endangered species in the area
- Check for Archeological sites and arrange assistance for the appropriate state agency when planning operations 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., land owners, refuge/park managers, and others as appropriate, covering the following:
 - Access to areas
 - Possible response measures and impact of property and ongoing operations
 - Determination of any specific safety concerns
 - Any special requirements or prohibitions
 - Area security requirements
 - Handling of waste
 - Remediation expectations
 - Vehicle traffic control
 - Domestic animal safety concerns
 - Wildlife or exotic game concerns/issues

*Inland and Coastal Marsh Protection and Response
Considerations and Actions*

- All considered response methods will be weighed against the possible damage they may do to the marsh. Methods will be approved by the Unified Command only after discussions with local Stakeholder, as identified above.
 - In-situ burn may be considered when marshes have been impacted
- Passive clean up of marshes should 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 road ways
- Discuss and gain approval prior cutting or moving vessels through vegetation
- Discuss use of vessels that may disturb wildlife, i.e., airboats
- Safe movement of vessels through narrow cuts and blind curves

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

Decanting Strategy

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

CGA Equipment Limitations

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

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

Environmental Conditions in the 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 Region 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**

<p>Trajectory of a spill and the probability of it impacting a land segment have been projected utilizing Talos QN Exploration LLC's WCD and information in the BOEM Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf Regions available on the BOEM website using 30 day impact. The results are tabulated below.</p>				
Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%)
<p align="center">GC 40, Well Loc K</p> <p align="center"><i>77 miles from shore</i></p>	<p align="center">G34966</p>	<p align="center">C44</p>	Matagorda, TX	1
			Galveston, TX	2
			Jefferson, TX	1
			Cameron, LA	5
			Vermilion, LA	2
			Terrebonne, LA	2
			Lafourche, LA	1
			Jefferson, LA	1
			Plaquemines, LA	4

WCD Scenario– BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS (77 miles from shore)
 36,690 bbls of crude oil (Volume considering natural weathering)
 API Gravity 36.7°

FIGURE 2 – Equipment Response Time to GC 40, Well Loc K

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	0.7	4.7
DC 3	1200	2	Houma	2	2	0.9	4.9
Aero Commander	NA	2	Houma	2	2	0.7	4.7

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	12	Harvey	6	0	12	11	2	31
95' FRV	22885	249	NA	6	Leeville	2	0	2	4.5	1	9.5
95' FRV	22885	249	NA	6	Venice	2	0	3	4.5	1	10.5
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	8	0	4	13	2	27
Kirby Offshore (available through contract with CGA)											
Penn No 92	NA	92292	1 Tug	6	Houma	24	12	0	12	0	48
Randy King	NA	39856	1 Tug	6	Houma	24	12	0	12	0	48

Staging Area: Fourchon

Offshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Site	Hrs to Deploy	Total Hrs
CGA											
FRU Koseq 502 (3)	13584	12000	3 OSVs	6	Harvey	0	12	12	8	0	32
Hydro-Fire Boom	NA	NA	8 Utility	40	Harvey	0	24	3	8	6	41

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
CGA											
46' FRV	15257	65	NA	4	Vermilion	2	0	2	2.5	1	7.5
Kirby Offshore (Available through contract with CGA)											
Chesapeake	NA	35000	1 Tug	6	Port Arthur	24	12	0	6	0	42

Staging Area: Cameron

Nearshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Load Out	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
CGA											
SWS Marco	3588	20	NA	3	Vermilion	2	2	2.5	2	1	9.5
SWS Marco	3588	34	NA	3	Leeville	2	2	7	2	1	14
SWS Marco	3588	34	NA	3	Venice	2	2	9.5	2	1	16.5
Foilex Skim Package (TDS 150)	1131	50	NA	3	Vermilion	4	12	2.5	2	2	22.5
Foilex Skim Package (TDS 150)	1131	50	NA	3	Galveston	4	12	5	2	2	25
Foilex Skim Package (TDS 150)	1131	50	NA	3	Harvey	4	12	7	2	2	27
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Vermilion	2	2	2.5	2	1	9.5
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Harvey	2	2	7	2	1	14
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Vermilion	2	2	2.5	2	1	9.5
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Harvey	2	2	7	2	1	14

Shoreline Protection

Staging Area: Cameron

Shoreline Protection Boom	VOO	Persons Req.	Storage/Warehouse Location	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
AMPOL (available through MSA)									
34,050' 18" Boom	13 Crew	26	New Iberia, LA	2	2	3.5	2	12	21.5
16,000' 18" Boom	7 Crew	14	Chalmette, LA	2	2	7.5	2	6	19.5
900' 18" Boom	1 Crew	2	Morgan City, LA	2	2	5	2	2	13
11,800' 18" Boom	5 Crew	10	Gonzales, LA	2	2	9	2	2	17
16,000' 18" Boom	7 Crew	14	Port Arthur, TX	2	2	1.5	2	6	13.5
2,700' 18" Boom	2 Crew	4	Decatur, GA	2	2	20	2	6	32

Wildlife Response	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
CGA											
Wildlife Support Trailer	NA	NA	NA	2	Harvey	2	2	7	1	2	14
Bird Scare Guns (24)	NA	NA	NA	2	Harvey	2	2	7	1	2	14
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	2	2	5	1	2	12
Bird Scare Guns (12)	NA	NA	NA	2	Aransas Pass	2	2	9.5	1	2	16.5
Bird Scare Guns (24)	NA	NA	NA	2	Vermilion	2	2	2.5	1	2	9.5
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	7	1	2	14

Response Asset	Total
Offshore EDRC	135,639
Offshore Recovered Oil Capacity	148,646
Nearshore / Shallow Water EDRC	31,254
Nearshore / Shallow Water Recovered Oil Capacity	35,703

**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).

Marine Protected Species

Lease Stipulation No. 8 is designed to protect threatened and endangered species and marine mammals and apply to activities on the Outer Continental Shelf (OCS). The Outer Continental Shelf Lands Act (OCSLA; at 43 U.S.C. §1332) provides that the OCS should be made available for expeditious and orderly development and that operations on the OCS should be conducted in a manner that prevents or minimizes damage to the environment. The Bureau of Ocean Energy Management (BOEM) and Bureau of Safety and Environmental Enforcement (BSEE) implement these laws on the OCS.

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, 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 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

Under this plan of operations, Talos QN Exploration LLC (Talos) is proposing to drill and produce one (1) subsea well in Green Canyon Block 40, OCS-G 34536, Well No. 003.

A lease term pipeline will transport bulk oil to an existing PLET in the GC 40 block.

This production will tie back to the South Timbalier Block 308 "A-Tarantula" platform.

B) TRANSPORTATION SYSTEM

A lease term pipeline will be installed to transport produced hydrocarbons from the proposed GC 40 #3 well to an existing pipeline within GC 40. 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 liquid hydrocarbons will be transported by means other than a pipeline.

**APPENDIX N
SUPPORT VESSELS AND AIRCRAFT INFORMATION**

A) GENERAL

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

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

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 boats	394 bbls	1	4 trips per week
Helicopter	260 gallons	1	Daily

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.

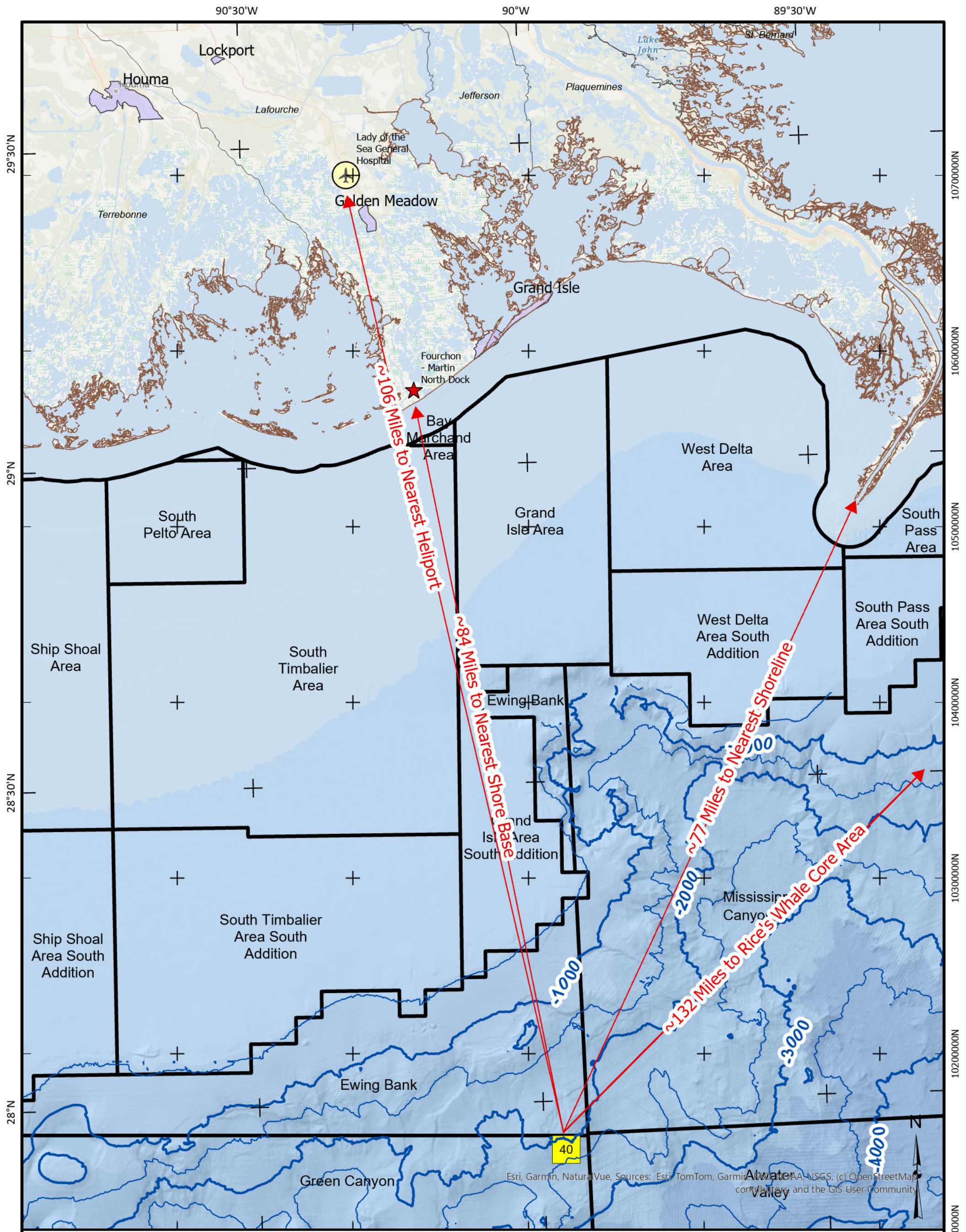
D) SOLID AND LIQUID WASTE TRANSPORTATION

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.

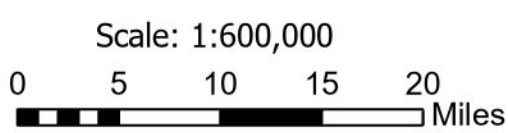
The vessels, supply boats, etc. utilized for the proposed activities will not transit the Rice's Whale area.



Legend

- GC40 Katmai East
- Shore Base - Fourchon
- Municipal_Boundaries
- ✈ RLC Heliport GAO, Galiano, LA

Spatial Reference
 Name: NAD 1927 BLM Zone 15N
 PCS: NAD 1927 BLM Zone 15N
 GCS: GCS North American 1927
 Datum: North American 1927
 Projection: Transverse Mercator
 Central Meridian: -93.0000
 Latitude of Origin: 0.0000
 Longitude of Origin: 0.0000
 False Easting: 1,640,416.6667
 Scale Factor: 0.9996
 Map Units: Foot US
 Authority: EPSG
 WKID: 32065



Green Canyon Block 40 "Katmai East" Field
 Gulf of Mexico

VICINITY PLAT FOR GC40 KATMAI EAST

Date Saved: 6/4/2025 12:05 PM Author: KGallatin
 Name: GC40_Katmai_East_Vicinity_20250528_KDG

**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
ICY Shorebase	Abbeville, LA	Existing
Halliburton/Baroid Dock	Port Fourchon, LA	Existing
Martin Midstream	Galveston, TX	Existing
Dulac Shorebase	Dulac, LA	Existing
Cameron Dock	Lake Charles, LA	Existing
MI Swaco Dock	Port Fourchon, LA	Existing
Halliburton/Baroid	Galveston, TX	Existing
Fourchon Shorebase	Port Fourchon, LA	Existing
GIS Dock	Venice, 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 QN Exploration LLC will use an existing onshore base facility and will not need to expand or modify those facilities to accommodate 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 activities 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 applicable 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 state 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 (Louisiana).

A certificate of Coastal Zone Management Consistency for each of the states listed above is enclosed.

**COASTAL ZONE MANAGEMENT
CONSISTENCY CERTIFICATION**

Supplemental Development Operations Coordination Document

Green Canyon Block 40

OCS-G 34536

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

Talos QN Exploration LLC
Lessee or Operator



Certifying Official

9/18/2025
Date

**APPENDIX Q
ENVIRONMENTAL 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 Green Canyon Block 40 OCS-G 34536

(A) Impact Producing Factors

ENVIRONMENTAL IMPACT ANALYSIS WORKSHEET

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

Footnotes for Environmental Impact Analysis Matrix

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

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

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

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

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of America	Gulf of America Range
			Lease Area	Coastal		
Bat, Florida Bonneted	<i>Eumops floridanus</i>	E	-	X	None	Florida
Panther, Florida	<i>Puma (=Felis) concolor coryi</i>	E	-	X	None	Florida
Vole, Florida Salt Marsh	<i>Microtus pennsylvanicus dukecampbelli</i>	E	-	X	None	Florida
Deer, Key	<i>Odocoileus virginianus clavium</i>	E	-	X	None	Florida Keys
Rabbit, Lower Keys Marsh	<i>Sylvilagus palustris hefneri</i>	E	-	X	None	Florida Keys
Rat, Silver Rice	<i>Oryzomys palustris natator</i>	E	-	X	None	Florida Keys
Birds						
Plover, Piping	<i>Charadrius melodus</i>	T	-	X	Coastal Texas, Louisiana, Mississippi, Alabama, and Florida (panhandle)	Coastal GOM
Crane, Whooping	<i>Grus Americana</i>	E	-	X	Coastal Texas	Coastal Texas and Louisiana
Crane, Mississippi sandhill	<i>Grus canadensis pulla</i>	E	-	X	Coastal Mississippi	Coastal Mississippi
Caracara, Audubon's Crested	<i>Polyborus plancus audubonii</i>	T	-	X	None	Coastal Florida Peninsula
Curlew, Eskimo	<i>Numenius borealis</i>	E	-	X	None	Coastal Texas
Falcon, Northern Aplomado	<i>Falco femoralis septentrionalis</i>	E	-	X	None	Coastal Texas
Prairie-chicken, Attwater's Greater	<i>Tympanuchus cupido attwateri</i>	E	-	X	None	Coastal Texas
Scrub-jay, Florida	<i>Aphelocoma coerulescens</i>	T	-	X	None	Coastal Florida
Kite, Everglade Snail	<i>Rostrhamus sociabilis plumbeus</i>	E	-	X	None	Coastal Southern Florida
Knot, Red	<i>Calidris canutus rufa</i>	T	-	X	None	Coastal GOM
Rail, Eastern Black	<i>Laterallus jamaicensis ssp. jamaicensis</i>	T	-	X	None	Coastal GOM
Sparrow, Cape Sable Seaside	<i>Ammodramus maritimus mirabilis</i>	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	<i>Mycteria americana</i>	T	-	X	None	Coastal Alabama and Florida
Tern, Roseate	<i>Sterna dougallii dougallii</i>	T	-	X	None	Coastal Southern Florida
Warbler, Bachman's	<i>Vermivora bachmanii</i>	E	-	X	None	Coastal Southern Florida
Woodpecker, Red-cockaded	<i>Picoides borealis</i>	E	-	X	None	Coastal Louisiana and Florida
Marine Reptiles						
Sea Turtle, Green	<i>Chelonia mydas</i>	T/E ³	X	X	None	GOM
Sea Turtle, Hawksbill	<i>Eretmochelys imbricata</i>	E	X	X	None	GOM
Sea Turtle, Kemp's Ridley	<i>Lepidochelys kempli</i>	E	X	X	None	GOM
Sea Turtle, Leatherback	<i>Dermochelys coriacea</i>	E	X	X	None	GOM
Sea Turtle, Loggerhead	<i>Caretta caretta</i>	T	X	X	Texas, Louisiana, Mississippi, Alabama, Florida	GOM
Terrestrial Reptiles						
Turtle, Alabama Red-bellied	<i>Pseudemys alabamensis</i>	E	-	X	None	Coastal Mississippi and Alabama
Crocodile, American	<i>Crocodylus acutus</i>	T	-	X	Everglades and Florida Keys	Coastal Florida
Snake, Eastern Indigo	<i>Drymarchon couperi</i>	T	-	X	None	Coastal Mississippi, Alabama, and Florida
Tortoise, Gopher	<i>Gopherus polyphemus</i>	T	-	X	None	Coastal Louisiana, Mississippi, and Alabama
Turtle, Ringed Map	<i>Graptemys oculifera</i>	T	-	X	None	Coastal Louisiana and Mississippi
Turtle, Yellow-blotched Map	<i>Graptemys flavimaculata</i>	T	-	X	None	Coastal Mississippi
Fish						
Sturgeon, Gulf	<i>Acipenser oxyrinchus (=oxyrhynchus) desotoi</i>	T	X	X	Coastal Louisiana, Mississippi, Alabama, and Florida (panhandle)	Coastal Louisiana, Mississippi, Alabama, and Florida (panhandle)
Shark, Oceanic Whitetip	<i>Carcharhinus longimanus</i>	T	X	-	None	GOM
Sawfish, Smalltooth	<i>Pristis pectinate</i>	E	-	X	None	Florida
Grouper, Nassau	<i>Epinephelus striatus</i>	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	<i>Manta birostris</i>	T	X	--	None	GOM
Sturgeon, Pallid	<i>Scaphirhynchus albus</i>	E	-	X	None	Louisiana Coastal Rivers
Corals						
Coral, Elkhorn	<i>Acopora palmate</i>	T	X ²	X	Florida ⁵	Flower Garden Banks and Florida
Coral, Staghorn	<i>Acopora cervicornis</i>	T	X	X	Florida ⁵	Florida
Coral, Boulder Star	<i>Orbicella franksi</i>	T	X	X	Flower Garden Banks and Florida	Flower Garden Banks and Florida
Coral, Lobed Star	<i>Orbicella annularis</i>	T	X	X	Flower Garden Banks and Florida	Flower Garden Banks and Florida
Coral, Mountainous Star	<i>Orbicella faveolate</i>	T	X	X	Flower Garden Banks and Florida	Flower Garden Banks and Florida
Coral, Rough Cactus	<i>Mycetophyllia ferox</i>	T	-	X	Florida ⁵	Florida and Southern Gulf of America
Coral, Pillar	<i>Dendrogyra cylindrus</i>	T	-	X	Florida ⁵	Florida

Abbreviations: E = Endangered; T = Threatened

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

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

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

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

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

(B) Analysis

Site-Specific at Green Canyon Block 40

Proposed operations consist of the drilling, completion, and placing into production of one well with a tie-back to the Tarantula platform at South Timbalier Bay Block 308; there will also be a lease term pipeline installed. The operations will be conducted with a drillship and 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: Green Canyon Block 40 is 46.2 miles from the closest designated Topographic Features Stipulation Block (Diaphus Bank); therefore, no adverse impacts are expected. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Effluents: Green Canyon Block 40 is 46.2 miles from the closest designated Topographic Features Stipulation Block (Diaphus 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: Green Canyon Block 40 is 126.9 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed.

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms. Although there is little information available on sound detection and sound-mediated behaviors for marine invertebrates, the overall impacts on pinnacle and low-relief feature communities from anthropogenic noise are expected to be negligible (BOEM 2017-009). Additionally, Green Canyon Block 40 is 126.9 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Effluents: Green Canyon Block 40 is 126.9 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed operations (refer to statistics in **Item 5**, Water Quality). Oil spills have the potential to foul benthic communities and cause lethal and sublethal effects on live bottom organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10-meter depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine organisms. Oil from a subsurface spill is not expected to impact pinnacle trend area live bottoms due to the distance of these blocks from a live bottom (pinnacle trend) area and the coverage of the activities proposed in this plan by 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: Green Canyon Block 40 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 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, Green Canyon Block 40 is not located in an area characterized by the existence of live bottoms; therefore, no adverse impacts are expected.

Effluents: Green Canyon Block 40 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

Green Canyon Block 40 is located in water depths 984 feet (300 meters) or greater. Potential IPFs to deepwater benthic communities from the proposed operations include physical disturbances to the seafloor and emissions (noise / sound).

Physical disturbances to the seafloor: Green Canyon Block 40 a known deepwater benthic community site listed in NTL 2009-G40. This Supplemental Development Operations Coordination Document submittal includes the required maps, analyses, and statement(s). The proposed operations will be conducted in accordance with NTL 2009-G40, which will ensure that features or areas that could support high-density deepwater benthic communities will not be impacted. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed. Because physical disturbances to the seafloor will be minimized by the use of a drillship, Talos's proposed operations in Green Canyon Block 40 are not likely to impact deepwater benthic communities.

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 deepwater benthic

communities from anthropogenic noise are expected to be negligible (BOEM 2017-009). Additionally, the proposed operations will be conducted in accordance with NTL 2009-G40, which will ensure that features or areas that could support high-density deepwater benthic communities will not be impacted.

There are no other IPFs (including effluents, wastes sent to shore for treatment or disposal, and accidents) from the proposed operations that are 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 Green Canyon Block 40 include disturbances to the seafloor, effluents, and accidents.

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

Effluents: Levels of contaminants in drilling muds and cuttings and produced water discharges, discharge-rate restrictions and monitoring and toxicity testing are regulated by the EPA NPDES permit, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to water quality. Additionally, an analysis of the best available information from the National Marine Fisheries Service Endangered

Species Act (ESA) Section 7 *Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico* (NMFS, 2020) concludes that exposures to toxicants in discharges from oil and gas activities are not likely to adversely affect ESA-listed species.

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

Drilling Fluid Spills

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

Chemical Spills

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

Oil Spills

Oil spills have the greatest potential of all OCS oil-and gas-related activities to affect water quality. Small spills (<1,000 barrels) are not expected to substantially impact water quality in coastal or offshore waters because the oil dissipates quickly through dispersion and weathering while still at sea. Reasonably foreseeable larger spills ($\geq 1,000$ barrels), however, could impact water quality in coastal and offshore waters (BOEM 2017-007). However, based on data provided in the BOEM 2016 Update of Occurrence Rates for Offshore Oil Spills, it is unlikely that an accidental surface or subsurface spill of a significant volume would occur from the proposed operations. Between 2001 and 2015 OCS operations produced eight billion barrels of oil and spilled 0.062 percent of

this oil, or one barrel for every 1,624 barrels produced. (The overall spill volume was almost entirely accounted for by the 2010 Deepwater Horizon blowout and subsequent discharge of 4.9 million barrels of oil. Additional information on unlikely scenarios and impacts from very large oil spills are discussed in the Catastrophic Spill Event Analysis white paper (BOEM 2017-007).

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

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

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

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

Oil that is chemically dispersed at the surface moves into the top six meters of the water column where it mixes with surrounding waters and begins to biodegrade (U.S. Congress, Office of Technology Assessment, 1990). Dispersant use, in combination with natural processes, breaks up oil into smaller components that allows them to dissipate into the water and degrade more rapidly (Nalco, 2010). Dispersant use must be in accordance with an RRT Preapproved Dispersant Use Manual and with any conditions outlined within an RRT's site-specific, dispersant approval given after a spill event. Consequently, dispersant use must be in accordance with the restrictions for specific water depths, distances from shore, and monitoring requirements. At this time, neither the Region IV nor the Region VI RRT dispersant use manuals, which cover the 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 Green Canyon Block 40 include physical disturbances to the seafloor, emissions (noise / sound), effluents, and accidents.

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

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

Sound detection capabilities among fishes vary. For most fish species, it is reasonable to assume hearing sensitivity to frequencies below 500 Hertz (Hz) (Popper et al., 2003 and 2014; Popper and

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

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

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

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

Despite the importance of many sound-mediated behaviors and the potential biological costs associated with behavioral response to anthropogenic sounds, many environmental and biological factors limit potential exposure and the effects that OCS oil-and gas-related sounds have on fishes and invertebrate resources. The overall impact to fishes and invertebrate resources due to

anthropogenic sound introduced into the marine environment by OCS oil-and gas-related routine activities is expected to be minor.

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

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

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

Should an ESA-listed fish (e.g., giant manta ray, oceanic whitetip shark, or Gulf sturgeon) be entrapped, entangled, or injured, personnel should contact the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov) and report all incidents to takereport.nmfs@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.nmfs@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

An accidental oil spill has the potential to cause some detrimental effects on fisheries; however, it is unlikely that such an event would occur from the proposed 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 Green Canyon Block 40 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.nmfs@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

These proposed operations may utilize a moon pool(s) to conduct various subsea activities. 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; Lohofener et al., 1990). Deep waters may be used by all species as a transitory habitat. A complete list of endangered and threatened sea turtles in the GOM may be found in **Table 1** at the beginning of this Environmental Impact Assessment. Additional details regarding the loggerhead sea turtle's critical habitat in the GOM are located in **Item 20.5**. Potential IPFs to sea turtles as a result of the proposed operations include emissions (noise / sound), 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.nmfs@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

These proposed operations may utilize a moon pool(s) to conduct various subsea activities. 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.

Green Canyon Block 40 is located 114.8 miles from the Breton Wilderness Area and 77 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 Green Canyon Block 40 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 Green Canyon Block 40 include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: A drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed. Because physical disturbances to the seafloor will be minimized by the use of a drillship, Talos's proposed operations in Green Canyon Block 40 that are not likely to impact shipwreck sites.

Additionally, Green Canyon Block 40 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 Green Canyon Block 40 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, which would cause only an insignificant amount of seafloor to be disturbed, Green Canyon Block 40 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 Green Canyon Block 40 include physical disturbances to the seafloor, effluents, and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of America.

Physical disturbances to the seafloor: Turbidity and sedimentation resulting from the bottom disturbing activities included in the proposed operations would be short term and localized. Fish are mobile and would avoid these temporarily suspended sediments. Additionally, the Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf

Pinnacle Trend Stipulation have been put in place to minimize the impacts of bottom disturbing activities. Additionally, a drillship is being used for the proposed operations; therefore, only an insignificant amount of seafloor will be disturbed. Therefore, the bottom disturbing activities from the proposed operations would have a negligible impact on EFH.

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

Accidents: An accidental oil spill has the potential to cause some detrimental effects on EFH. Oil spills that contact coastal bays and estuaries, as well as OCS waters when pelagic eggs and larvae are present, have the greatest potential to affect fisheries. However, it is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by 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 H₂S release) from the proposed operations that are likely to impact public health and safety. In accordance with NTL No.'s 2008-G04, 2009-G27, and 2009-G31, sufficient information is included in **Appendix D** to justify our request that our proposed operations be classified by BSEE as H₂S absent.

Coastal and Onshore

15. Beaches

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

Accidents: Oil spills contacting beaches would have impacts on the use of recreational beaches and associated resources. Due to the distance from shore (77 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 (77 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 (77 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 (77 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 (114.8 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

The Bryde's whale, also known as the Bryde's whale complex, is a collection of baleen whales that are still being researched to determine if they are the same species or if they are individual

species of whales. In 2021, the Rice's whale, formerly known as the Gulf of Mexico Bryde's whale, was determined to be a separate species from other Bryde's whales. There are less than 100 Rice's whales living in the Gulf of America year-round. These whales retain all the protections of the Gulf of Mexico Bryde's whale under the Endangered Species Act while the regulations are being updated to reflect the name change.

The Rice's whale 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 134.1 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 (134.9 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 America (Young 2016). According to the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, Essential Fish Habitat (EFH) for the oceanic whitetip shark includes localized areas in the central Gulf of America and Florida Keys. Oceanic whitetip sharks were listed as threatened under the Endangered Species Act in 2018 due to worldwide overfishing. Oceanic whitetip sharks had an abundant worldwide population, which has been threatened in recent years by inadequate regulatory measures governing fisheries; therefore, there is little research regarding the impact of oil and gas operations on oceanic whitetip sharks (NMFS, 2020). IPFs that have been determined by NMFS to be discountable to oceanic whitetip sharks include vessel strike, emissions (noise / sound), discharges, entanglement and entrapment, and marine debris. Potential IPFs to oceanic whitetip sharks as a result of the proposed operations in Green Canyon Block 40 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 Green Canyon Block 40 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 (123.4 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 175.1 miles from Green Canyon Block 40; therefore, no adverse impacts are expected. Additionally, considering the information from the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, we do not expect proposed operations to affect the ability of *Sargassum* to support adequate prey abundance and cover for loggerhead turtles.

20.6 - Protected Corals

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

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

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

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed operations (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to corals only if the oil contacts the organisms. Due to the distance from the Flower Garden Banks National Marine Sanctuary (123.4 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 Green Canyon Block 40 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, Green Canyon Block 40 may experience hurricane and tropical storm force winds and related sea currents. These factors can adversely impact the integrity of the operations covered by this plan. A significant storm may present physical hazards to operators and vessels, damage exploration or production equipment, or result in the release of hazardous materials (including hydrocarbons). Additionally, the displacement of equipment may disrupt the local benthic habitat and pose a threat to local species.

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

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

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

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

(E) ALTERNATIVES

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

(F) MITIGATION MEASURES

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

(G) CONSULTATION

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

(H) PREPARER(S)

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

- Hazard Surveys

APPENDIX R
ADMINISTRATIVE INFORMATION

A) EXEMPTED INFORMATION DESCRIPTION

Proprietary information included in the proprietary copy of this plan is listed below.

- BHL, TVD, and MD information on Form 137
- WCD sand and depth information on Form 137 and supporting documentation
- Certain items and enclosures under Geological and Geophysical information
- Correlative well information used to justify the H2S classification
- Casing summary information
- Charts containing sand tops and bases in the analog wells
- Directional Survey
- Wellbore Schematics

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"

COMPANY	Talos QN Exploration LLC
AREA	South Timaballier
BLOCK	308
LEASE	G21685
FACILITY	ST 308 A (Tarantula) (Complex ID 1500)
WELL	
COMPANY CONTACT	Chris Mullins
TELEPHONE NO.	(337) 521-2084
REMARKS	This AQR is being submitted to address air quality impact for 2025 through 2034 based on current and projected platform equipment and operations.

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER OF PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		
2033		
2034		

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 3.1-18 & 3.1-2a	4/00	https://www3.epa.gov/ttnchie1/ap42/ch03/fnal/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/ttnchie1/ap42/ch03/fnal/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/ttnchie1/ap42/ch03/fnal/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/ttnchie1/ap42/ch03/fnal/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/fnal/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/ttnchie1/ap42/ch03/fnal/c03s04.pdf
Diesel Boiler	lbs/bbl	0.0840	0.0420	0.0105	0.0089	1.0080	0.0084	5.14E-05	0.2100	0.0336	AP42 1.3-6; Pb and NH3: WebFIRE (08/2018)	9/98 and 5/10	https://cfpub.epa.gov/webfire/
Diesel Turbine	g/hp-hr	0.0381	0.0137	0.0137	0.0048	2.7941	0.0013	4.45E-05	0.0105	N/A	AP42 3.1-1 & 3.1-2a	4/00	https://www3.epa.gov/ttnchie1/ap42/ch03/fnal/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 3.1-18 & 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 NELTSP 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 NELTSP 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 NELTSP (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 NELTSP 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/fnal/c01s04.pdf
Combustion Flare (no smoke)	lbs/MMscf	0.00	0.00	0.00	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Combustion Flare (light smoke)	lbs/MMscf	2.10	2.10	2.10	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	https://www3.epa.gov/ttnchie1/ap42/ch13/fnal/C13S05_02-05-18.pdf
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/fnal/c01s03.pdf
Storage Tank	tons/yr/tank						4.300				2014 Gulfwide Inventory, Avg emiss (upper bound of 95% CI)	2017	https://www.boem.gov/environment/environmental-studies/2014-gulfwide-emission-inventory
Fugitives	lbs/hr/component						0.0005				API Study	12/93	https://www.epa.gov/publications/item.cgi?9879d38a-8bc0-4abe-b05c-9b623870125d
Glycol Dehydrator	tons/yr/dehydrator						19.240				2011 Gulfwide Inventory, Avg emiss (upper bound of 95% CI)	2014	https://www.boem.gov/environment/environmental-studies/2011-gulfwide-emission-inventory
Cold Vent	tons/yr/vent						44.747				2014 Gulfwide Inventory, Avg emiss (upper bound of 95% CI)	2017	https://www.boem.gov/environment/environmental-studies/2014-gulfwide-emission-inventory
Waste Incinerator	lb/ton		15.0	15.0	2.5	2.0	N/A	N/A	20.0	N/A	AP 42 2.1-12	10/96	https://www3.epa.gov/ttnchie1/ap42/ch02/fnal/c02s01.pdf
On-Ice - Loader	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Other Construction Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Other Survey Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	https://www.epa.gov/moves/nonroad2008a-installation-and-updates
On-Ice - Tractor	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Truck (for gravel island)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice - Truck (for surveys)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
Man Camp - Operation (max people/day)	tons/person/day		0.0004	0.0004	0.0004	0.006	0.001	N/A	0.001	N/A	BOEM 2014-1001	2014	https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/BOEM_Newsroom/Library/Publications/2014-1001.pdf
Vessels - Ice Management Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NELTSP 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 NELTSP refer to Diesel Recip. > 600 hp reference	3/19	

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

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

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

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

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																	
Talos ON Exploration LLC	South Timbalier	308	G21885	ST 308 A (Timbalier) (Complex ID 195)		Chris Mullins	(937) 521-2084	This AQR is being submitted to address air quality impact for 2025 through 2034 based on current and projected platform equipment and operations.																	
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR										ESTIMATED TONS								
	Diesel Engines		HP	GAL/HR	GAL/D		TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	
	Nat Gas Engines		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																		
DRILLING	VESSELS - Drilling - Propulsion Engine - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	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	
	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	
	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	
	Vessels - Diesel Bailer		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	
	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	
PIPELINE INSTALLATION	VESSELS - Pipeline Laying Vessel - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Pipeline Burying - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
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	
PRODUCTION	RECIP -<600hp Diesel - TAR East Gen (Cummins Q587-G4-NR3)	TCC-E	261	13.42740602	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	--	1.74	--	2.52	2.52	2.52	0.07	35.54	2.62	--	7.64	--
	RECIP -<600hp Diesel - TAR West Gen (Cummins Q587-G4-NR3)	TCC-W	261	13.42740602	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	--	1.74	--	2.52	2.52	2.52	0.07	35.54	2.62	--	7.64	--
	RECIP -<600hp Diesel - East Crane (Caterpillar 3406)	E-CRANE	305	15.69103002	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--
	RECIP -<600hp Diesel - West Crane (Caterpillar 3406)	W-CRANE	305	15.69103002	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--
	RECIP -<600hp Diesel - Air Compressor Cellar (Cummins 4B3.9)	AIRCOMP	130	6.68798001	160.51	24	365	0.29	0.29	0.29	0.01	4.04	0.30	--	0.87	--	1.26	1.26	1.26	0.04	17.70	1.31	--	3.80	--
	RECIP -<600hp Diesel - Air Compressor South (John Deere PE0068T888751)	AIRCOMP2	185	9.517510014	228.42	24	365	0.41	0.41	0.41	0.01	5.75	0.42	--	1.24	--	1.79	1.79	1.79	0.05	25.19	1.86	--	5.41	--
	RECIP -<600hp Diesel - Life Capsule 1 (Farman S30)	CAPSULE1	30	1.543380002	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	--	0.20	--	0.00	0.00	0.00	0.00	0.02	0.00	--	0.01	--
	RECIP -<600hp Diesel - Life Capsule 2 (Farman S30)	CAPSULE2	30	1.543380002	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	--	0.20	--	0.00	0.00	0.00	0.00	0.02	0.00	--	0.01	--
	RECIP -<600hp Diesel - Fire Water Pump 1 (CAT 3406TA)	FWPUMP-1	425	21.86455003	524.75	1	52	0.94	0.94	0.94	0.03	13.21	0.97	--	2.84	--	0.02	0.02	0.02	0.00	0.34	0.03	--	0.07	--
	RECIP ->600hp Diesel - Generator (Caterpillar D3508TA; LAN-7400)	DIE-GEN2	910	46.81586007	1123.58	24	365	0.64	0.32	0.36	0.01	21.87	0.58	--	5.02	--	2.81	1.60	1.56	0.05	95.78	2.55	--	21.97	--
	Natural Gas Turbine - Gen#1 (Solar Centaur 50; LAN-7100)	GEN-1	4600	43809.52381	1051428.57	24	365	--	0.09	0.09	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--
	Natural Gas Turbine - Gen#2 (Solar Centaur 50; LAN-7200)	GEN-2	4600	43809.52381	1051428.57	24	365	--	0.09	0.09	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #1 (EAL-3100)	HEATER-1	5	4762	114285.71	24	365	0.04	0.01	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75	0.07
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #2 (EAL-3101)	HEATER-2	5	4762	114285.71	24	365	0.04	0.01	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75	0.07
	MISC.	BPD		SCF/HR	COUNT																				
	STORAGE TANK ¹	T-01			2	0	0	--	--	--	--	0.00	--	--	--	--	--	--	--	--	0.00	--	--	--	
	COMBUSTION FLARE - medium smoke3	T-02		5000		24	365	0.05	0.05	0.05	0.00	0.36	0.18	--	1.63	--	0.23	0.23	0.23	0.01	1.56	0.79	--	7.13	--
	COMBUSTION FLARE - medium smoke3	FL-HP		5000		24	365	0.05	0.05	0.05	0.00	0.36	0.18	--	1.63	--	0.23	0.23	0.23	0.01	1.56	0.79	--	7.13	--
	COLD VENT ²	FL-LP-VENT			3	24	365	--	--	--	--	30.65	--	--	--	--	--	--	--	--	134.24	--	--	--	
	COLD VENT ²	FL-HP-VENT																							
	COLD VENT	FL-ATM-VENT																							
	FUGITIVES	FE-01			8900	24	365	--	--	--	--	4.45	--	--	--	--	--	--	--	--	19.49	--	--	--	
	GLYCOL DEHYDRATOR	FE-02				24	365	--	--	--	--	4.39	--	--	--	--	--	--	--	--	19.24	--	--	--	
	GLYCOL DEHYDRATOR	FE-03																							
	GLYCOL DEHYDRATOR	GR-SCC			1	24	365	--	--	--	--														
DRILLING WELL TEST	Liquid Flaring		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	0.00	
	COMBUSTION FLARE - no smoke		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	0.00	
	COMBUSTION FLARE - light smoke		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	0.00	
	COMBUSTION FLARE - medium smoke		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	0.00	
	COMBUSTION FLARE - heavy smoke		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	0.00	
ALASKA-SPECIFIC SOURCES	VESSELS			KW		HR/D	D/YR																		
	VESSELS - Ice Management Diesel		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	
	2026 Facility Total Emissions							5.08	4.92	4.91	0.19	113.89	45.11	0.00	29.52	0.03	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES																								
	62.0																								
DRILLING	VESSELS - Crew Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	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	
	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	
PIPELINE INSTALLATION	VESSELS - Support Diesel, Laying		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Support Diesel, Burying		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	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	
	VESSELS - Supply Diesel		0	0	0.00	0	0	0.00																	

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	CONTACT	PHONE	REMARKS																								
Talos ON Exploration LLC	South Timbalier	308	G21885	ST 308 A (Timbalier) (Complex ID 199)		Chris Mullins	(937) 521-2084	This AQR is being submitted to address air quality impact for 2025 through 2034 based on current and projected platform equipment and operations.																								
OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME	MAXIMUM POUNDS PER HOUR											ESTIMATED TONS														
							HP	GAL/HR	GAL/D	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3					
Diesel Engines		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																										
Nat Gas Engines		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																										
Burners		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR																										
DRILLING	VESSELS - Drilling - Propulsion Engine - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS - Drilling - Propulsion Engine - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Drilling - Propulsion Engine - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Drilling - Propulsion Engine - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00		
	Vesels - Diesel Boiler		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	0.00	0.00	0.00	0.00	0.00	0.00		
	Vesels - Drilling Prime Engine, Auxiliary		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	0.00	0.00	0.00	0.00	0.00	0.00		
PIPELINE INSTALLATION	VESSELS - Pipeline Laying Vessel - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00		
	VESSELS - Pipeline Burying - Diesel		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	0.00	0.00	0.00	0.00	0.00	0.00		
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/Derrick Barge Diesel		0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PRODUCTION	RECIP -<600hp Diesel - TAR East Gen (Cummins Q587-G4-NR3)	TCC-E	261	13.42740602	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	--	1.74	--	2.52	2.52	2.52	0.07	35.54	2.62	--	7.64	--							
	RECIP -<600hp Diesel - TAR West Gen (Cummins Q587-G4-NR3)	TCC-W	261	13.42740602	322.26	24	365	0.58	0.58	0.58	0.02	8.11	0.60	--	1.74	--	2.52	2.52	2.52	0.07	35.54	2.62	--	7.64	--							
	RECIP -<600hp Diesel - East Crane (Caterpillar 3406)	E-CRANE	305	15.69103002	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--							
	RECIP -<600hp Diesel - West Crane (Caterpillar 3406)	W-CRANE	305	15.69103002	376.58	2	365	0.67	0.67	0.67	0.02	9.48	0.70	--	2.04	--	0.25	0.25	0.25	0.01	3.46	0.26	--	0.74	--							
	RECIP -<600hp Diesel - Air Compressor Cellar (Cummins 4B3.9)	AIRCOMP	130	6.68798001	160.51	24	365	0.29	0.29	0.29	0.01	4.04	0.30	--	0.87	--	1.26	1.26	1.26	0.04	17.70	1.31	--	3.80	--							
	RECIP -<600hp Diesel - Air Compressor South (John Deere PE0068T888751)	AIRCOMP2	185	9.517510014	228.42	24	365	0.41	0.41	0.41	0.01	5.75	0.42	--	1.24	--	1.79	1.79	1.79	0.05	25.19	1.86	--	5.41	--							
	RECIP -<600hp Diesel - Life Capsule 1 (Farman S30)	CAPSULE1	30	1.543380002	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	--	0.20	--	0.00	0.00	0.00	0.00	0.02	0.00	--	0.01	--							
	RECIP -<600hp Diesel - Life Capsule 2 (Farman S30)	CAPSULE2	30	1.543380002	37.04	1	52	0.07	0.07	0.07	0.00	0.93	0.07	--	0.20	--	0.00	0.00	0.00	0.00	0.02	0.00	--	0.01	--							
	RECIP -<600hp Diesel - Fire Water Pump 1 (CAT 3406TA)	FWPUMP-1	425	21.86455003	524.75	1	52	0.94	0.94	0.94	0.03	13.21	0.97	--	2.84	--	0.02	0.02	0.02	0.00	0.34	0.03	--	0.07	--							
	RECIP ->600hp Diesel - Generator (Caterpillar D3508TA; LAN-7400)	DIE-GEN2	910	46.81586007	1123.58	24	365	0.64	0.64	0.64	0.01	21.87	0.58	--	5.02	--	2.81	1.60	1.56	0.05	95.78	2.55	--	21.97	--							
	Natural Gas Turbine - Gen#1 (Solar Centaur 50; LAN-7100)	GEN-1	4600	43809.52381	1051428.57	24	365	--	0.09	0.09	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--							
	Natural Gas Turbine - Gen#2 (Solar Centaur 50; LAN-7200)	GEN-2	4600	43809.52381	1051428.57	24	365	--	0.09	0.09	0.03	14.72	0.10	--	3.77	--	--	0.38	0.38	0.11	64.47	0.42	--	16.52	--							
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #1 (EAL-3100)	HEATER-1	5	4762	114285.71	24	365	0.04	0.04	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75	0.07							
	Natural Gas Heater/Boiler/Burner - Heat Media Heater Burner #2 (EAL-3101)	HEATER-2	5	4762	114285.71	24	365	0.04	0.04	0.01	0.00	0.90	0.03	0.00	0.40	0.02	0.16	0.04	0.04	0.01	3.96	0.11	0.00	1.75	0.07							
	MISC.			BPD	SCF/HR	COUNT																										
	STORAGE TANK ¹	T-01			2	0	0	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--						
COMBUSTION FLARE - medium smoke3	FL-01		5000		24	365	0.05	0.05	0.05	0.00	0.36	0.18	--	1.63	--	0.23	0.23	0.23	0.01	1.56	0.79	--	7.13	--								
COMBUSTION FLARE - medium smoke3	FL-HP		5000		24	365	0.05	0.05	0.05	0.00	0.36	0.18	--	1.63	--	0.23	0.23	0.23	0.01	1.56	0.79	--	7.13	--								
COLD VENT ²	FL-LP-VENT			3	24	365	--	--	--	--	30.65	--	--	--	--	--	--	--	--	--	134.24	--	--	--	--							
COLD VENT ²	FL-HP-VENT																															
COLD VENT	FL-ATM-VENT																															
FUGITIVES	FE-01			8900	24	365	--	--	--	--	4.45	--	--	--	--	--	--	--	--	--	19.49	--	--	--	--							
FE-02							--	--	--	--																						
FE-03							--	--	--	--																						
GR-SCC				1	24	365	--	--	--	--	4.39	--	--	--	--	--	--	--	--	--	19.24	--	--	--	--							
GLYCOL DEHYDRATOR																																
DRILLING WELL TEST	Liquid Flaring		0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	COMBUSTION FLARE - no smoke		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	COMBUSTION FLARE - light smoke		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	COMBUSTION FLARE - medium smoke		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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	COMBUSTION FLARE - heavy smoke		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	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	0.00						
2027 Facility Total Emissions							5.08	4.92	4.91	0.19	113.89	45.11	0.00	29.52	0.03	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13								

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL					
Talos QN Exploration LLC	South Timaballier	308	G21685	ST 308 A (Tarantula) (Complex ID 1500)						
Year	Facility Emitted Substance									
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	
2025	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2026	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2027	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2028	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2029	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2030	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2031	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2032	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2033	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
2034	12.19	11.50	11.47	0.57	357.05	187.12	0.00	98.83	0.13	
Allowable	2064.62			2064.62	2064.62	2064.62		53261.05		