UNITED STATES GOVERNMENT July 7, 2020
MEMORANDUM

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

Subject: Public Information copy of plan

Control #	-	S-07992
Type	-	Supplemental Development Operations Coordinations Document
Lease(s)	-	OCS-G06892 Block - 911 Viosca Knoll Area OCS-G06893 Block - 912 Viosca Knoll Area
Operator	-	Talos Petroleum LLC
Description	-	Subsea Wells A, B, and D-F in VK912 and Subsea Well C in VK911
Rig Type	-	Drillship or DP Semisubmersible

Attached is a copy of the subject plan.

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

Ronald O'Connor
Plan Coordinator

SUPPLEMENTAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

VIOSCA KNOLL BLOCK 911/912
LEASE OCS-G 06892/06893
WELL LOCATIONS A-F

OFFSHORE: LOUISIANA, MISSISSIPPI AND ALABAMA

PUBLIC INFORMATION COPY

ESTIMATED START-UP DATE: SEPTEMBER 1, 2020

Talos Petroleum LLC – 333 Clay Street, Suite 3300, Houston, Texas 77002

TALOS PETROLEUM LLC

SUPPLEMENTAL

DEVELOPMENT OPERATIONS COORDINATON DOCUMENT

LEASE OCS-G 06892/06893

VIOSCA KNOLL BLOCK 911/912

SECTION A	*Plan Contents*
SECTION B	*General Information*
SECTION C	*Geological, Geophysical Information*
SECTION D	*H2S Information*
SECTION E	*Mineral Resources Conservation Information*
SECTION F	*Biological, Physical and Socioeconomic Information*
SECTION G	*Wastes and Discharge Information*
SECTION H	*Air Emissions Information*
SECTION I	*Oil Spills Information*
SECTION J	*Environmental Monitoring Information*
SECTION K	*Lease Stipulations Information*
SECTION L	*Environmental Mitigation Measures Information*
SECTION M	*Related Facilities and Operations Information*
SECTION N	*Support Vessels and Aircraft Information*
SECTION O	*Onshore Support Facilities Information*
SECTION P	*Coastal Zone Management Act (CZMA) Information*
SECTION Q	*Environmental Impact Analysis*
SECTION R	*Administrative Information*

SECTION A
PLAN CONTENTS

This Supplemental Development of Operations Coordination Document provides for the drilling, completion and production of Proposed Well Locations A-F located in Viosca Knoll Blocks 911/912, Leases OCS-G 06892/06893 and the installation of six (6) lease term pipelines. .

Please be advised VK911 & VK912, Leases OCS-G 06892/06893 are part of a unit consisting of Leases OCS-G 06892, G06896, G08475, and G08784; Unit Contract No. 754389014; with the subject Leases OCS-G 06892 & 06893, currently receiving allocation.

Leases OCS-G 06892/06893 were acquired by Talos Petroleum from Stone Energy Corporation effective May 10, 2018.

(a) Plan Information Form
The OCS Plan Information Form – BOEM-0137, depicting the activities proposed herein, is included as an attachment to this section.

(b) Location
A Well Location Map showing the proposed surface and bottom-hole locations of the proposed well(s) is included as an attachment to this section as Proprietary Information.

A map depicting the surface locations of the proposed well locations is included as an attachment to this section as Public Information.

A Bathymetry Map showing the water depths across the lease block is included as an attachment to this section.

(c) Safety and Pollution Prevention Features
Talos Petroleum LLC (Talos) proposes to utilize a DP Semisubmersible or Drillship to drill the wells. Talos is requesting permission to have the option of choosing the most appropriate and available drilling unit at the time the Application for Permit to Drill (APD) is filed. A description of the drilling unit is included on the OCS Plan Information Form. Rig specifications will be made part of each Application for Permit to drill.

Safety features on the drilling unit will include well control, pollution prevention, and blowout prevention equipment as described in Title 30 CFR 250, Subparts C, D, E, and G; and as further clarified by the DOI Notices to Lessees, and current policy making invoked by the DOI, Environmental Protection Agency, and the U.S. Coast Guard. A Safety & Environmental Management System consistent with Title 30 CFR 250 Subparts "O" & "S" will be in effect during the proposed operations. In addition, the Well Control System consisting of surface 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 on demand when the 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 include installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all containments and debris.

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

(d) Storage Tanks and/or Production Vessels

All facility tanks with a capacity of 25 bbls or more.

Type of Storage Tank	Type of Facility	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
Fuel Oil (Marine Diesel)	MODU	5000	6	30000	33°

(e) Pollution Prevention Measures

The State of Florida is not an affected State for the activities proposed for in this plan; therefore, pursuant to NTL No. 2008-G04, this information is not required.

(f) Additional Measures

Talos does not propose additional safety, pollution prevention, or early spill detection measures beyond those required by 30 CFR 250. Talos is a member of HWCG, Clean Gulf Associates and Marine Spill Response Corporation.

(g) Processing Fee

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

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

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

OCS PLAN INFORMATION FORM

General Information

Type of OCS Plan:		Exploration Plan (EP)	Development Operations Coordination Document (DOCD)	X

Company Name: Talos Petroleum LLC	BOEM Operator Number: 01834
Address:	Contact Person: Erin Harold
333 Clay Street, Suite 3300	Phone Number: 713-335-6952
Houston, Texas 77002	E-Mail Address: erin.harold@talosenergy.com

If a service fee is required under 30 CFR 550.125(a), provide the	Amount paid	$12714.00/$12174.00	Receipt No.	26MA2ALG/26MR5VHJ

Project and Worst Case Discharge (WCD) Information

Lease(s): OCS-G 06892/06893	Area: VK	Block(s): 912	Project Name (If Applicable):

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

Platform/Well Name: A	Total Volume of WCD: 2.195MMBbls	API Gravity: 46.3°
Distance to Closest Land (Miles): 54	Volume from uncontrolled blowout: 71332 BOPD	

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

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

Proposed Activity	Start Date	End Date	No. of Days
Exploration drilling			
Development drilling & well completion	A 9/1/20; B 5/1/21; C 6/5/21;	A 11/6/20; B 6/5/21; C 7/22/21;	A 66; B 36; C 47;
	D 5/1/22; E 5/1/23; F 5/1/24	D 6/30/22; E 7/2/23; F 6/24/24	D 61; E 63; F 55
Well test flaring (for more than 48 hours)			
Installation or modification of structure			
Installation of production facilities			
Installation of subsea wellheads and/or manifolds			
Installation of lease term pipelines	AFTER EA. WELL COMPLETION	30 DAYS POST COMPLETION	30
Commence production			
Other (Specify and attach description)			

Description of Drilling Rig

	Jackup	X	Drillship		Caisson	X	Tension leg platform
	Gorilla Jackup		Platform rig		Fixed platform		Compliant tower
	Semisubmersible		Submersible		Spar		Guyed tower
X	DP Semisubmersible		Other (Attach Description)		Floating production system		Other (Attach Description)

Drilling Rig Name (If Known):

Description of Structure

Description of Lease Term Pipelines

From (Facility/Area/Block)	To (Facility/Area/Block)	Diameter (Inches)	Length (Feet)
SIX LINES: VK912	VK956	8	12000'

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): Location A					Previously reviewed under an approved EP or DOCD?		Yes	X	No
Is this an existing well or structure?		Yes		No X	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						X	Yes		No

WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 71332 BOPD	For structures, volume of all storage and pipelines (Bbls):	API Gravity of fluid	46.3 °

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	OCS G06893	OCS	OCS OCS
Area Name	Viosca Knoll		
Block No.	912		
Blockline Departures (in feet)	N/S Departure: F N 740 L	N/S Departure: F____ L	N/S Departure: F____ L N/S Departure: F____ L N/S Departure: F____ L
	E/W Departure: F W 3950 L	E/W Departure: F____ L	E/W Departure: F____ L E/W Departure: F____ L E/W Departure: F____ L
Lambert X-Y coordinates	X: 1286990.00'	X:	X: X: X:
	Y: 10564540.00'	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude 29° 06' 22.209"	Latitude	Latitude Latitude Latitude
	Longitude -88° 06' 25.482"	Longitude	Longitude Longitude Longitude

Water Depth (Feet): 2358'	MD (Feet):	TVD (Feet):	MD (Feet): MD (Feet): MD (Feet):	TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:				

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

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

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): Location B					Previously reviewed under an approved EP or DOCD?		Yes	X	No
Is this an existing well or structure?		Yes		No X	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						X	Yes		No
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 71332 BOPD				For structures, volume of all storage and pipelines (Bbls):		API Gravity of fluid		46.3 °

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	OCS G06893	OCS	OCS OCS
Area Name	Viosca Knoll		
Block No.	912		
Blockline Departures (in feet)	N/S Departure: F N 3920 L	N/S Departure: F____ L	N/S Departure: F____ L N/S Departure: F____ L N/S Departure: F____ L
	E/W Departure: F W 300 L	E/W Departure: F____ L	E/W Departure: F____ L E/W Departure: F____ L E/W Departure: F____ L
Lambert X-Y coordinates	X: 1283340.00'	X:	X: X: X:
	Y: 10561360.00'	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude 29° 05' 50.378"	Latitude	Latitude Latitude Latitude
	Longitude -88° 07' 06.295"	Longitude	Longitude Longitude Longitude

Water Depth (Feet): 2480'	MD (Feet):	TVD (Feet):	MD (Feet): MD (Feet): MD (Feet):	TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:				

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

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

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): Location C				Previously reviewed under an approved EP or DOCD?		Yes	X	No
Is this an existing well or structure?		Yes		No X	If this is an existing well or structure, list the Complex ID or API No.			
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?			X	Yes				No

WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 71332 BOPD	For structures, volume of all storage and pipelines (Bbls):	API Gravity of fluid	46.3 °

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	OCS G06893	OCS	OCS OCS
Area Name	Viosca Knoll		
Block No.	912		
Blockline Departures (in feet)	N/S Departure: F N ___ L 2801	N/S Departure: F____ L	N/S Departure: F____ L N/S Departure: F____ L N/S Departure: F____ L
	E/W Departure: F W ___ L 727	E/W Departure: F____ L	E/W Departure: F____ L E/W Departure: F____ L E/W Departure: F____ L
Lambert X-Y coordinates	X: 1283767.00'	X:	X: X: X:
	Y: 10562479.00'	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude 29° 06' 01.499"	Latitude	Latitude Latitude Latitude
	Longitude -88° 07' 01.601"	Longitude	Longitude Longitude Longitude
Water Depth (Feet): 2427'		MD (Feet): / TVD (Feet):	MD (Feet): / TVD (Feet): MD (Feet): / TVD (Feet): MD (Feet): / TVD (Feet):
Anchor Radius (if applicable) in feet:			

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

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

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

Proposed Well/Structure Location

Well or Structure Name/Number (If renaming well or structure, reference previous name): Location D					Previously reviewed under an approved EP or DOCD?		Yes	X	No
Is this an existing well or structure?		Yes		No X	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						X	Yes		No

WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 71332 BOPD	For structures, volume of all storage and pipelines (Bbls):	API Gravity of fluid	46.3 °

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	OCS G06893	OCS	OCS OCS
Area Name	Viosca Knoll		
Block No.	912		
Blockline Departures (in feet)	N/S Departure: F N 3028 L	N/S Departure: F____ L	N/S Departure: F____ L N/S Departure: F____ L N/S Departure: F____ L
	E/W Departure: F W 2670 L	E/W Departure: F____ L	E/W Departure: F____ L E/W Departure: F____ L E/W Departure: F____ L
Lambert X-Y coordinates	X: 1285710.00'	X:	X: X: X:
	Y: 10562252.00'	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude 29° 05' 59.433"	Latitude	Latitude Latitude Latitude
	Longitude -88° 06' 39.671"	Longitude	Longitude Longitude Longitude

Water Depth (Feet): 2458'	MD (Feet):	TVD (Feet):	MD (Feet): MD (Feet): MD (Feet):	TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:				

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

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

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): Location E					Previously reviewed under an approved EP or DOCD?		Yes	X	No
Is this an existing well or structure?		Yes		No X	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						X	Yes		No

WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 71332 BOPD	For structures, volume of all storage and pipelines (Bbls):	API Gravity of fluid	46.3 °

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	OCS G06893	OCS	OCS OCS
Area Name	Viosca Knoll		
Block No.	912		
Blockline Departures (in feet)	N/S Departure: F N 4154 L	N/S Departure: F____ L	N/S Departure: F____ L N/S Departure: F____ L N/S Departure: F____ L
	E/W Departure: F W 6400 L	E/W Departure: F____ L	E/W Departure: F____ L E/W Departure: F____ L E/W Departure: F____ L
Lambert X-Y coordinates	X: 1289440.00'	X:	X: X: X:
	Y: 10561126.00'	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude 29° 05' 48.629"	Latitude	Latitude Latitude Latitude
	Longitude -88° 05' 57.499"	Longitude	Longitude Longitude Longitude

Water Depth (Feet): 2561'	MD (Feet):	TVD (Feet):	MD (Feet): MD (Feet): MD (Feet):	TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:				

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

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

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): Location F					Previously reviewed under an approved EP or DOCD?		Yes	X	No
Is this an existing well or structure?		Yes		No X	If this is an existing well or structure, list the Complex ID or API No.				
Do you plan to use a subsea BOP or a surface BOP on a floating facility to conduct your proposed activities?						X	Yes		No

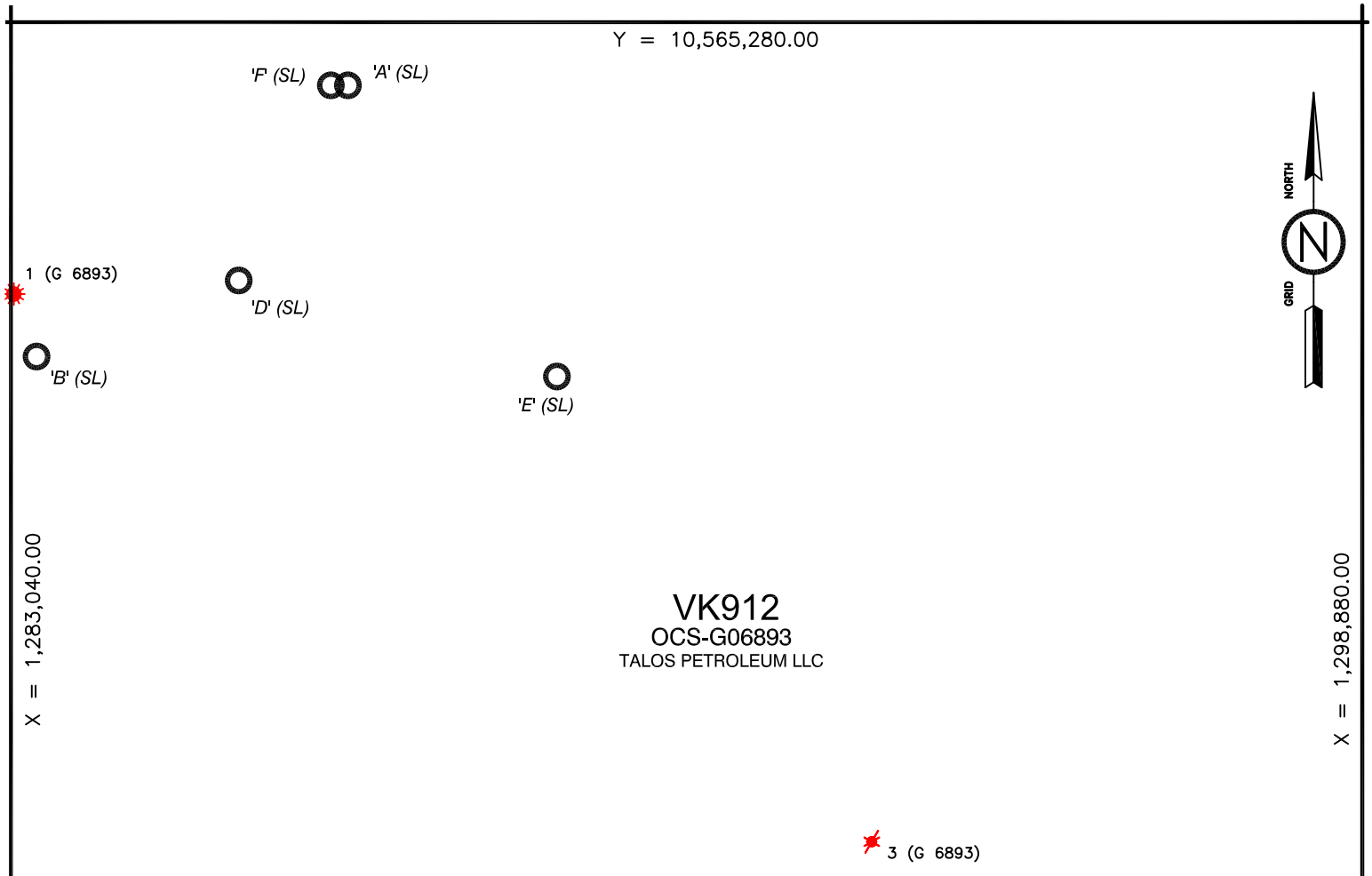
WCD info	For wells, volume of uncontrolled blowout (Bbls/day): 71332 BOPD	For structures, volume of all storage and pipelines (Bbls):	API Gravity of fluid	46.3 °

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	OCS G06893	OCS	OCS OCS
Area Name	Viosca Knoll		
Block No.	912		
Blockline Departures (in feet)	N/S Departure: F N 740 L	N/S Departure: F____ L	N/S Departure: F____ L N/S Departure: F____ L N/S Departure: F____ L
	E/W Departure: F W 3750 L	E/W Departure: F____ L	E/W Departure: F____ L E/W Departure: F____ L E/W Departure: F____ L
Lambert X-Y coordinates	X: 1286790.00'	X:	X: X: X:
	Y: 10564540.00'	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude 29° 06' 22.190"	Latitude	Latitude Latitude Latitude
	Longitude -88° 06' 27.737"	Longitude	Longitude Longitude Longitude

Water Depth (Feet): 2355'	MD (Feet):	TVD (Feet):	MD (Feet): MD (Feet): MD (Feet):	TVD (Feet): TVD (Feet): TVD (Feet):
Anchor Radius (if applicable) in feet:				

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

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



PROPOSED WELL LOCATIONS

LOCATION	BLOCK	CALLS		COORDINATES		LATITUDE	LONGITUDE	WD	MD	TVD
'A' (SL)	VK/912	3,950' FWL	740' FNL	X = 1,286,990.00	Y = 10,564,540.00	29° 06' 22.209"N	88° 06' 25.482"W	2,358'		
'B' (SL)	VK/912	300' FWL	3,920' FNL	X = 1,283,340.00	Y = 10,561,360.00	29° 05' 50.378"N	88° 07' 06.295"W	2,480'		
'D' (SL)	VK/912	2,670' FWL	3,028' FNL	X = 1,285,710.00	Y = 10,562,252.00	29° 05' 59.433"N	88° 06' 39.671"W	2,458'		
'E' (SL)	VK/912	6,400' FWL	4,154' FNL	X = 1,289,440.00	Y = 10,561,126.00	29° 05' 48.629"N	88° 05' 57.499"W	2,561'		
'F' (SL)	VK/912	3,750' FWL	740' FNL	X = 1,286,790.00	Y = 10,564,540.00	29° 06' 22.190"N	88° 06' 27.737"W	2,355'		

1,000 0 1,000 2,000
SCALE IN FEET

Y = 10,549,440.00

SHEET 1 OF 1
PUBLIC INFORMATION

DATUM: NAD 27
SPHEROID: CLARKE 1866
PROJECTION: U.T.M.
ZONE: 16

Echo OFFSHORE LLC
36499 Perkins Road
Prairieville, Louisiana 70769
Tel: 225-673-2163

TALOS PETROLEUM LLC

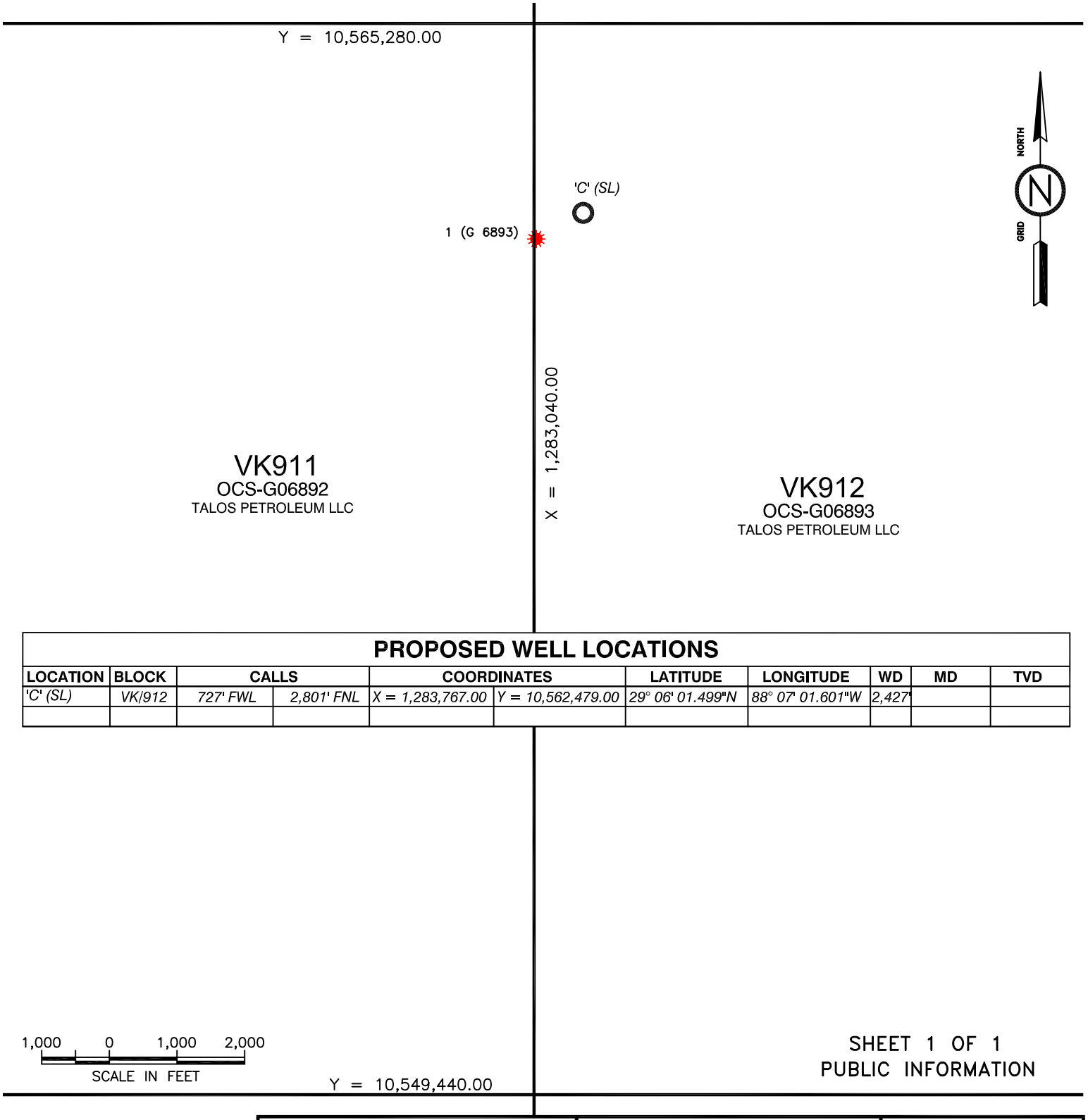
TALOS PETROLEUM LLC

EXPLORATION PLAT

PROPOSED WELLS 'A', 'B', 'D', 'E' & 'F'
OCS-G 06893 BLOCKS 912
VIOSCA KNOLL AREA

GULF OF MEXICO

DRAWN BY:	DATE:	CHECKED BY:	DRAWING No.:
JFL	11/20/2019	RJN	19-033EXP
REV. DATE:	REV. No.:	SCALE:	JOB No.:
		1"=2,000'	19-033-42



PROPOSED WELL LOCATIONS

LOCATION	BLOCK	CALLS		COORDINATES		LATITUDE	LONGITUDE	WD	MD	TVD
'C' (SL)	VK/912	727' FWL	2,801' FNL	X = 1,283,767.00	Y = 10,562,479.00	29° 06' 01.499"N	88° 07' 01.601"W	2,427'		

SHEET 1 OF 1
PUBLIC INFORMATION

DATUM: NAD 27
SPHEROID: CLARKE 1866
PROJECTION: U.T.M.
ZONE: 16

Echo OFFSHORE LLC
36499 Perkins Road
Prairieville, Louisiana 70769
Tel: 225-673-2163

TALOS PETROLEUM LLC

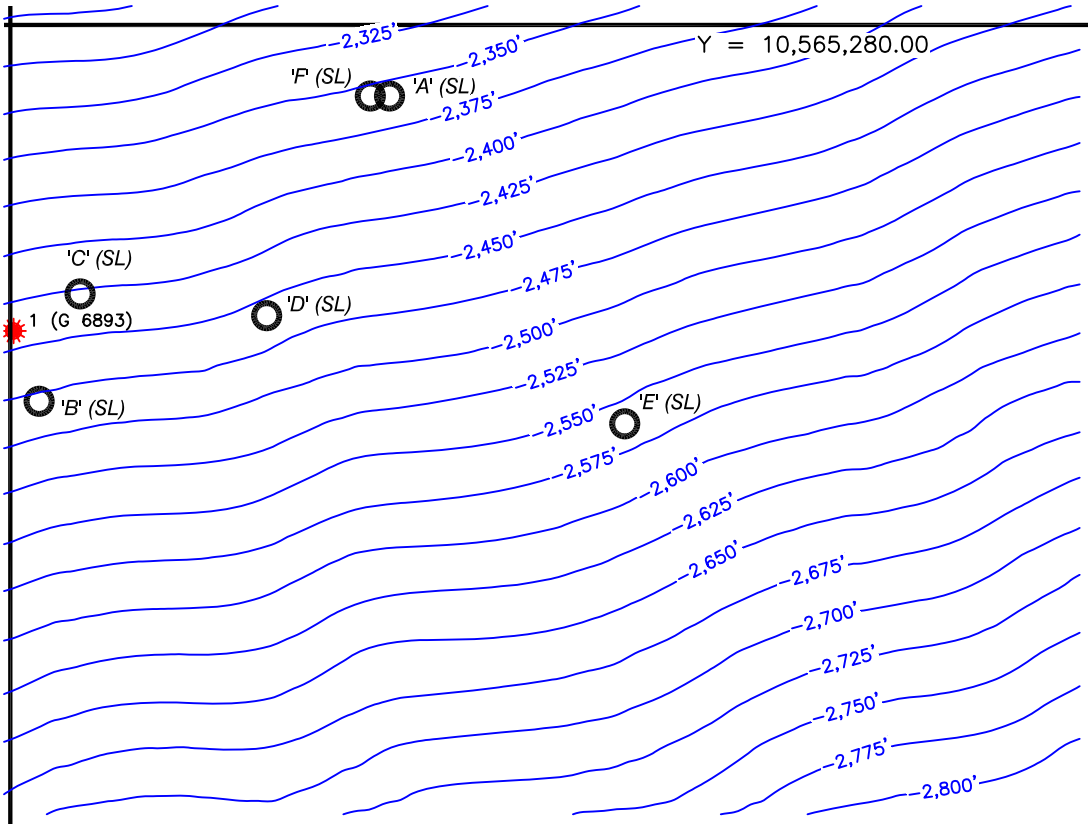
TALOS PETROLEUM LLC

EXPLORATION PLAT

PROPOSED WELL 'C'
OCS-G 06892 BLOCK 911 WITH SURFACE HOLE IN BLOCK 912 VIOSCA KNOLL AREA

GULF OF MEXICO

DRAWN BY:	DATE:	CHECKED BY:	DRAWING No.:
JFL	11/20/2019	RJN	19-033-EXP WELL C
REV. DATE:	REV. No.:	SCALE:	JOB No.:
		1"=2,000'	19-033-42



PROPOSED WELL LOCATIONS

LOCATION	BLOCK	CALLS		COORDINATES		LATITUDE	LONGITUDE	WD
'A' (SL)	VK/912	3,950' FWL	740' FNL	X = 1,286,990.00	Y = 10,564,540.00	29° 06' 22.209"N	88° 06' 25.482"W	2,358'
'B' (SL)	VK/912	300' FWL	3,920' FNL	X = 1,283,340.00	Y = 10,561,360.00	29° 05' 50.378"N	88° 07' 06.295"W	2,480'
'C' (SL)	VK/912	727' FWL	2,801' FNL	X = 1,283,767.00	Y = 10,562,479.00	29° 06' 01.499"N	88° 07' 01.601"W	2,427'
'D' (SL)	VK/912	2,670' FWL	3,028' FNL	X = 1,285,710.00	Y = 10,562,252.00	29° 05' 59.433"N	88° 06' 39.671"W	2,458'
'E' (SL)	VK/912	6,400' FWL	4,154' FNL	X = 1,289,440.00	Y = 10,561,126.00	29° 05' 48.629"N	88° 05' 57.499"W	2,561'
'F' (SL)	VK/912	3,750' FWL	740' FNL	X = 1,286,790.00	Y = 10,564,540.00	29° 06' 22.190"N	88° 06' 27.737"W	2,355'

1,000 0 1,000 2,000
SCALE IN FEET

Y = 10,549,440.00

SHEET 1 OF 1

DATUM: NAD 27
SPHEROID: CLARKE 1866
PROJECTION: U.T.M.
ZONE: 16

Echo OFFSHORE LLC
36499 Perkins Road
Prairieville, Louisiana 70769
Tel: 225-673-2163

TALOS PETROLEUM LLC

TALOS PETROLEUM LLC

WELL ASSESSMENT

BATHYMETRY MAP
OCS-G 06893 BLOCKS 912
VIOSCA KNOLL AREA

GULF OF MEXICO

DRAWN BY:	DATE:	CHECKED BY:	DRAWING No.:
RJN	11/20/2019	MEK	19-033 SM BAT
REV. DATE:	REV. No.:	SCALE:	JOB No.:
		1"=2,000'	19-033-42

Erin Harold

From: notification@pay.gov
Sent: Friday, December 20, 2019 12:28 PM
To: Erin Harold
Subject: Pay.gov Payment Confirmation: BOEM Development/DOCD Plan - BD


An official email of the United States government

Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact Brenda Dickerson at (703) 787-1617 or BseeFinanceAccountsReceivable@bsee.gov.

Application Name: BOEM Development/DOCD Plan - BD
Pay.gov Tracking ID: 26MA2ALG
Agency Tracking ID: 75910713419
Transaction Type: Sale
Transaction Date: 12/20/2019 01:27:49 PM EST
Account Holder Name: Melissa Sassella
Transaction Amount: $12,714.00
Card Type: MasterCard
Card Number: **********5056

Region: Gulf of Mexico
Contact: Erin Harold 7133356952
Company Name/No: Talos Petroleum LLC, 01834
Lease Number(s): 06892, 06893, , ,
Area-Block: Viosca Knoll VK, 911: Viosca Knoll VK, 912: , : , : ,
Type-Wells: Supplemental Plan, 3

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.


Pay.gov is a program of the U.S. Department of the Treasury, Bureau of the Fiscal Service

Erin Harold

From: notification@pay.gov
Sent: Tuesday, January 14, 2020 3:09 PM
To: Erin Harold
Subject: Pay.gov Payment Confirmation: BOEM Development/DOCD Plan - BD


An official email of the United States government

Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact Brenda Dickerson at (703) 787-1617 or BseeFinanceAccountsReceivable@bsee.gov.

Application Name: BOEM Development/DOCD Plan - BD
Pay.gov Tracking ID: 26MR5VHJ
Agency Tracking ID: 75928636880
Transaction Type: Sale
Transaction Date: 01/14/2020 04:09:13 PM EST
Account Holder Name: Melissa Sassella
Transaction Amount: $12,714.00
Card Type: MasterCard
Card Number: **********5056

Region: Gulf of Mexico
Contact: Erin Harold 7133356952
Company Name/No: Talos Petroleum LLC, 01834
Lease Number(s): 06892, 06893, , ,
Area-Block: Viosca Knoll VK, 911: Viosca Knoll VK, 912: , : , : ,
Type-Wells: Supplemental Plan, 3

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.


Pay.gov is a program of the U.S. Department of the Treasury, Bureau of the Fiscal Service

SECTION B
GENERAL INFORMATION

(a) Applications and Permits
Listed in the table below are additional permits/applications to be filed before operations commence under this DOCD:

Application/Permit	*Issuing Agency*	*Status*
NPDES permit	EPA	Pending
CZM Consistency Certification	CMD	Pending
Lease Term Pipeline Application	BSEE	Pending
Rig Move Reports	USCG, MWA and NGA	Pending
Application for Permit to Drill	BSEE	Pending

(b) Drilling Fluids

Type of Drilling Fluid	Estimated Volume of Drilling Fluid to be Used (BBLS)
Water-based (Seawater, freshwater, barite)	42,024 bbls
Oil-based (diesel, minerals, oil)	None
Synthetic-based (internal olefin, ester)	10672 bbls

(c) Production
Proprietary Information.

(d) Oil Characteristics
In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as this is a DOCD that does not propose the production, handling, transporting or storing of oil where the State of Florida is an affected State, the activities proposed are not within the Protective Zones of the Flower Garden Banks and Stetson Bank, nor are we proposing to install a surface facility in water depths greater than 1,312 feet or a surface facility to support a subsea development in water depths greater than 1,312'.

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

(f) Bonding Statement
The bond requirements for the activities and facilities proposed in this DOCD are satisfied by a $3,000,000.00 areawide development bond, furnished and maintained according to Title 30 CFR Part 556, Subpart I; NTL No. 2015-N04, "General Financial Assurance;" and additional security under 30 CFR 556.901(d)-(f) and NTL No. 2016-N01, "Requiring Additional Security."

(g) Oil Spill Financial Responsibility

Talos Petroleum, company number 01834, will demonstrate oil spill financial responsibility (OSFR) for the activities/facilities proposed herein. The OSFR insurance coverage is renewed annually in May and complies with 30 CFR Part 253, and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities." Talos Petroleum's insurance certificate for oil spill financial responsibility is $150,000,000.

(h) Deepwater Well Control Statement

Talos Petroleum LLC (01834) has the financial capability to drill a relief well and conduct other emergency well control operations.

(i) Suspensions of Production

Talos does not anticipate filing any request for Suspension of Production to hold the lease addressed in this plan.

(j) Blowout Scenario

The blowout scenario within this section utilized the guidelines and requirements pursuant to NTL No. 2015-N01, which is included as an attachment to this section.

NTL 2015 N01 Information Requirements
OCS-G 06893 Well "A", Viosca Knoll Block 912
3/23/2020 10:25 AM

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

Worst Case Discharge: The calculated worst case discharge (WCD) rate for the scenario described above would be from PPHS in the production hole interval. The calculated WCD from the exposed PPHS would be 71,332 BOPD, 1283.20 MMCFGPD and 0 BWPD. The WCD is based on nodal analysis using field analog reservoir data.

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

Scenario	Blowout Duration	Oil Discharge*
Well Bridges Over	48 to 72 hrs	137,000 bbls to 197,000 bbls
Subsea Intervention	6 to 16 days	359,000 bbls to 774,000 bbls
Drill Relief Well	76 days	2,195,000 bbls

*Based on calculated unrestricted flow with declining oil production rate.

Potential of well to bridge over: Failure of the borehole in a blowout scenario are influenced by several factors including in-situ stress, rock strength, and fluid velocities at the sand face. Blowout simulations confirm that, due to the typically large induced drawdown pressures, wellbore pressure gradients in an open hole blowout invariably falls below the collapse gradient of the open formations.

History has shown that most "open hole" blowouts bridge over in 48 to 72 hrs. MMS reported that 49% of all blowout events during 1992 – 2006 stopped flowing in 24 hrs or less, 41% lasted between 1 to 7 days and the longest blowout lasted 11 days. Two relief wells were initiated but both blowouts were controlled by other means prior to completing the relief well.

Subsea Control and Containment: Talos Petroleum 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 response resources including vessels and equipment to shut-in and contain the well or flow and capture the fluids. Equipment and services required for the response beyond those provided through HWCG will be contracted directly by Talos as specified in the current and approved Regional Containment Demonstration (RCD). Talos has Master Service Contracts with equipment and service companies to respond to a blowout as described in the RCD.

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

HWCG response equipment resources includes 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 other suitable 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 response resources will be utilized to shut-in and contain the well. In the event it is necessary to "flow and capture" the fluids, an additional 7 to 8 days is estimated. Therefore, subsea intervention time would take 6 to 16 days. Talos is a member of Clean Gulf Associates, MSRC and HWCG.

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

Relief well: In the event of an uncontrolled blowout, relief well planning and rig availability inquiries would commence immediately. The SHL of the VK 912 Well "A" well is in ~2371' WD. Ideally, the relief well(s) SHL would be south of VK 912 Well

"A" SHL. There are ~23 rigs in the USGOM which are "active" and capable of drilling a relief well with an open water location in ~2371' water depth in VK 912. 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. Rig contracts are in place with several USGOM rig contractors which have drill ships and semi-submersible drilling rigs.

There are no known rig package constraints for a relief well. All 3rd, 4th and 5th generation rigs in the USGOM would be suitable to drill a relief well. Therefore, the rig choice would be first available, quickest to mobilize and move into position offsetting the blow out well. A relief well would be drilled from an open water location about 1500' south to southwest of the blowout well. The final rig location will be influenced by operator, contractor, BSEE and depth of intersect to insure safety of all personnel and equipment involved in the relief well effort.

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

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

Description	Estimated Days	Cumulative Days
Site assessment	3	3
Secure rig and Mobilize	14	17
Jet 36"	2	19
Drill 26" hole and set 20" casing with 18-3/4" SSWH.	3	22
Certify BOPE / Run and test BOP stack	10	32
Drill 17-1/2" x 20" hole and set 16" liner.	6	38
Drill 14-1/2" x 17-1/2" hole and set 13-5/8" casing.	8	46
Drill 12-1/4" hole and range, set 9-7/8" casing.	10	56
Drill 8-1/2" hole and range to intercept the 11-7/8" casing shoe.	10	66
R/U pumping equipment and kill well	10	76

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 VK 912 Well "A".

The VK 912 Well "A" will be drilled using mud weights as per the well plan's mud weight schedule. Mud weight adjustments will be made based on observed drilling parameters including rate of penetration, cuttings quantity and appearance, chloride contamination and gas monitoring. In the event drilling parameters indicate a potential for a "kick", the drilling operations will cease and a flow check will be performed. Penetration rate will be controlled while drilling thru any hydrocarbon sand. Two mud engineers will work 12 hr shifts providing 24 hr mud engineering support during drilling operations. Two "shaker" men working 12 hr shifts continuously monitor mud weight and returns at the shakers. Electronic PVT equipment will be utilized throughout all drilling operations.

Mud properties including viscosity and gel strengths will be adequately maintained in an effort 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 will be available and ready to pump down hole if a high volume 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 below 20" casing 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 also be utilized while drilling below 20" casing. LWD will 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 a minimum of 1.5 times its volume 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 VK 912 Well "A". BOP equipment will be installed and tested while conducting operations below surface casing. All BOPE will be tested every 14 days using water. Annular and ram BOP's will be function tested every 7 days between pressure tests. BOP's will include at least one 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 conducted on the VK 912 Well "A". These onsite supervisors will witness and review all BOP tests, casing tests and formation integrity tests. Formation integrity tests must be approved by the Talos drilling superintendent, manager or project drilling engineer prior to drilling ahead.

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

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

Management and Direct Supervision Processes:

- Act in accordance with the latest version 2016 WCR
- Drilling Supervisors, Completion Supervisors, MODU OIM's, Drillers, and Tool Pushers, (including all personnel that may be acting in these capacities) must hold a valid well control certificate from an accredited IWCF or WellCAP organization.
- Compliance with all federal rules and regulations: CFRs, NTLs, and Final Rules
- Pursuant to wellbore cementing and zonal isolation techniques, all cementing operations will be modeled and designed under the guidelines set forth in API RP 65 Part I & II.
- RP 53 for Blowout Prevention Equipment Systems for Drilling Wells and RP 16Q for Marine Drilling Risers will be used for installation, testing and maintenance of the surface and subsea marine risers and BOP systems.
- Utilization of Talos management systems: SEMS and MOC

- Adherence to Contractors Safety Management Systems
- Ensure proper physical barriers are in place to prevent uncontrolled flow
- Professionally certified and peer reviewed well design (casing and cementing)
- Contractor engagement meeting to gain alignment on well plan
- Specific procedures to execute well plan

Well and rig equipment:

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

Drilling Practices:

- Volume measurements relative to the well will be monitored at all times.
- All critical pressure test charts (i.e. negative tests, casing tests, FIT/LOT) will be reviewed by Drilling Engineer/Drilling Supervisor prior to continuing with operations.
- During drilling operations, slow circulating rates (SCR) will be taken and recorded for each mud pump at least after BHA or mud weight changes and 500 feet of formation drilled.

- Flow checks shall be conducted after drilling breaks, prior to tripping, after or during lost circulation events, pumping out, prior to nippling down 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 below 20" casing.

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.

SECTION C
GEOLOGICAL AND GEOPHYSICAL INFORMATION

(a) Geologic Description
Proprietary data.

(b) Structure Map(s)
Current structure contour maps drawn on the top of each prospective hydrocarbon sand, showing the entire lease block, the location of each proposed well(s), and the locations of geological cross-sections are included as an attachment to this section as Proprietary Information.

(c) Interpreted Seismic Lines
An interpreted 2D/3D seismic line cross section map is included for the proposed well(s) in the attachment(s) to this section as Proprietary Information.

(d) Geological Structure Cross-Sections
Interpreted geological structure cross-sections showing the location and depth of each proposed well and at least one key horizon and the objective sands labeled using standard biostratigrahic terms are included with this plan as an attachment to this section as Proprietary Information.

(e) Shallow Hazards Report
A shallow hazards survey was conducted by Echo Offshore, LLC over Viosca Knoll Block 912.

The 3D Geohazard Assessment is being submitted as an attachment to the proprietary copy of this plan.

(f) Shallow Hazards Assessment
Utilizing the 3D seismic exploration data, a shallow hazards assessment was prepared for the proposed surface locations, and is included as an attachment to this section**.**

(g) High Resolution Seismic Lines
Attached to the Proprietary Copy of this Plan, is 3-D survey information including swath bathymetry/seafloor rendering/edge detection (fault scarp trends) overlain with the seafloor amplitude.

(h) Stratigraphic Column
In accordance with NTL 2008-G04, this information is not applicable to this plan as it is a Development Operations Coordination Document.

(i) Time vs Depth Tables
In accordance with NTL 2008-G04, the information in this section is not applicable to the activities proposed herein as this plan is a Development Operations Coordination Document.

SECTION D
HYDROGEN SULFIDE INFORMATION

(a) Concentration

Talos does not anticipate encountering any H_2S during the proposed operations.

(b) Classification

Talos requests that the zones in the proposed drilling operations in this plan are classified as an area where the absence of H_2S has been confirmed.

(c) H2S Contingency Plan

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(d) Modeling Report

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

SECTION E
MINERAL RESOURCE CONSERVATION INFORMATION

(a) Technology & Reservoir Engineering Practices and Procedures
Proprietary data.

(b) Technology and Recovery Practices and Procedures
Proprietary data.

(c) Reservoir Development
Proprietary data.

SECTION F
BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

(a) High-Density Deepwater Benthic Communities Information
Activities proposed in this plan could disturb seafloor in water depths greater the 300 meters (984 feet), therefore, a report as described in Attachment A of NTL No. 2009-G40 "Deepwater Benthic Communities" has been conducted using 3-D seismic information and is included with the wellsite clearance letter/maps for each location. All seafloor features and areas that could be disturbed by the activities proposed in this plan have been identified. As referenced in that document, features or areas that could support high-density sensitive sessile benthic communities are not located within 2000 feet of any proposed mud and cuttings discharge location. No sites with the potential to host benthic communities were identified in the study area.

(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
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 Bottoms (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 Bottoms (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) Threatened and Endangered Species, Critical Habitat, and Marine Mammal Information
Endangered marine mammal species as listed under the Endangered Species Act that might occur in the Gulf of Mexico are the West Indian manatee (Trichechus manatus), northern right whale (Eubalaena glacialis), fin whale (Balaenoptera physalus), humpback whale (Megaptera novaiangliae), sei whale (Balaenoptera borealis), sperm whale (Physeter macrocephalus), and blue whale (Balaenoptera musculus). Endangered or threatened sea turtle species that might occur in the Gulf of Mexico are Kemp's ridley (Lepidochelys kempii), green turtle (Chelonia mydas), hawksbill (Eretmochelys imbricate), leatherback (Demochelys coriacea), and loggerhead (Caretta caretta) (USDOI, OCS EIS/EA MMS 2007-2012). The only listed threatened fish species in the Gulf of Mexico is the Gulf sturgeon (Ancipenser oxyrincus desotoi).

The subject area(s) and block(s) are not designated as a critical habitat for any of these species. Talos Petroleum 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 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 lnjured/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

(h) Archaeological Report

Archaeological Survey Report has been prepared in accordance with NTL 2005-G07. Review of the data obtained during the archaeological and shallow hazard study does not indicate the presence of any potential cultural resources.

A copy of this report is included as an attachment to this plan.

(j) Air and Water Quality Information

The State of Florida is not an affected State for the activities proposed for in this plan; therefore pursuant to NTL No. 2008-G04, this information is not required.

(k) Socioeconomic Information

The State of Florida is not an affected State for the activities proposed for in this plan; therefore pursuant to NTL No. 2008-G04, this information is not required.

APPENDIX A – PUBLIC SHALLOW HAZARDS STATEMENTS

Public Shallow Hazards Statement – Proposed VK912-A well Location

November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213-2394

Reference: Shallow Hazards Analysis
Viosca Knoll Block 912
(OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-A well location in Block 912, Viosca Knoll Area (OCS-G-06893). This letter addresses seafloor and shallow geologic conditions that may impact exploratory drilling operations within 2,000ft of the proposed well site. The depth limit of this site clearance assessment is 2.361 seconds two-way time (TWT), -6,519ft below sea surface (4,161ft below seafloor).

Seafloor Hazards. The proposed location is in an area of smooth seafloor with no indications of seafloor hydrocarbon fluid seeps or archaeological resources within 2,000ft of the proposed well location.

Sub-Seafloor Hazards. Identified amplitude anomalies indicative of shallow gas occur within the 2,000ft radius at Horizon H20 and Unit D. However, the vertical borehole will not penetrate any identified risk of gas anomalies. The well-path will not traverse any faults at the proposed well.

A **Slight Shallow Water Flow Risk** is interrpeted to sand-rich intervals in Unit D, and Unit E and the level of a sand interbed at Horizon H20.

Proposed VK912-A Well Location (Surface)							
Location Coordinates							
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**		
Latitude	29°	06’	22.209”	North	Easting	1,286,990	US ft E
Longitude	88°	06’	25.482”	West	Northing	10,564,540	US ft N
FWL Viosca Knoll 912			3,950ft		US ft	Inline	1964
FNL Viosca Knoll 912			740ft		US ft	Crossline	6294
Water Depth: -2,358ft			Slope: 2.7° SE				
Nearest Shoreline			47.09 Nautical Miles @ 275°				
Port of Operation			Fourchon 109.72 Nautical Miles @ 271°				
Nearest Manned Platform			A-Ram Powell in VK956			3.26 Nautical Miles @ 163.97°	

Conclusions and Recommendations. No drilling hazards or problems are anticipated at the seafloor.

No risk of gas is assigned at the proposed well. The well-path will not traverse any faults.

A **Slight Shallow Water Flow Risk** is interpreted at sand-rich intervals in Unit D and Unit E and at Horizon H20.

Sincerely,
Talos Petroleum, LLC

APPENDIX B – SENSITIVE SESSILE BENTHIC COMMUNITY STATEMENT

Sensitive Sessile Benthic Communities Statement – Proposed VK912-A Well Location

Talos Petroleum, LLC

November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213

Reference: Sensitive Sessile Benthic Community Summary
Proposed VK912-A Well Location in Green Canyon VK912 (OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-A Well Location in Block 912, Viosca Knoll (OCS-G-06893). This letter addresses location proximity to potential sensitive sessile benthic community sites. This well will be drilled from a dynamically positioned drilling module; therefore, an anchoring assessment is not required.

This sensitive sessile benthic community summary letter is issued as a supplement to Echo Report No. 19-034-52/2019-161 entitled: "3D Geohazard Assessment, Viosca Knoll VK912" dated September 2019. A Biological, Physical and Socio-economic Map is included illustrating the areas of potential seafloor impact.

Potential Sensitive Sessile Benthic Communities

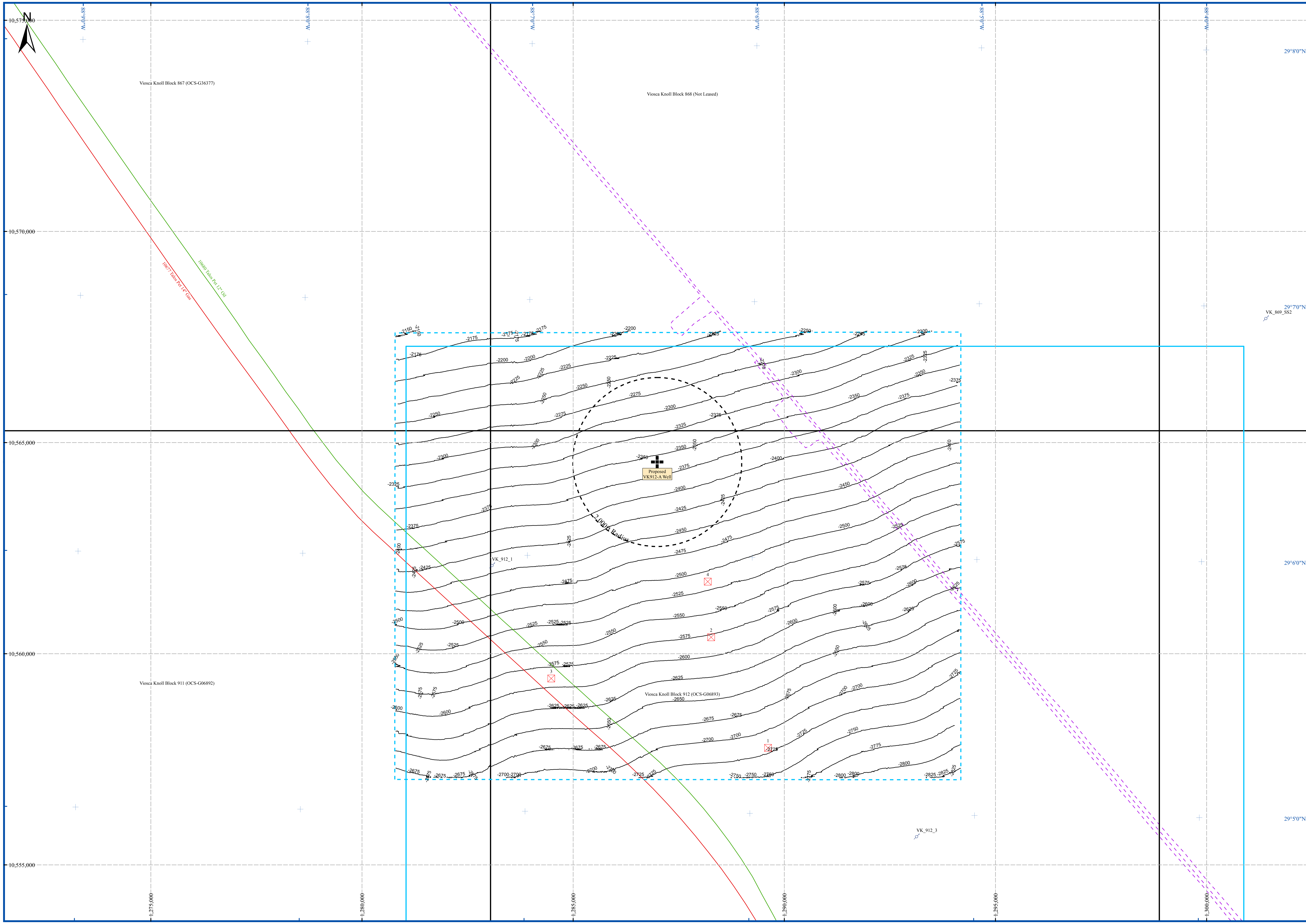
Features or areas that could support high-density sensitive sessile benthic communities are ***not*** located within 2,000 feet of any proposed mud and cuttings discharge location. No sites with the potential to host benthic communities were identified in the study area.

Proposed VK912-A Well Location (Surface)								
Location Coordinates								
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**			
Latitude	29°	06'	22.209"	North	Easting	1,286,990		US ft E
Longitude	88°	06'	25.482"	West	Northing	10,564,540		US ft N
FWL Viosca Knoll 912			3,950ft		US ft	Inline		1964
FNL Viosca Knoll 912			740ft		US ft	Crossline		6294
Water Depth: -2,358ft			Slope: 2.7° SE					
Nearest Shoreline			47.09 Nautical Miles @ 275°					
Port of Operation			Fourchon 109.72 Nautical Miles @ 271°					
Nearest Manned Platform			A-Ram Powell in VK956			3.26 Nautical Miles @ 163.97°		

There are no areas with the potential to host a Sensitive Sessile Benthic Community within 2,000ft of the proposed location.

Conclusions and Recommendations: The proposed VK912-A Well Location in VK912 will not impact any sites favorable for development of sensitive sessile benthic communities.

Sincerely,
Talos Petroleum, LLC



LEGEND

- Proposed VK912-A Well Location (1,286,990ft E / 10,564,540ft N)
- Existing wells
- Study area boundary
- Block boundaries
- AUV boundary
- Oil pipeline
- Gas pipeline
- Abandoned flowlines and umbilical lines
- -2575 Depth in feet below sea surface to seabed, contoured at 25ft intervals
- Sonar contacts

GEODETIC INFORMATION

Coordinate System: NAD 1927 UTM Zone 16N
Projection: Transverse Mercator
Datum: North American 1927
Units: Foot US

False Easting: 1,640,416.6667
False Northing: 0.0000
Central Meridian: -87.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000

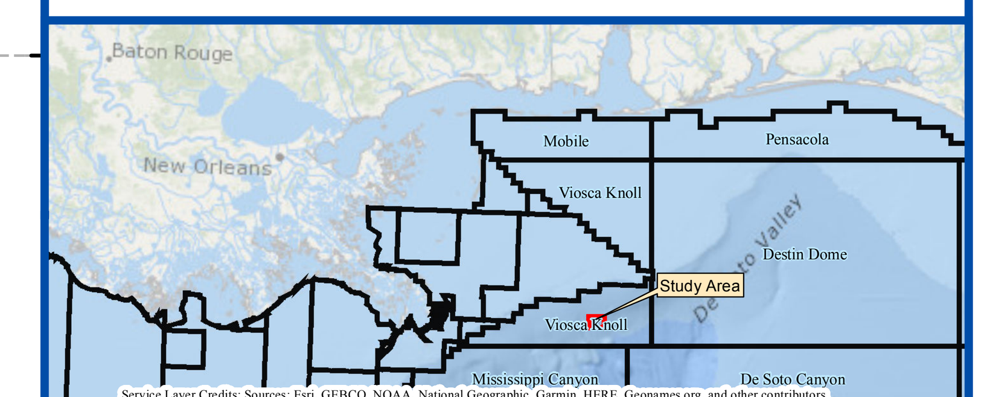


Chart scale 1" = 1,000'

0 625 1,250 2,500 3,750 Feet
0 190 380 760 1,140 Meters

Echo OFFSHORE LLC

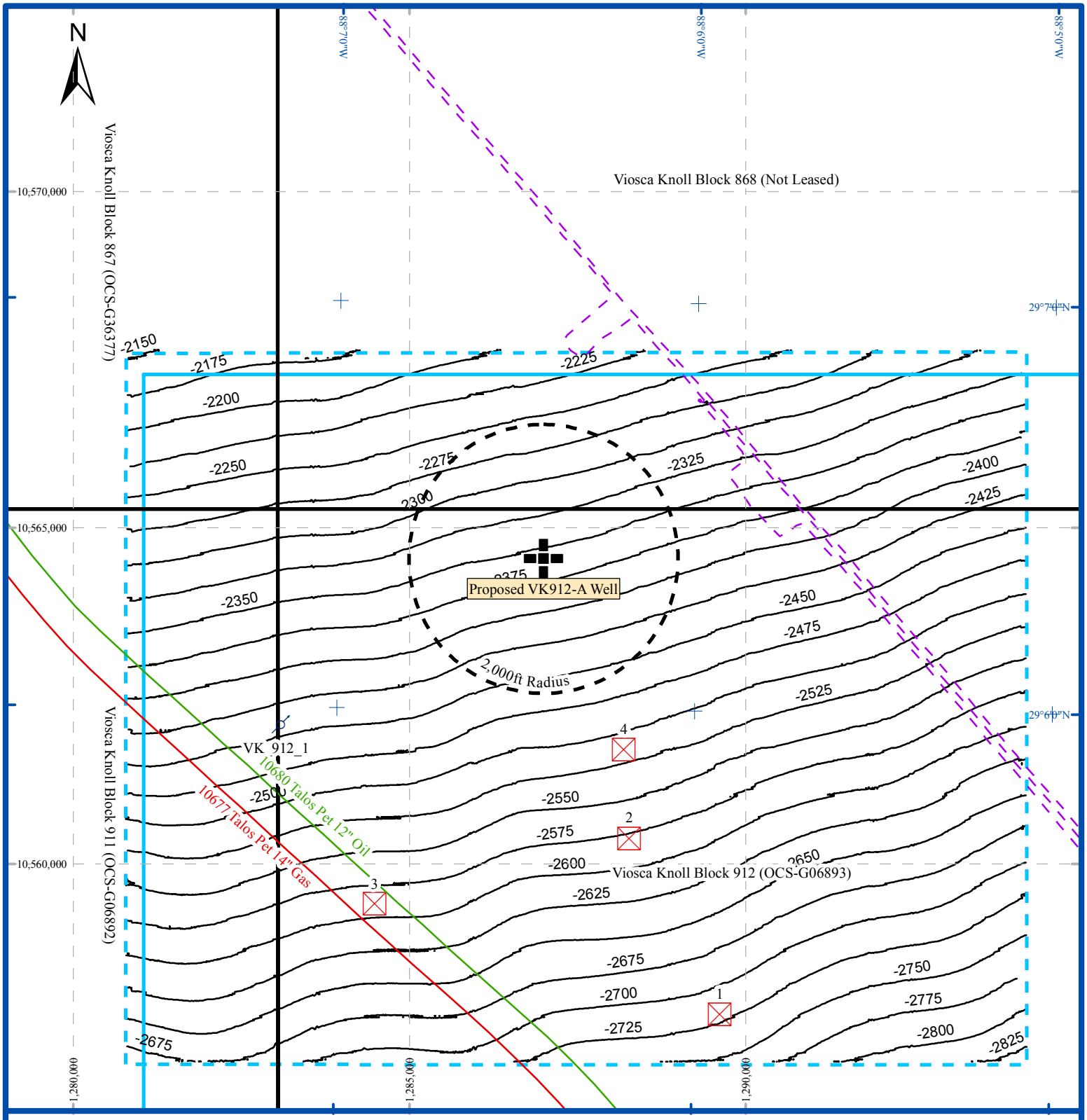
TALOS ENERGY LLC

3D GEOHAZARD ASSESSMENT
GULF OF MEXICO
VIOSCA KNOLL BLOCK
PROPOSED VK912-A WELL LOCATION

BIOLOGICAL, PHYSICAL AND SOCIO-ECONOMIC CHART

Prepared by: Ocean Geo Solutions Inc. 8399 Westview Drive, Houston, Texas, 77055. Suite 200 Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	November 26, 2019	Final	LF	KB	ARH
SURVEY DATE	N/A	REPORT REF	2019-202	REF NO	2019-202.01



Proposed VK912-A Well Location (1,286,990ft E / 10,564,540ft N)

Existing well

Oil pipeline

Gas pipeline

Abandoned flowlines and umbilical lines

Study area boundary

Block boundaries

AUV boundary

-2350 Depth in feet below sea surface to seabed, contoured at 25ft intervals

Sonar contacts

Chart scale 1" = 2,000'

0 500 1,000 2,000 Feet

0 125 250 500 Meters

Biological, Physical & Soci-Economic Plat

APPENDIX C – ARCHAEOLOGICAL ASSESSMENT

Echo OFFSHORE LLC

36499 Perkins Road
Prairieville, Louisiana 70769
Telephone: 225.673.2163
www.echo-offshore.net

November 18, 2019 Job #19-034-52

Bureau of Ocean Energy Management (MS 5230)
Gulf of Mexico OCS Region
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

RE: Talos Petroleum, LLC
Proposed OCS-G 06893 Well 'A'
Block 912, Viosca Knoll Area
Archaeological Assessment

Dear Staff:

Talos Petroleum, LLC (Talos) proposes to drill the OCS-G 06893 Well 'A' from the following surface location in Block 912, Viosca Knoll Area:

Datum: NAD 27	Spheroid: Clarke 1866	Projection: UTM	Zone: 16	Central Meridian: 87° 00' West
Latitude: 28° 06' 22.209" N			Longitude: 88° 06' 25.482" W	
X: 1,286,999.00			Y: 10,564,540.00	
FWL: 3,950'			FNL: 740'	

This assessment addresses a 2,000' radius surrounding the proposed well location based on use of a dynamically positioned drill rig. Echo Offshore, LLC investigated the northwest portion of Block 912, Viosca Knoll, in October of 2019 on behalf of Talos. The resulting report is titled "Archaeological Investigation, Blocks 912, 911, 867, & 868, Viosca Knoll Area" and was prepared under Echo Job No. 19-033-42 and submitted under separate cover. Talos has contracted Echo Offshore, LLC to provide this ***archaeological analysis (NTL No. 2005-G07)*** of the proposed well location based on the analysis of the above referenced data set in accordance with the Bureau of Ocean Energy Management (BOEM) Gulf of Mexico OCS Region.

- ***Water depth*** is approximately 2,358 feet surrounding the proposed drill site. Water depths increase to the southeast across the proposed well site at rate of approximately 2.7°.

- ***Seafloor soils*** are reported to be clay (MMS 1983 Visual No. 3; MMS 1986 Visual No. 5).

  Infrastructure closest to the site is the 4-5" W&T Umbilical (Segment 17895) located approximately 3,025 feet NE of the proposed well site. No infrastructure is located within 2,000 feet of the proposed well site.

- ***Magnetic data*** is not required in these water depths per NTL 2005-G07.

- ***Sonar data*** recorded a generally featureless seafloor with evidence of sporadic anchor scaring. A total of four (4) discrete sonar targets within the study area, none of which are located within 2,000 feet of the proposed well site. The closest sonar target to the proposed well site is Target No. 4, located approximately 3,072 feet SW of the proposed site. This indistinct feature measured 44 x 32 feet with no measurable relief. Target No. 4 is not considered archaeological in nature and does not pose a hazard to operations at this distance from the well site.

No evidence of intact shipwreck sites was observed within 2,000 feet of the proposed well site and none of the sonar target identified via the block investigation are considered high probability archaeological features.

Talos Petroleum, LLC and subcontractors will apply the safest and best available technologies during drilling operations. In compliance with 30 CFR 250.194(c), 30 CFR 250.1010(c), and NTL 2005-G07, if materials are observed during operations that could indicate the presence of a shipwreck, shipwreck site, or other potentially significant archaeological resource, operations will cease and the Regional Supervisor, Leasing and Environment with the BOEM/BSEE will be notified within 48 hours of discovery.

Sincerely,

Matthew Keith
Geoscience Manager/Marine Archaeologist

APPENDIX A – PUBLIC SHALLOW HAZARDS STATEMENTS

Public Shallow Hazards Statement – Proposed VK912-B well Location

November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213-2394

Reference: Shallow Hazards Analysis
Viosca Knoll Block 912
(OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-B well location in Block 912, Viosca Knoll Area (OCS-G-06893). This letter addresses seafloor and shallow geologic conditions that may impact exploratory drilling operations within 2,000ft of the proposed well site. The depth limit of this site clearance assessment is 2.361 seconds two-way time (TWT), -6,475ft below sea surface (3,995ft below seafloor).

Seafloor Hazards. The proposed location is in an area of smooth and slightly undulated seafloor with two minor seafloor drainage pathways. These should not cause any problems.

There are no indications of seafloor hydrocarbon fluid seeps within 2,000ft of the proposed well location.

The T&A VK912-1 well is located approximately 775ft to the NNW. An oil pipeline is located 425ft to the southwest and a gas pipeline is located 960ft to the southwest.

In accordance with NTL stipulations for archaeological resources, an archeological survey was performed in the study area in September 2019. No features of archaeological significance were identified within 2,000ft of the proposed well location. The nearest target (Target #3) is located 2,245ft to the southeast.

Sub-Seafloor Hazards. Identified amplitude anomalies indicative of shallow gas occur within the 2,000ft radius in Units B, at Horizon H20, Unit D, and Unit E. The vertical borehole will penetrate a a **Slight Risk of Gas** in Unit D and a **Moderate Risk of Gas** in Unit E. Full well control is expected to have been established above both these potential hazards. A vertical borehole will penetrate a fault within Unit D at -5,341ft below sea surface (2,861ft below seafloor). Wellbore stability and drilling fluid circulation problems may occur at the level of the fault, especially if pressures over hydrostatic are exerted by the drilling fluid column.

A **Slight Shallow Water Flow Risk** is assigned to a sand-rich interval at Horizon H20 and in Unit D and Unit E.

Proposed VK912-B Well Location (Surface)							
Location Coordinates							
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**		
Latitude	29°	05’	50.378”	North	Easting	1,283,340	US ft E
Longitude	88°	07’	06.295”	West	Northing	10,561,360	US ft N
FWL Viosca Knoll 912	300ft	US ft	Inline	1966			
FNL Viosca Knoll 912	3,920ft	US ft	Crossline	6235			
Water Depth: -2,480ft	Slope: 3.1° SE						
Nearest Shoreline	44.87 Nautical Miles @ 274°						
Port of Operation	Fourchon 108.76 Nautical Miles @ 271°						
Nearest Manned Platform	A-Ram Powel in VK956	2.97 Nautical Miles @ 148.0°					

Conclusions and Recommendations. No problems are anticipated at the seafloor. The T&A VK912-1 well is located 775ft to the NNW. An oil pipeline is located 425ft to the southwest and a gas pipeline is located 960ft to the southwest.

A **Slight Risk of Gas** is interpreted at a sand lens in Unit D. A **Moderate Risk of Gas** is interpreted within a sand body in Unit E. A vertical borehole will penetrate a fault within Unit D.

A **Slight Shallow Water Flow Risk** is assigned to a sand-rich interval at Horizon H20 and in Unit D, and Unit E.

Sincerely,
Talos Petroleum, LLC

APPENDIX B – SENSITIVE SESSILE BENTHIC COMMUNITY STATEMENT

Sensitive Sessile Benthic Communities Statement – Proposed VK912-B Well Location

Talos Petroleum, LLC

November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213

Reference: Sensitive Sessile Benthic Community Summary
Proposed VK912-B Well Location in Green Canyon VK912 (OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-B Well Location in Block 912, Viosca Knoll (OCS-G-06893). This letter addresses location proximity to potential sensitive sessile benthic community sites. This well will be drilled from a dynamically positioned drilling module; therefore, an anchoring assessment is not required.

This sensitive sessile benthic community summary letter is issued as a supplement to Echo Report No. 19-034-52/2019-161 entitled: "3D Geohazard Assessment, Viosca Knoll VK912" dated September 2019. A Biological, Physical and Socio-economic Map is included illustrating the areas of potential seafloor impact.

Potential Sensitive Sessile Benthic Communities

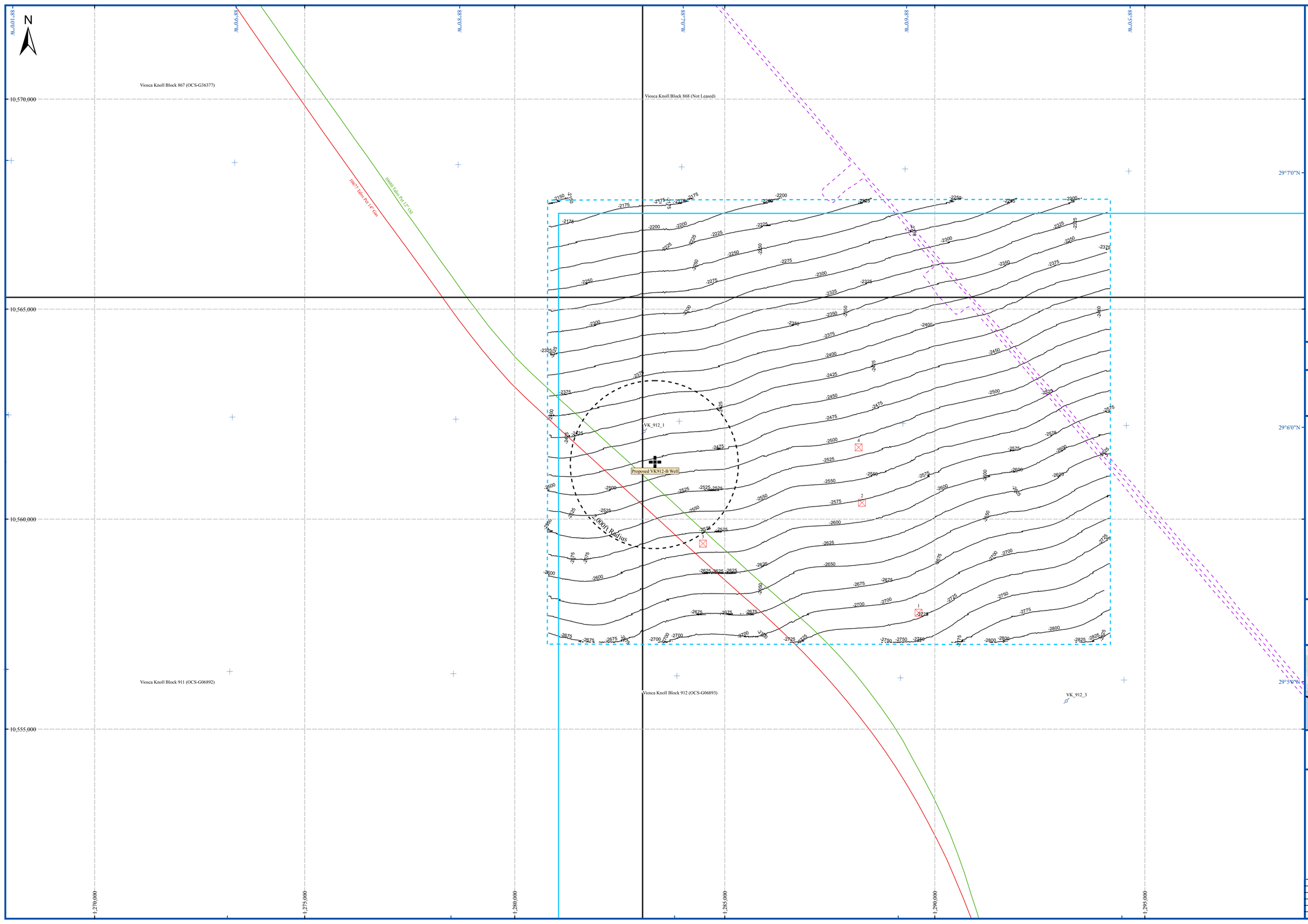
Features or areas that could support high-density sensitive sessile benthic communities are ***not*** located within 2,000 feet of any proposed mud and cuttings discharge location. No sites with the potential to host benthic communities were identified in the study area.

Proposed VK912-B Well Location (Surface)								
Location Coordinates								
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**			
Latitude	29°	05'	50.378"	North	Easting	1,283,340	US ft E	
Longitude	88°	07'	06.295"	West	Northing	10,561,360	US ft N	
FWL Viosca Knoll 912			300ft		US ft	Inline	1966	
FNL Viosca Knoll 912			3,920ft		US ft	Crossline	6235	
Water Depth: -2,480ft			Slope: 3.1° SE					
Nearest Shoreline			44.87 Nautical Miles @ 274°					
Port of Operation			Fourchon 108.76 Nautical Miles @ 271°					
Nearest Manned Platform			A-Ram Powel in VK956			2.97 Nautical Miles @ 148.0°		

There are no areas with the potential to host a Sensitive Sessile Benthic Community within 2,000ft of the proposed location.

Conclusions and Recommendations: The proposed VK912-B Well Location in VK912 will not impact any sites favorable for development of sensitive sessile benthic communities.

Sincerely,
Talos Petroleum, LLC



LEGEND

- Proposed VK912-B Well Location (1,283,340ft E / 10,561,360ft N)
- Existing wells
- Study area boundary
- Block boundaries
- AUV boundary
- Oil pipeline
- Gas pipeline
- Abandoned flowlines and umbilical lines
- -2575 Depth in feet below sea surface to seabed, contoured at 25ft intervals
- Sonar contacts

GEODETIC INFORMATION

Coordinate System: NAD 1927 UTM Zone 16N
Projection: Transverse Mercator
Datum: North American 1927
Units: Foot US

False Easting: 1,640,416.6667
False Northing: 0.0000
Central Meridian: -87.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000

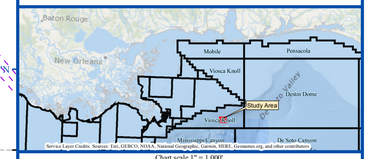


Chart scale 1" = 1,000'

0	625	1,250	2,500	3,750 Feet
0	190	380	760	1,140 Meters

Echo OFFSHORE LLC

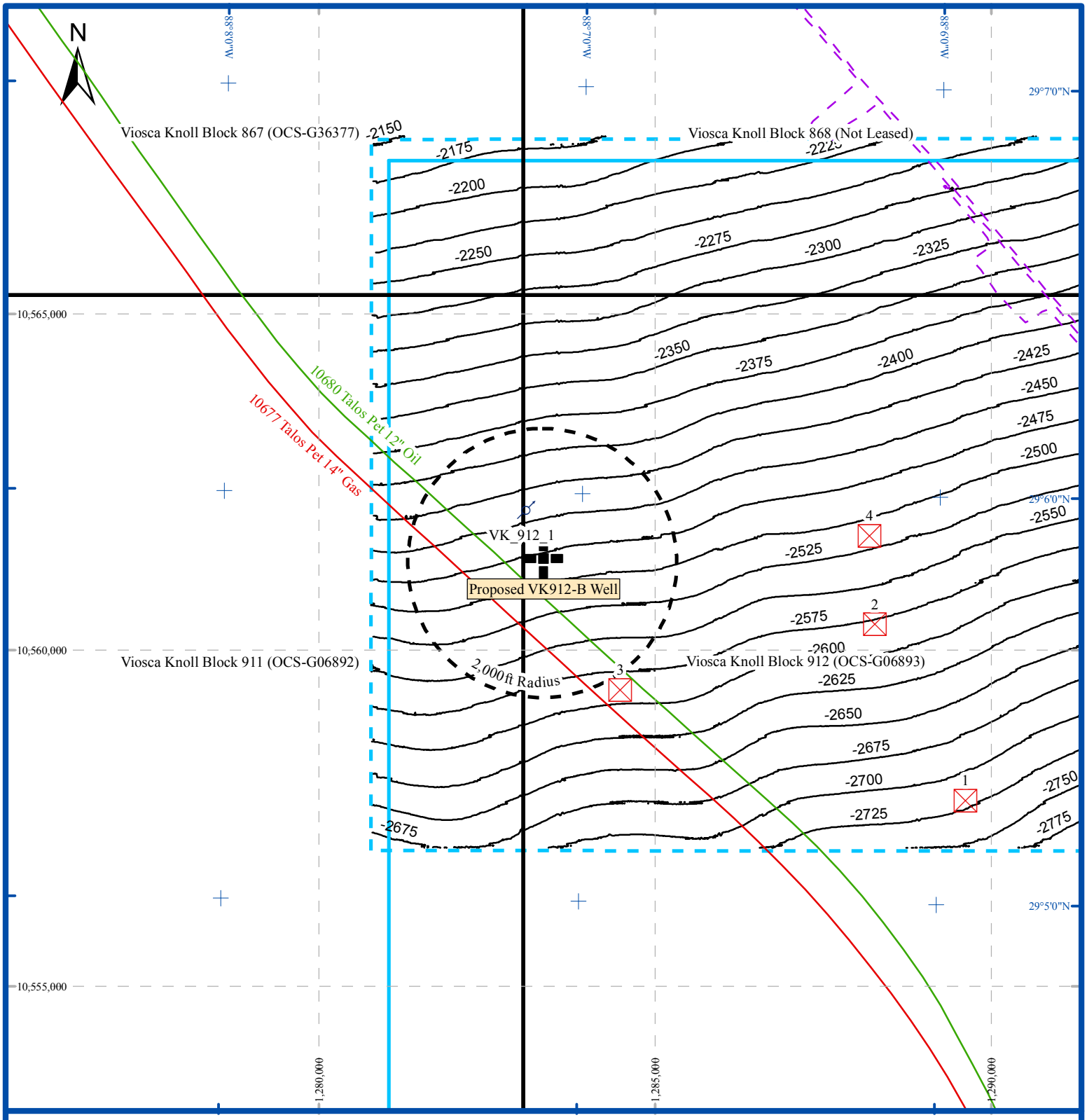
TALOS ENERGY LLC

3D GEOHAZARD ASSESSMENT
GULF OF MEXICO
VIOSCA KNOLL BLOCK
PROPOSED VK912-B WELL LOCATION

BIOLOGICAL, PHYSICAL AND SOCIO-ECONOMIC CHART

Prepared by: Ocean Geo Solutions Inc. 8399 Westview Drive, Houston, Texas, 77055. Suite 200 Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	November 26, 2019	Final	LF	KB	ARH
SURVEY DATE	N/A	REPORT REF	2019-203	REF NO	2019-203-01



Proposed VK912-B Well Location (1,283,340ft E / 10,561,360ft N)

Existing well

Oil pipeline

Gas pipeline

Abandoned flowlines and umbilical lines

Study area boundary

Block boundaries

AUV boundary

-2475 Depth in feet below sea surface to seabed, contoured at 25ft intervals

Sonar contacts

Chart scale 1" = 2,000'

0 500 1,000 2,000 Feet

0 125 250 500 Meters

Biological, Physical & Soci-Economic Plat

APPENDIX C – ARCHAEOLOGICAL ASSESSMENT

Echo OFFSHORE LLC

36499 Perkins Road
Prairieville, Louisiana 70769
Telephone: 225.673.2163
www.echo-offshore.net

November 18, 2019 Job #19-034-52

Bureau of Ocean Energy Management (MS 5230)
Gulf of Mexico OCS Region
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

RE: Talos Petroleum, LLC
Proposed OCS-G 06893 Well 'B'
Block 912, Viosca Knoll Area
Archaeological Assessment

Dear Staff:

Talos Petroleum, LLC (Talos) proposes to drill the OCS-G 06893 Well 'B' from the following surface location in Block 912, Viosca Knoll Area:

Datum: NAD 27	Spheroid: Clarke 1866	Projection: UTM	Zone: 16	Central Meridian: 87° 00' West
Latitude: 28° 05' 50.378" N			Longitude: 88° 07' 06.295" W	
X: 1,283,340.00			Y: 10,561,360.00	
FWL: 300'			FNL: 3,920'	

This assessment addresses a 2,000' radius surrounding the proposed well location based on use of a dynamically positioned drill rig. Echo Offshore, LLC investigated the northwest portion of Block 912, Viosca Knoll, in October of 2019 on behalf of Talos. The resulting report is titled "Archaeological Investigation, Blocks 912, 911, 867, & 868, Viosca Knoll Area" and was prepared under Echo Job No. 19-033-42 and submitted under separate cover. Talos has contracted Echo Offshore, LLC to provide this ***archaeological analysis (NTL No. 2005-G07)*** of the proposed well location based on the analysis of the above referenced data set in accordance with the Bureau of Ocean Energy Management (BOEM) Gulf of Mexico OCS Region.

- ***Water depth*** is approximately 2,480 feet surrounding the proposed drill site. Water depths increase to the southeast across the proposed well site at rate of approximately 3.1°.

- ***Seafloor soils*** are reported to be clay (MMS 1983 Visual No. 3; MMS 1986 Visual No. 5).

  Infrastructure closest to the site is the 12" Talos pipeline (Segment 10680) located approximately 425 feet SW of the proposed well site. T&A Well 1 is located approximately 775 feet to the NNW and the 14" Talos pipeline (Segment 10677) is

located approximately 960 feet to the SW.

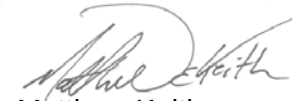
- ***Magnetic data*** is not required in these water depths per NTL 2005-G07.

- ***Sonar data*** recorded a generally featureless seafloor with evidence of sporadic anchor scaring. A total of four (4) discrete sonar targets within the study area, none of which are located within 2,000 feet of the proposed well site. The closest sonar target to the proposed well site is Target No. 3, located approximately 2,258 feet SE of the proposed site. This indistinct feature measured 6 x 4 feet with approximately half a foot of relief. Target No. 3 is not considered archaeological in nature and does not pose a hazard to operations at this distance from the well site.

No evidence of intact shipwreck sites was observed within 2,000 feet of the proposed well site and none of the sonar target identified via the block investigation are considered high probability archaeological features.

Talos Petroleum, LLC and subcontractors will apply the safest and best available technologies during drilling operations. In compliance with 30 CFR 250.194(c), 30 CFR 250.1010(c), and NTL 2005-G07, if materials are observed during operations that could indicate the presence of a shipwreck, shipwreck site, or other potentially significant archaeological resource, operations will cease and the Regional Supervisor, Leasing and Environment with the BOEM/BSEE will be notified within 48 hours of discovery.

Sincerely,



Matthew Keith
Geoscience Manager/Marine Archaeologist

APPENDIX A – PUBLIC SHALLOW HAZARDS STATEMENTS

Public Shallow Hazards Statement – Proposed VK912-D well Location
November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213-2394

Reference: Shallow Hazards Analysis
Viosca Knoll Block 912
(OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-D well location in Block 912, Viosca Knoll Area(OCS-G-06893). This letter addresses seafloor and shallow geologic conditions that may impact exploratory drilling operations within 2,000ft of the proposed well site. The depth limit of this site clearance assessment at 2.362 seconds two-way time (TWT), -6,474ft below sea surface (4,016ft below seafloor).

Seafloor Hazards. The proposed location is in an area of smooth and slightly undulated seafloor at the edge of a minor seafloor drainage pathways. This feature should not cause any problems.

There are no indications of seafloor hydrocarbon fluid seeps within 2,000ft of the proposed well location.

The T&A VK912-1 is located 2,621ft to the WSW of the proposed well. All proposed wells should avoid exiting wells.

In accordance with NTL stipulations for archaeological resources, an archeological survey was performed in the study area in September 2019. No features of archaeological significance were identified within 2,000ft of the proposed well location. The nearest target (Target # 4) is located 2,534ft to the ESE. All are interpreted as modern anthropogenic debris associated with the developments in the area. **No sites of possible archaeological resources were interpreted within 2,000ft of the proposed well location.**

Sub-Seafloor Hazards. Identified amplitude anomalies indicative of shallow gas occur within the 2,000ft radius in Units B and Unit E. The vertical borehole will not penetrate any identified risk of gas anomalies. A vertical borehole will penetrate not penetrate any faults at the proposed well.

A **Slight Shallow Water Flow Risk** is interpreted at sand-rich intervals in Unit D and Unit E and at Horizon H20.

Proposed VK912-D Well Location (Surface)							
Location Coordinates							
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**		
Latitude	29°	05’	59.433”	North	Easting	1,285,710	US ft E
Longitude	88°	06’	39.671”	West	Northing	10,562,252	US ft N
FWL Viosca Knoll 912			2,670ft	US ft	Inline	1954	
FNL Viosca Knoll 912			3,028ft	US ft	Crossline	6263	
Water Depth: -2,458 ft			Slope: 3.2° SE				
Nearest Shoreline			46.9 Nautical Miles @ 274°				
Port of Operation			Fourchon 110.53 Nautical Miles @ 272°				
Nearest Manned Platform			A-Ram Powel in VK956		2.91 Nautical Miles @ 157.3°		

Conclusions and Recommendations. No problems are anticipated at the seafloor. The T&A VK912-1 is located 2,621ft to the WSW of the proposed well.

A **Slight Risk of Gas** is interpreted within a sand body in Unit E.

A vertical borehole will not penetrate any faults at the proposed well.

A **Slight Shallow Water Flow Risk** is interpreted at sand-rich intervals in Unit D and Unit E and at Horizon H20.

Sincerely,
Talos Petroleum, LLC

APPENDIX B – SENSITIVE SESSILE BENTHIC COMMUNITY STATEMENT

Sensitive Sessile Benthic Communities Statement – Proposed VK912-D Well Location

Talos Petroleum, LLC

November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213

Reference: Sensitive Sessile Benthic Community Summary
Proposed VK912-D Well Location in Green Canyon VK912 (OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-D Well Location in Block 912, Viosca Knoll (OCS-G-06893). This letter addresses location proximity to potential sensitive sessile benthic community sites. This well will be drilled from a dynamically positioned drilling module; therefore, an anchoring assessment is not required.

This sensitive sessile benthic community summary letter is issued as a supplement to Echo Report No. 19-034-52/2019-161 entitled: "3D Geohazard Assessment, Viosca Knoll VK912" dated September 2019. A Biological, Physical and Socio-economic Map is included illustrating the areas of potential seafloor impact.

Potential Sensitive Sessile Benthic Communities

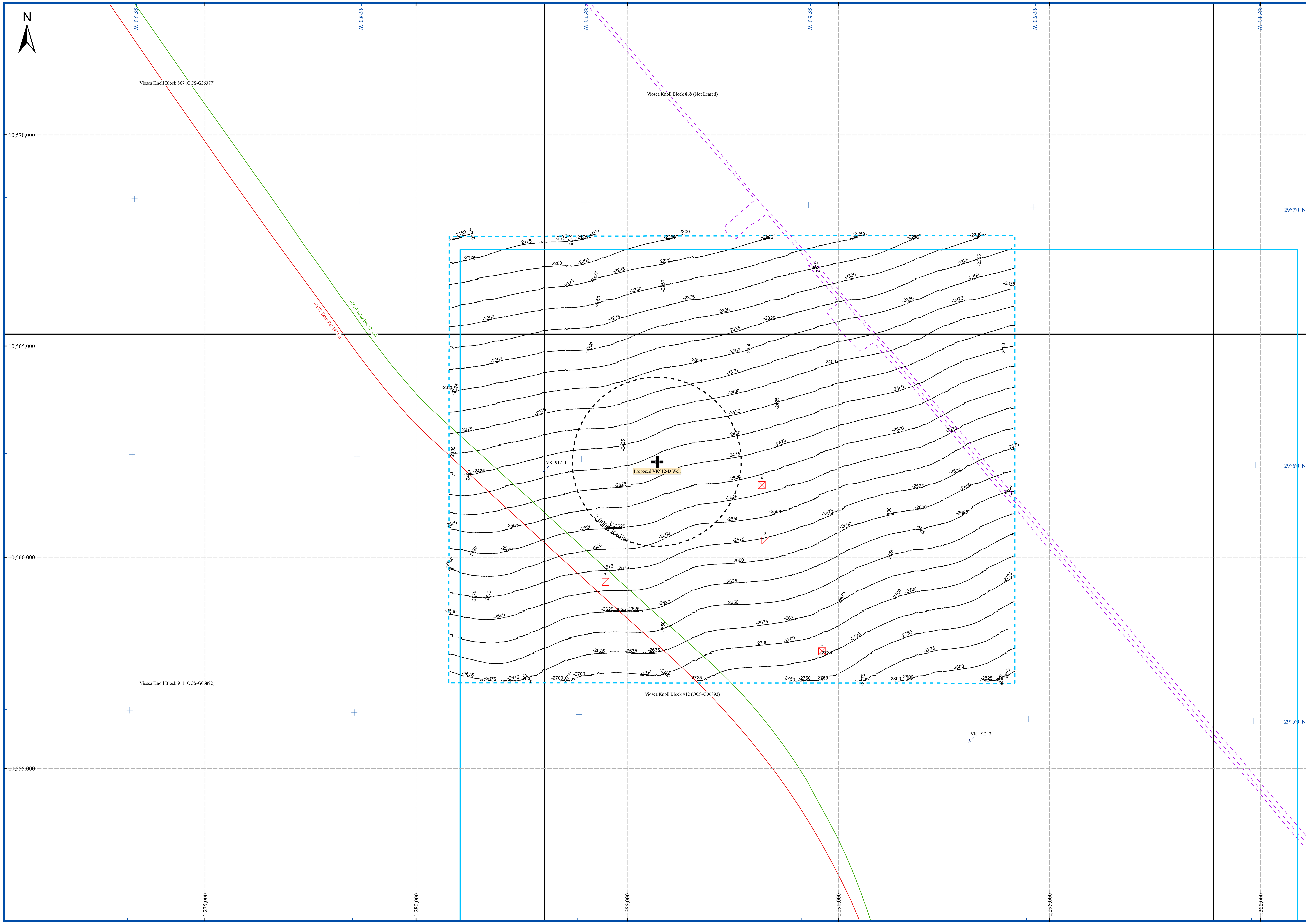
Features or areas that could support high-density sensitive sessile benthic communities are ***not*** located within 2,000 feet of any proposed mud and cuttings discharge location. No sites with the potential to host benthic communities were identified in the study area.

Proposed VK912-D Well Location (Surface)							
Location Coordinates							
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**		
Latitude	29°	05’	59.433”	North	Easting	1,285,710	US ft E
Longitude	88°	06’	39.671”	West	Northing	10,562,252	US ft N
FWL Viosca Knoll 912			2,670ft		US ft	Inline	1954
FNL Viosca Knoll 912			3,028ft		US ft	Crossline	6263
Water Depth: -2,458 ft			Slope: 3.2° SE				
Nearest Shoreline			46.9 Nautical Miles @ 274°				
Port of Operation			Fourchon 110.53 Nautical Miles @ 272°				
Nearest Manned Platform			A-Ram Powel in VK956			2.91 Nautical Miles @ 157.3°	

There are no areas with the potential to host a Sensitive Sessile Benthic Community within 2,000ft of the proposed location.

Conclusions and Recommendations: The proposed VK912-D Well Location in VK912 will not impact any sites favorable for development of sensitive sessile benthic communities.

Sincerely,
Talos Petroleum, LLC



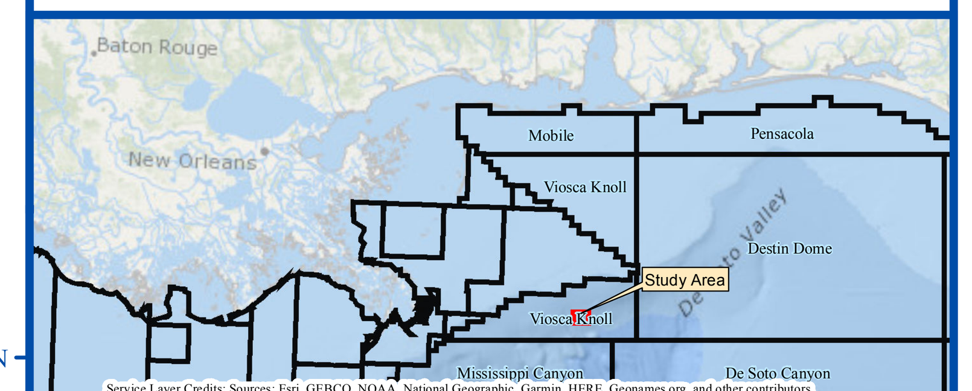
LEGEND

- Proposed VK912-D Well Location (1,285,710ft E / 10,562,252ft N)
- Existing wells
- Study area boundary
- Block boundaries
- AUV boundary
- Oil pipeline
- Gas pipeline
- Abandoned flowlines and umbilical lines
- -2575 Depth in feet below sea surface to seabed, contoured at 25ft intervals
- Sonar contacts

GEODETIC INFORMATION

Coordinate System: NAD 1927 UTM Zone 16N
Projection: Transverse Mercator
Datum: North American 1927
Units: Foot US

False Easting: 1,640,416.6667
False Northing: 0.0000
Central Meridian: -87.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000



Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors

Chart scale 1" = 1,000'

0 625 1,250 2,500 3,750 Feet
0 190 380 760 1,140 Meters

Echo OFFSHORE LLC

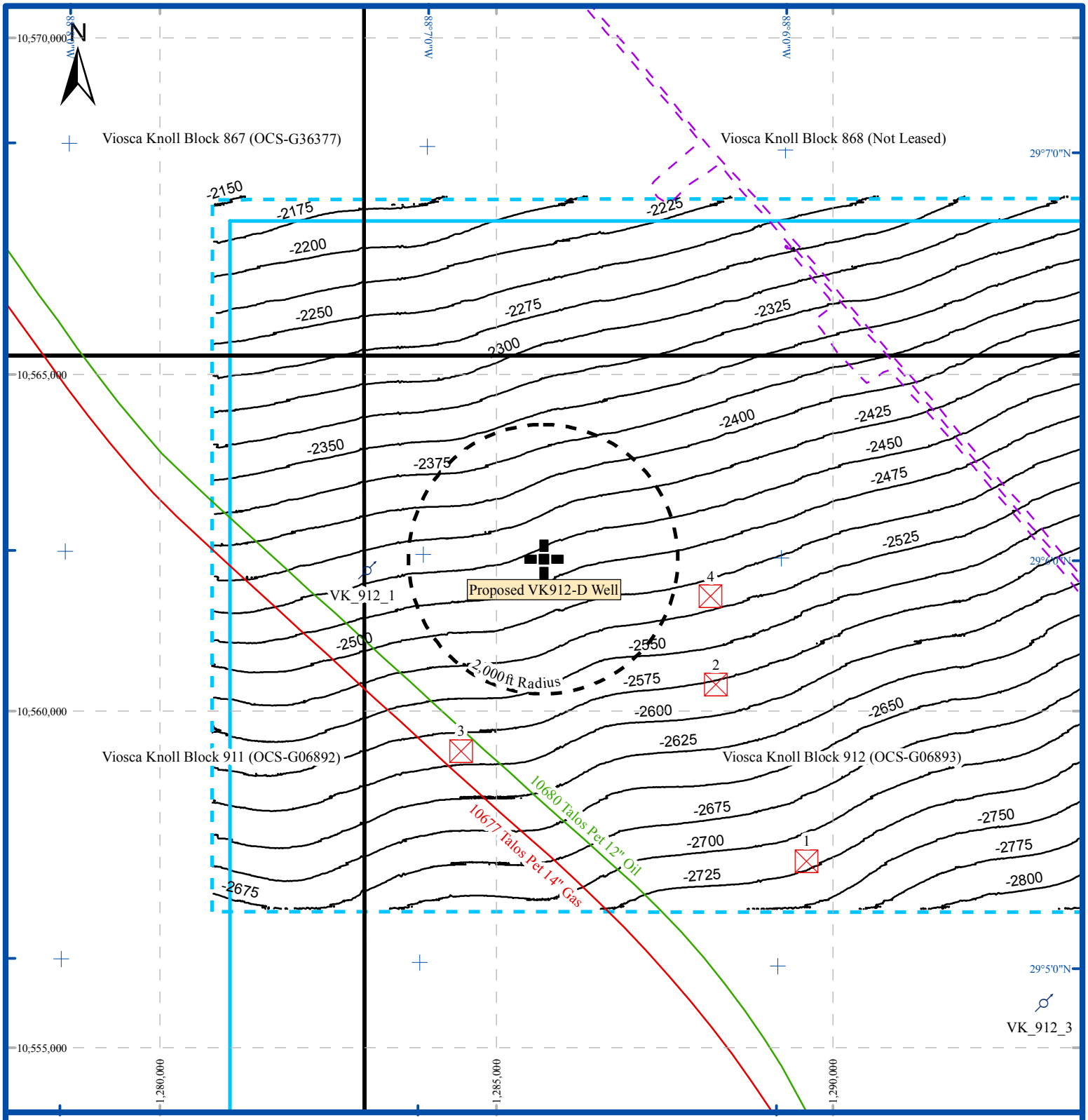
TALOS ENERGY LLC

3D GEOHAZARD ASSESSMENT
GULF OF MEXICO
VIOSCA KNOLL BLOCK
PROPOSED VK912-D WELL LOCATION

BIOLOGICAL, PHYSICAL AND SOCIO-ECONOMIC CHART

Prepared by: Ocean Geo Solutions Inc. 8399 Westview Drive, Houston, Texas, 77055. Suite 200 Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	November 26, 2019	Final	LF	KB	ARH
SURVEY DATE	N/A	REPORT REF	2019-205	REF NO	2019-205.01



Proposed VK912-D Well Location (1,285,710ft E / 10,562,252ft N)

Existing well

Oil pipeline

Gas pipeline

Abandoned flowlines and umbilical lines

Study area boundary

Block boundaries

AUV boundary

-2450 Depth in feet below sea surface to seabed, contoured at 25ft intervals

Sonar contacts

Chart scale 1" = 2,000'

0 500 1,000 2,000 Feet

0 125 250 500 Meters

Biological, Physical & Soci-Economic Plat

APPENDIX C – ARCHAEOLOGICAL ASSESSMENT

APPENDIX A – PUBLIC SHALLOW HAZARDS STATEMENTS

Public Shallow Hazards Statement – Proposed VK911-C (with a surface location in VK912) well Location

November 22, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213-2394

Reference: Shallow Hazards Analysis
Viosca Knoll Block 912
(OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the proposed VK911-C well (OCS-G06892) with a surface location in Block 912, Viosca Knoll Area (OCS-G-06893). This letter addresses seafloor and shallow geologic conditions that may impact exploratory drilling operations within 2,000ft of the proposed well site. The depth limit of this site clearance assessment at 2.169 seconds two-way time (TWT), -7,963ft MD kb, (-5,892ft TVDSS, 3,423ft TVDBML).

Seafloor Hazards. The proposed location is in an area of smooth and slightly undulated seafloor with two minor seafloor drainage pathways. These should not cause any problems.

There are no indications of seafloor hydrocarbon fluid seeps within 2,000ft of the proposed well location.

The T&A VK912-1 well is located 719ft to the southwest of the proposed well. An oil pipeline is located 1,568ft to the southwest and a gas pipeline is located 2,091ft to the southwest.

In accordance with NTL stipulations for archaeological resources, an archeological survey was performed in the study area in September 2019. No features of archaeological significance were identified within 2,000ft of the proposed well location. The nearest target (Target # 3) is located 3,150ft to the southeast. All are interpreted as modern anthropogenic debris associated with the developments in the area. **No sites of possible archaeological resources were interpreted within 2,000ft of the proposed well location.**

Sub-Seafloor Hazards. Identified amplitude anomalies indicative of shallow gas occur within the 2,000ft radius in Units B, Unit D, Unit E and at Horizon H20. The vertical borehole will penetrate a **Moderate Risk of Gas** in Unit E. Full well control is expected to have been established above this potential hazard.

A vertical borehole will penetrate a fault within Unit C at --3,983ft MD kb, (-3,899ft TVDSS, 1,472ft TVDBML) and within Unit E at -6,646ft MD kb, (-5,712ft TVDSS, 3,285ft TVDBML). Minor drilling fluid circulation and wellbore stability problems may occur.

A **Slight Shallow Water Flow Risk** is assigned to sand-rich intervals in Unit D and Unit E and at Horizon H20.

Proposed Well VK911-C (with a surface location in VK912)								
Location Coordinates								
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**			
Latitude	29°	06'	01.500"	North	Easting	1,283,767	US ft E	
Longitude	88°	07'	01.596"	West	Northing	10,562,479	US ft N	
FWL Viosca Knoll 912			727ft		US ft	Inline	1973	
FNL Viosca Knoll 912			2,801ft		US ft	Crossline	6248	
Water Depth: -2,511 (kb)ft			Slope: 2.8° SE					
Nearest Shoreline			44.71 Nautical Miles @ 274.17°					
Port of Operation			Fourchon 108.56 Nautical Miles @ 271.62°					
Nearest Manned Platform			A-Ram Powel in VK956			3.11 Nautical Miles @ 151.0°		

Conclusions and Recommendations. No problems are anticipated at the seafloor. The T&A VK912-1 is located 719ft to the southwest. An oil pipeline is located 1,568ft to the southwest and a gas pipeline is located 2,091ft to the southwest.

A **Moderate Risk of Gas** is interpreted within a sand body in Unit E.

A vertical borehole will penetrate a fault within Unit C and Unit E.

A **Slight Shallow Water Flow Risk** is interpreted at Horizon H20 and within Units D and E.

Sincerely,
Talos Petroleum, LLC

APPENDIX B – SENSITIVE SESSILE BENTHIC COMMUNITY STATEMENT

Sensitive Sessile Benthic Communities Statement
Proposed Well VK911-C (with a surface location in VK912)

Talos Petroleum, LLC

November 22, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213

Reference: Sensitive Sessile Benthic Community Summary
Proposed VK911-C (with a surface location in VK912) in Viosca Knoll 912 (OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the proposed VK911-C well (OCS-G06892) with a surface location in Block 912, Viosca Knoll Area (OCS-G-06893). This letter addresses location proximity to potential sensitive sessile benthic community sites. This well will be drilled from a dynamically-positioned drilling module; therefore, an anchoring assessment is not required.

This sensitive sessile benthic community summary letter is issued as a supplement to Echo Report No. 19-034-52/2019-161 entitled: “3D Geohazard Assessment, Viosca Knoll VK912” dated September 2019. A Biological, Physical and Socio-economic Map is included illustrating the areas of potential seafloor impact.

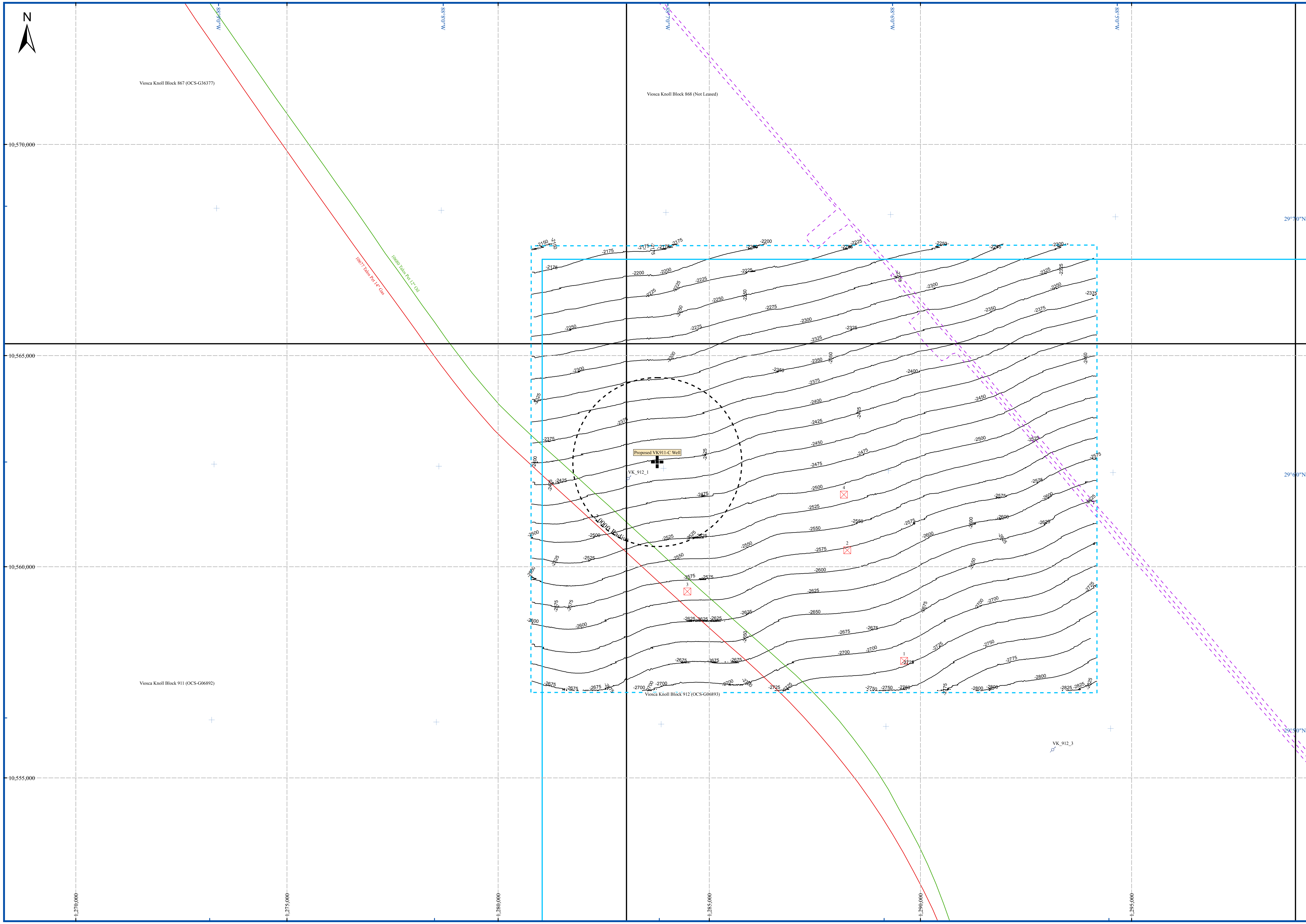
Potential Sensitive Sessile Benthic Communities
Features or areas that could support high-density sensitive sessile benthic communities are ***not*** located within 2,000 feet of any proposed mud and cuttings discharge location. No sites with the potential to host benthic communities were identified in the study area.

Proposed Well VK911-C (with a surface location in VK912)							
Location Coordinates							
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**		
Latitude	29°	06’	01.500”	North	Easting	1,283,767	US ft E
Longitude	88°	07’	01.596”	West	Northing	10,562,479	US ft N
FWL Viosca Knoll 912			727ft		US ft	Inline	1973
FNL Viosca Knoll 912			2,801ft		US ft	Crossline	6248
Water Depth: -2,511 (kb)ft			Slope: 2.8° SE				
Nearest Shoreline			44.71 Nautical Miles @ 274.17°				
Port of Operation			Fourchon 108.56 Nautical Miles @ 271.62°				
Nearest Manned Platform			A-Ram Powel in VK956			3.11 Nautical Miles @ 151.0°	

There are no areas with the potential to host a Sensitive Sessile Benthic Community within 2,000ft of the proposed location.

Conclusions and Recommendations: The proposed well VK911-C (with a surface location in VK912) will not impact any sites favorable for development of sensitive sessile benthic communities.

Sincerely,
Talos Petroleum, LLC



LEGEND

- Proposed VK911-C Well (with a surface location in VK912) (1,283,767ft E / 10,562,479ft N)
- Existing wells
- Study area boundary
- Block boundaries
- AUV boundary
- Oil pipeline
- Gas pipeline
- Abandoned flowlines and umbilical lines
- -2575 Depth in feet below sea surface to seabed, contoured at 25ft intervals
- Sonar contacts

GEODETIC INFORMATION

Coordinate System: NAD 1927 UTM Zone 16N
Projection: Transverse Mercator
Datum: North American 1927
Units: Foot US

False Easting: 1,640,416.6667
False Northing: 0.0000
Central Meridian: -87.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000

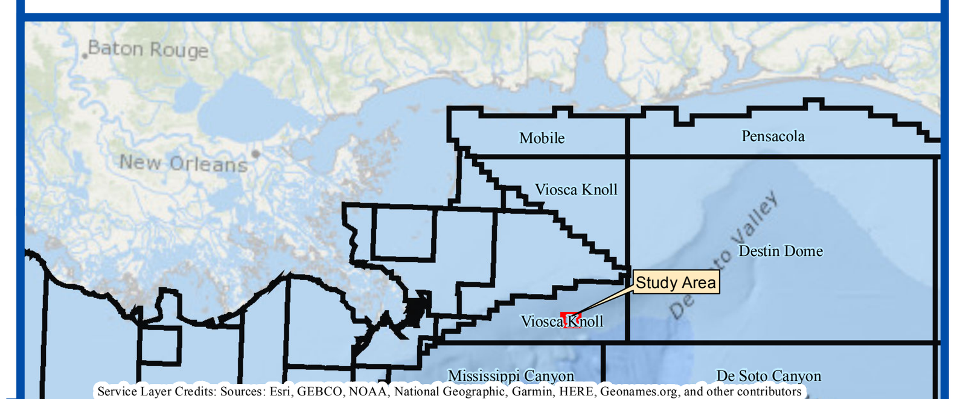


Chart scale 1" = 1,000'

0 625 1,250 2,500 3,750 Feet

0 190 380 760 1,140 Meters

Echo OFFSHORE LLC

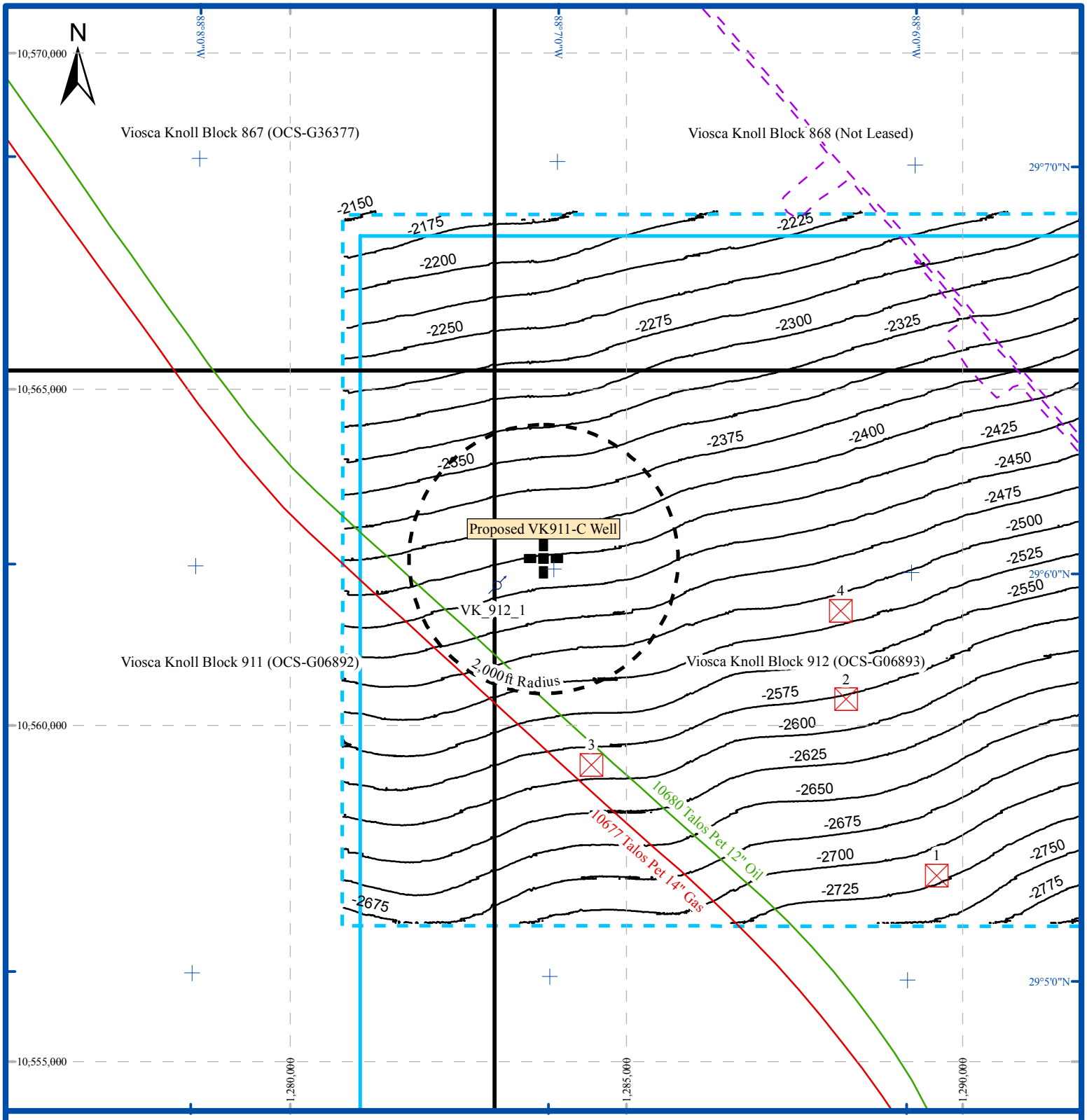
TALOS ENERGY LLC

3D GEOHAZARD ASSESSMENT
GULF OF MEXICO
VIOSCA KNOLL BLOCK
PROPOSED VK911-C WELL LOCATION
SURFACE LOCATION IN VK912

BIOLOGICAL, PHYSICAL AND SOCIO-ECONOMIC CHART

Prepared by: Ocean Geo Solutions Inc. 8399 Westview Drive, Houston, Texas, 77055. Suite 200 Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	November 26, 2019	Final	LF	KB	ARH
SURVEY DATE	N/A	REPORT REF	2019-204	REF NO	2019-204.01



Proposed VK911-C Well
(with a surface location in VK912)
(1,283,767ft E / 10,562,479ft N)

Existing well

Oil pipeline

Gas pipeline

Abandoned flowlines and umbilical lines

Study area boundary

Block boundaries

AUV boundary

-2425 Depth in feet below sea surface to seabed, contoured at 25ft intervals

Sonar contacts

Chart scale 1" = 2,000'

0 500 1,000 2,000 Feet

0 125 250 500 Meters

Biological, Physical & Soci-Economic Plat

APPENDIX C – ARCHAEOLOGICAL ASSESSMENT

Echo OFFSHORE LLC

36499 Perkins Road
Prairieville, Louisiana 70769
Telephone: 225.673.2163
www.echo-offshore.net

November 20, 2019 Job #19-034-52

Bureau of Ocean Energy Management (MS 5230)
Gulf of Mexico OCS Region
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

RE: Talos Petroleum, LLC
Proposed OCS-G 06892 Well 'C'
Block 911, Viosca Knoll Area
With Surface Location in Block 912, Viosca Knoll Area
Archaeological Assessment

Dear Staff:

Talos Petroleum, LLC (Talos) proposes to drill the OCS-G 06892 VK 911 Well 'C' from the following surface location in Block 912, Viosca Knoll Area:

Datum: NAD 27	Spheroid: Clarke 1866	Projection: UTM	Zone: 16	Central Meridian: 87° 00' West
Latitude: 29° 06' 01.499" N			Longitude: 88° 07' 01.601" W	
X: 1,283,767.00			Y: 10,562,479.00	
FWL: 727'			FNL: 2,801'	

This assessment addresses a 2,000' radius surrounding the proposed well location based on use of a dynamically positioned drill rig. Echo Offshore, LLC investigated the northwest portion of Block 912, Viosca Knoll, in October of 2019 on behalf of Talos. The resulting report is titled "Archaeological Investigation, Blocks 912, 911, 867, & 868, Viosca Knoll Area" and was prepared under Echo Job No. 19-033-42 and submitted under separate cover. Talos has contracted Echo Offshore, LLC to provide this ***archaeological analysis (NTL No. 2005-G07)*** of the proposed well location based on the analysis of the above referenced data set in accordance with the Bureau of Ocean Energy Management (BOEM) Gulf of Mexico OCS Region.

- ***Water depth*** is approximately 2,427 feet surrounding the proposed drill site. Water depths increase to the southeast across the proposed well site at rate of approximately 2.8°.

- ***Seafloor soils*** are reported to be clay (MMS 1983 Visual No. 3; MMS 1986 Visual No. 5).

  Infrastructure closest to the site is the 12" Talos pipeline (Segment 10680) located approximately 1,533 feet SW of the proposed well site. T&A Well 1 is located

approximately 793 feet to the SW.

- ***Magnetic data*** is not required in these water depths per NTL 2005-G07.

- ***Sonar data*** recorded a generally featureless seafloor with evidence of sporadic anchor scaring. A total of four (4) discrete sonar targets within the study area, none of which are located within 2,000 feet of the proposed well site. The closest sonar target to the proposed well site is Target No. 3, located approximately 3,145 feet SE of the proposed site. This indistinct feature measured 6 x 4 feet with approximately half a foot of relief. Target No. 3 is not considered archaeological in nature and does not pose a hazard to operations at this distance from the well site.

No evidence of intact shipwreck sites was observed within 2,000 feet of the proposed well site and none of the sonar target identified via the block investigation are considered high probability archaeological features.

Talos Petroleum, LLC and subcontractors will apply the safest and best available technologies during drilling operations. In compliance with 30 CFR 250.194(c), 30 CFR 250.1010(c), and NTL 2005-G07, if materials are observed during operations that could indicate the presence of a shipwreck, shipwreck site, or other potentially significant archaeological resource, operations will cease and the Regional Supervisor, Leasing and Environment with the BOEM/BSEE will be notified within 48 hours of discovery.

Sincerely,

Matthew Keith
Geoscience Manager/Marine Archaeologist

Echo OFFSHORE LLC

36499 Perkins Road
Prairieville, Louisiana 70769
Telephone: 225.673.2163
www.echo-offshore.net

November 20, 2019 Job #19-034-52

Bureau of Ocean Energy Management (MS 5230)
Gulf of Mexico OCS Region
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

RE: Talos Petroleum, LLC
Proposed OCS-G 06893 Well 'D'
Block 912, Viosca Knoll Area
Archaeological Assessment

Dear Staff:

Talos Petroleum, LLC (Talos) proposes to drill the OCS-G 06893 Well 'D' from the following surface location in Block 912, Viosca Knoll Area:

Datum: NAD 27	Spheroid: Clarke 1866	Projection: UTM	Zone: 16	Central Meridian: 87° 00' West
Latitude: 29° 05' 59.433" N			Longitude: 88° 06' 39.671" W	
X: 1,285,710.00			Y: 10,562,252.00	
FWL: 2,670'			FNL: 3,028'	

This assessment addresses a 2,000' radius surrounding the proposed well location based on use of a dynamically positioned drill rig. Echo Offshore, LLC investigated the northwest portion of Block 912, Viosca Knoll, in October of 2019 on behalf of Talos. The resulting report is titled "Archaeological Investigation, Blocks 912, 911, 867, & 868, Viosca Knoll Area" and was prepared under Echo Job No. 19-033-42 and submitted under separate cover. Talos has contracted Echo Offshore, LLC to provide this ***archaeological analysis (NTL No. 2005-G07)*** of the proposed well location based on the analysis of the above referenced data set in accordance with the Bureau of Ocean Energy Management (BOEM) Gulf of Mexico OCS Region.

- ***Water depth*** is approximately 2,458 feet surrounding the proposed drill site. Water depths increase to the southeast across the proposed well site at rate of approximately 3.2°.

- ***Seafloor soils*** are reported to be clay (MMS 1983 Visual No. 3; MMS 1986 Visual No. 5).

Infrastructure is not located within 2,000 feet of the proposed well site.

- ***Magnetic data*** is not required in these water depths per NTL 2005-G07.

- ***Sonar data*** recorded a generally featureless seafloor with evidence of sporadic anchor scaring. A total of four (4) discrete sonar targets within the study area, none of which are located within 2,000 feet of the proposed well site. The closest sonar target to the proposed well site is Target No. 4, located approximately 2,534 feet ESE of the proposed site. This indistinct feature measured 44 x 32 feet with no observable relief. Target No. 4 is not considered archaeological in nature and does not pose a hazard to operations at this distance from the well site.

No evidence of intact shipwreck sites was observed within 2,000 feet of the proposed well site and none of the sonar target identified via the block investigation are considered high probability archaeological features.

Talos Petroleum, LLC and subcontractors will apply the safest and best available technologies during drilling operations. In compliance with 30 CFR 250.194(c), 30 CFR 250.1010(c), and NTL 2005-G07, if materials are observed during operations that could indicate the presence of a shipwreck, shipwreck site, or other potentially significant archaeological resource, operations will cease and the Regional Supervisor, Leasing and Environment with the BOEM/BSEE will be notified within 48 hours of discovery.

Sincerely,

Matthew Keith
Geoscience Manager/Marine Archaeologist

APPENDIX A – PUBLIC SHALLOW HAZARDS STATEMENTS

Public Shallow Hazards Statement – Proposed VK912-E well Location
November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213-2394

Reference: Shallow Hazards Analysis
Viosca Knoll Block 912
(OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-E well location in Block 912, Viosca Knoll Area (OCS-G-06893). This letter addresses seafloor and shallow geologic conditions that may impact exploratory drilling operations within 2,000ft of the proposed well site. The depth limit of this site clearance assessment at 2.391 seconds two-way time (TWT) -6,597ft below sea surface (4,036ft below seafloor).

Seafloor Hazards. The proposed location is in an area of smooth and slightly undulated seafloor at the edge of a minor seafloor drainage pathways. This feature should not cause any problems.

There are no indications of seafloor hydrocarbon fluid seeps within 2,000ft of the proposed well location.

No major drilling hazards or problems are predicted at seafloor.

Two sonar targets occur within 2,000ft of the proposed well. Target #2 located 1,378ft to the southwest and Target #4 occurs 1,370ft to the northwest. Both are interpreted as modern anthropogenic debris associated with the developments in the area. **No sites of possible archaeological resources were interpreted within 2,000ft of the proposed well location.**

Sub-Seafloor Hazards. Identified amplitude anomalies indicative of shallow gas occur within the 2,000ft radius in Units B, Unit D, Unit E and at the level of Horizon H20. The vertical borehole will not penetrate any identified risk of gas anomalies. A vertical borehole will penetrate not penetrate any faults at the proposed well.

A **Slight Shallow Water Flow Risk** is interpreted at sand-rich intervals in Unit D and Unit E.

Proposed VK912-E Well Location (Surface)							
Location Coordinates							
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**		
Latitude	29°	05’	48.629”	North	Easting	1,289,440	US ft E
Longitude	88°	05’	57.499”	West	Northing	10,561,126	US ft N
FWL Viosca Knoll 912			6,400ft		US ft	Inline	1913
FNL Viosca Knoll 912			4,154ft		US ft	Crossline	6287
Water Depth: -2,561ft			Slope: 2.6° SE				
Nearest Shoreline			47.37 Nautical Miles @ 276°				
Port of Operation			Fourchon 110.57 Nautical Miles @ 274°				
Nearest Manned Platform			A-Ram Powel in VK956			2.522 Nautical Miles @ 170.4°	

Conclusions and Recommendations. No problems are anticipated at the seafloor.

No risk of gas is assigned at the proposed VK912-E well.

A vertical borehole will not penetrate any faults at the proposed well.

A **Slight Shallow Water Flow Risk** is interpreted at sand-rich intervals in Unit D and Unit E.

Sincerely,
Talos Petroleum, LLC

APPENDIX B – SENSITIVE SESSILE BENTHIC COMMUNITY STATEMENT

Sensitive Sessile Benthic Communities Statement – Proposed VK912-E Well Location

Talos Petroleum, LLC

November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213

Reference: Sensitive Sessile Benthic Community Summary
Proposed VK912-E Well Location in Green Canyon VK912 (OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-E Well Location in Block 912, Viosca Knoll (OCS-G-06893). This letter addresses location proximity to potential sensitive sessile benthic community sites. This well will be drilled from a dynamically positioned drilling module; therefore, an anchoring assessment is not required.

This sensitive sessile benthic community summary letter is issued as a supplement to Echo Report No. 19-034-52/2019-161 entitled: "3D Geohazard Assessment, Viosca Knoll VK912" dated September 2019. A Biological, Physical and Socio-economic Map is included illustrating the areas of potential seafloor impact.

Potential Sensitive Sessile Benthic Communities

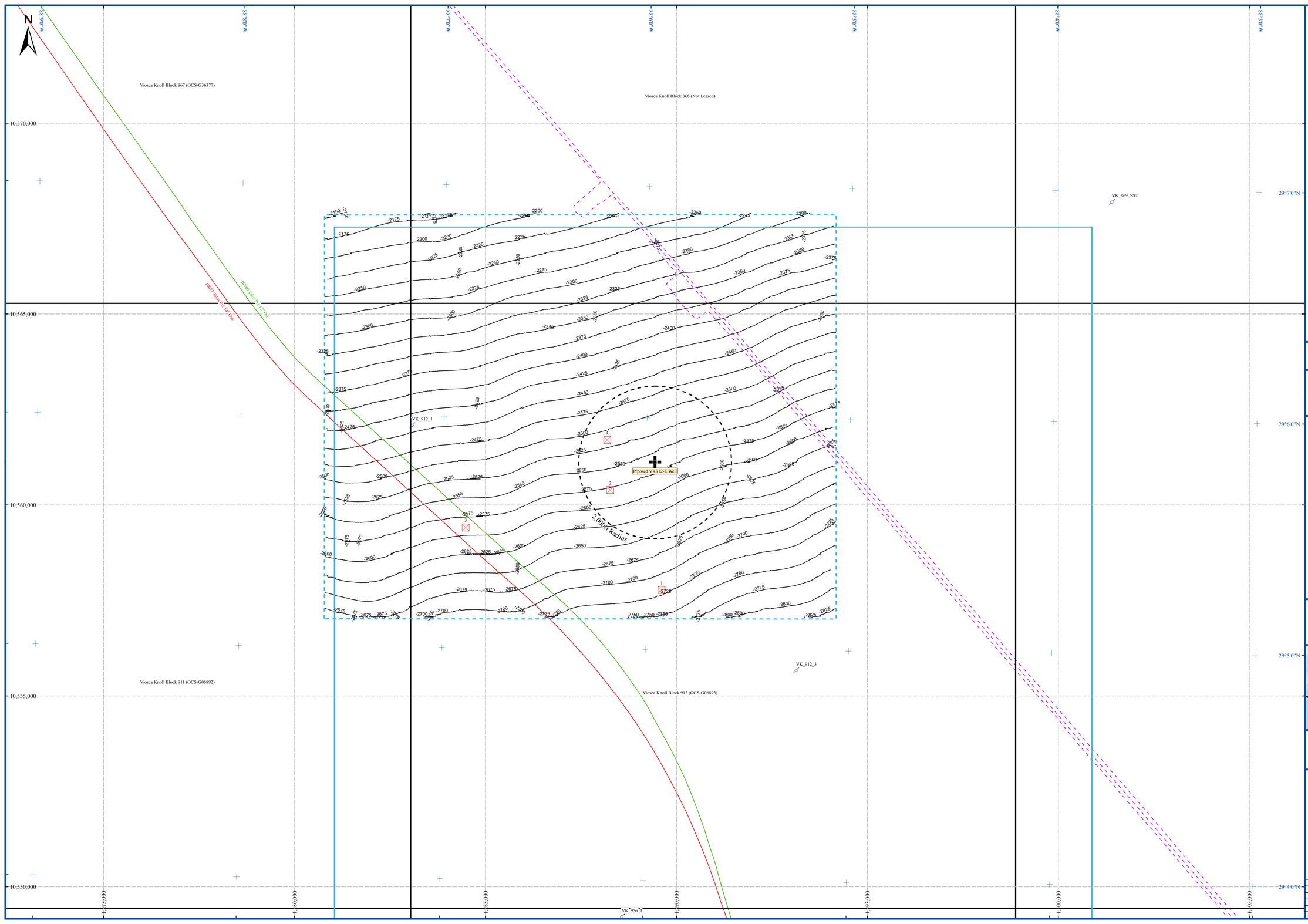
Features or areas that could support high-density sensitive sessile benthic communities are ***not*** located within 2,000 feet of any proposed mud and cuttings discharge location. No sites with the potential to host benthic communities were identified in the study area.

Proposed VK912-E Well Location (Surface)							
Location Coordinates							
NAD 27 Datum - Clarke 1866 Ellipsoid					**UTM Zone 16 - CM 93° West**		
Latitude	29°	05’	48.629”	North	Easting	1,289,440	US ft E
Longitude	88°	05’	57.499”	West	Northing	10,561,126	US ft N
FWL Viosca Knoll 912			6,400ft		US ft	Inline	1913
FNL Viosca Knoll 912			4,154ft		US ft	Crossline	6287
Water Depth: -2,561ft			Slope: 2.6° SE				
Nearest Shoreline			47.37 Nautical Miles @ 276°				
Port of Operation			Fourchon 110.57 Nautical Miles @ 274°				
Nearest Manned Platform			A-Ram Powel in VK956			2.522 Nautical Miles @ 170.4°	

There are no areas with the potential to host a Sensitive Sessile Benthic Community within 2,000ft of the proposed location.

Conclusions and Recommendations: The proposed VK912-E Well Location in VK912 will not impact any sites favorable for development of sensitive sessile benthic communities.

Sincerely,
Talos Petroleum, LLC



LEGEND

- Proposed VK912-E Well Location (1,289,440ft E / 10,561,126ft N)
- Existing wells
- Study area boundary
- Block boundaries
- AUV boundary
- Oil pipeline
- Gas pipeline
- Abandoned flowlines and umbilical lines
- -2575 Depth in feet below sea surface to seabed, contoured at 25ft intervals
- Sonar contacts

GEODETIC INFORMATION

Coordinate System: NAD 1927 UTM Zone 16N
Projection: Transverse Mercator
Datum: North American 1927
Units: Foot US

False Easting: 1,640,416.6667
False Northing: 0.0000
Central Meridian: -87.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000

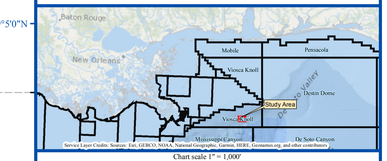


Chart scale 1" = 1,000'

0	625	1,250	2,500	3,750 Feet
0	190	380	760	1,140 Meters

Echo OFFSHORE LLC

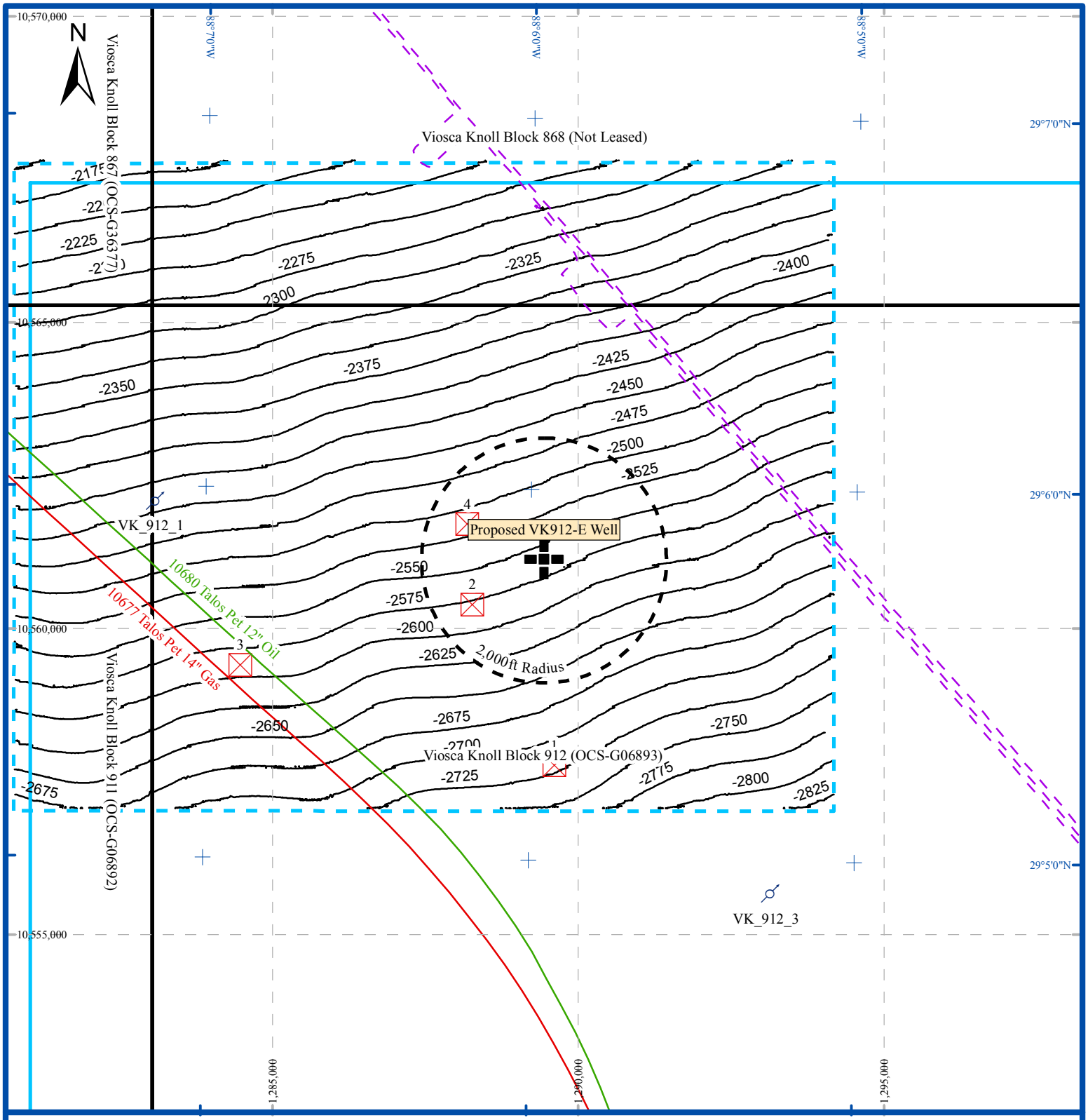
TALOS ENERGY LLC

3D GEOHAZARD ASSESSMENT
GULF OF MEXICO
VIOSCA KNOLL BLOCK
PROPOSED VK912-E WELL LOCATION

BIOLOGICAL, PHYSICAL AND SOCIO-ECONOMIC CHART

Prepared by: Ocean Geo Solutions Inc. 8399 Westview Drive, Houston, Texas, 77055. Suite 200 Telephone: 713 681 4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	November 26, 2019	Final	LF	KB	ARH
SURVEY DATE	N/A	REPORT REF	2019-206	REF NO	2019-206.01



Proposed VK912-E Well Location (1,289,440ft E / 10,561,126ft N)

Existing well

Oil pipeline

Gas pipeline

Abandoned flowlines and umbilical lines

Study area boundary

Block boundaries

AUV boundary

-2575 Depth in feet below sea surface to seabed, contoured at 25ft intervals

Sonar contacts

Chart scale 1" = 2,000'

0 500 1,000 2,000 Feet

0 125 250 500 Meters

Biological, Physical & Soci-Economic Plat

APPENDIX C – ARCHAEOLOGICAL ASSESSMENT

Echo OFFSHORE LLC

36499 Perkins Road
Prairieville, Louisiana 70769
Telephone: 225.673.2163
www.echo-offshore.net

November 20, 2019 Job #19-034-52

Bureau of Ocean Energy Management (MS 5230)
Gulf of Mexico OCS Region
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

RE: Talos Petroleum, LLC
Proposed OCS-G 06893 Well 'E'
Block 912, Viosca Knoll Area
Archaeological Assessment

Dear Staff:

Talos Petroleum, LLC (Talos) proposes to drill the OCS-G 06893 Well 'E' from the following surface location in Block 912, Viosca Knoll Area:

Datum: NAD 27	Spheroid: Clarke 1866	Projection: UTM	Zone: 16	Central Meridian: 87° 00' West
Latitude: 29° 05' 48.629" N			Longitude: 88° 05' 57.499" W	
X: 1,289,440.00			Y: 10,561,126.00	
FWL: 6,400'			FNL: 4,154'	

This assessment addresses a 2,000' radius surrounding the proposed well location based on use of a dynamically positioned drill rig. Echo Offshore, LLC investigated the northwest portion of Block 912, Viosca Knoll, in October of 2019 on behalf of Talos. The resulting report is titled "Archaeological Investigation, Blocks 912, 911, 867, & 868, Viosca Knoll Area" and was prepared under Echo Job No. 19-033-42 and submitted under separate cover. Talos has contracted Echo Offshore, LLC to provide this ***archaeological analysis (NTL No. 2005-G07)*** of the proposed well location based on the analysis of the above referenced data set in accordance with the Bureau of Ocean Energy Management (BOEM) Gulf of Mexico OCS Region.

- ***Water depth*** is approximately 2,561 feet surrounding the proposed drill site. Water depths increase to the southeast across the proposed well site at rate of approximately 2.6°.

- ***Seafloor soils*** are reported to be clay (MMS 1983 Visual No. 3; MMS 1986 Visual No. 5).

Infrastructure is not located within 2,000 feet of the proposed well site.

- ***Magnetic data*** is not required in these water depths per NTL 2005-G07.

- ***Sonar data*** recorded a generally featureless seafloor with evidence of sporadic anchor scaring. A total of four (4) discrete sonar targets within the study area, two (2) of which are located within 2,000 feet of the proposed well site. Target No. 4, located approximately 1,370 feet NW of the proposed site. This indistinct feature measured 44 x 32 feet with no observable relief. Target No. 4 is not considered archaeological in nature and does not pose a hazard to operations at this distance from the well site. Target No. 2 is located approximately 1,378 feet SW of the proposed well site. This indistinct feature measured 25 x 9 feet with approximately a half foot of measurable relief. Target No. 2 is not considered archaeological in nature and does not pose a hazard to operations at this distance from the well site.

No evidence of intact shipwreck sites was observed within 2,000 feet of the proposed well site and none of the sonar target identified via the block investigation are considered high probability archaeological features.

Talos Petroleum, LLC and subcontractors will apply the safest and best available technologies during drilling operations. In compliance with 30 CFR 250.194(c), 30 CFR 250.1010(c), and NTL 2005-G07, if materials are observed during operations that could indicate the presence of a shipwreck, shipwreck site, or other potentially significant archaeological resource, operations will cease and the Regional Supervisor, Leasing and Environment with the BOEM/BSEE will be notified within 48 hours of discovery.

Sincerely,

Matthew Keith
Geoscience Manager/Marine Archaeologist

APPENDIX A – PUBLIC SHALLOW HAZARDS STATEMENTS

Public Shallow Hazards Statement – Proposed VK912-F well Location

November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213-2394

Reference: Shallow Hazards Analysis
Viosca Knoll Block 912
(OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-A well location in Block 912, Viosca Knoll Area (OCS-G-06893). This letter addresses seafloor and shallow geologic conditions that may impact exploratory drilling operations within 2,000ft of the proposed well site. The depth limit of this site clearance assessment is 2.358 seconds two-way time (TWT), -6,511ft below sea surface (4,156ft below seafloor).

Seafloor Hazards. The proposed location is in an area of smooth seafloor with no indications of seafloor hydrocarbon fluid seeps or archaeological resources within 2,000ft of the proposed well location.

Sub-Seafloor Hazards. Identified amplitude anomalies indicative of shallow gas occur within the 2,000ft radius in Units B, at Horizon H20, and Unit D. The vertical borehole will not penetrate any identified risk of gas anomalies. The well-path will not traverse any faults at the proposed well.

A **Slight Shallow Water Flow Risk** is interpreted at sand-rich intervals in Unit D, and Unit E and the level of a sand interbed at Horizon H20.

Proposed VK912-F Well Location (Surface)							
Location Coordinates							
NAD 27 Datum - Clarke 1866 Ellipsoid					UTM Zone 16 - CM 93° West		
Latitude	29°	06’	22.190”	North	Easting	1,286,790	US ft E
Longitude	88°	06’	27.737	West	Northing	10,564,540	US ft N
FWL Viosca Knoll 912			3,750ft		US ft	Inline	1966
FNL Viosca Knoll 912			740ft		US ft	Crossline	6292
Water Depth: -2,355ft			Slope: 2.8° SE				
Nearest Shoreline			47.09 Nautical Miles @ 275°				
Port of Operation			Fourchon 109.72 Nautical Miles @ 271°				
Nearest Manned Platform			A-Ram Powel in VK956			3.24 Nautical Miles @ 163.97°	

Conclusions and Recommendations. No drilling hazards or problems are anticipated at the seafloor.

No risk of gas is assigned at the proposed well. The well-path will not traverse any faults.

No sonar contacts were identified within the 2,000ft radius. The nearest sonar target (Target #4) is located 3,155ft to the southeast. All targets are interpreted as modern anthropogenic debris. **No sites of possible archaeological resources were interpreted within 2,000ft of the proposed well location**

A **Slight Shallow Water Flow Risk** is interpreted at sand-rich intervals in Unit D and Unit E and at Horizon H20.

Sincerely,
Talos Petroleum, LLC

APPENDIX B – SENSITIVE SESSILE BENTHIC COMMUNITY STATEMENT

Sensitive Sessile Benthic Communities Statement – Proposed VK912-F Well Location

Talos Petroleum, LLC

November 26, 2019

US Department of the Interior
Bureau of Ocean Energy Management
1201 Elmwood Park Blvd.
New Orleans, LA 70213

Reference: Sensitive Sessile Benthic Community Summary
Proposed VK912-F Well Location in Green Canyon VK912 (OCS-G-06893)

Ladies/Gentlemen:

Talos Petroleum, LLC contracted Echo Offshore, LLC to prepare a Well Clearance Letter for the Proposed VK912-F Well Location in Block 912, Viosca Knoll (OCS-G-06893). This letter addresses location proximity to potential sensitive sessile benthic community sites. This well will be drilled from a dynamically positioned drilling module; therefore, an anchoring assessment is not required.

This sensitive sessile benthic community summary letter is issued as a supplement to Echo Report No. 19-034-52/2019-161 entitled: "3D Geohazard Assessment, Viosca Knoll VK912" dated September 2019. A Biological, Physical and Socio-economic Map is included illustrating the areas of potential seafloor impact.

Potential Sensitive Sessile Benthic Communities

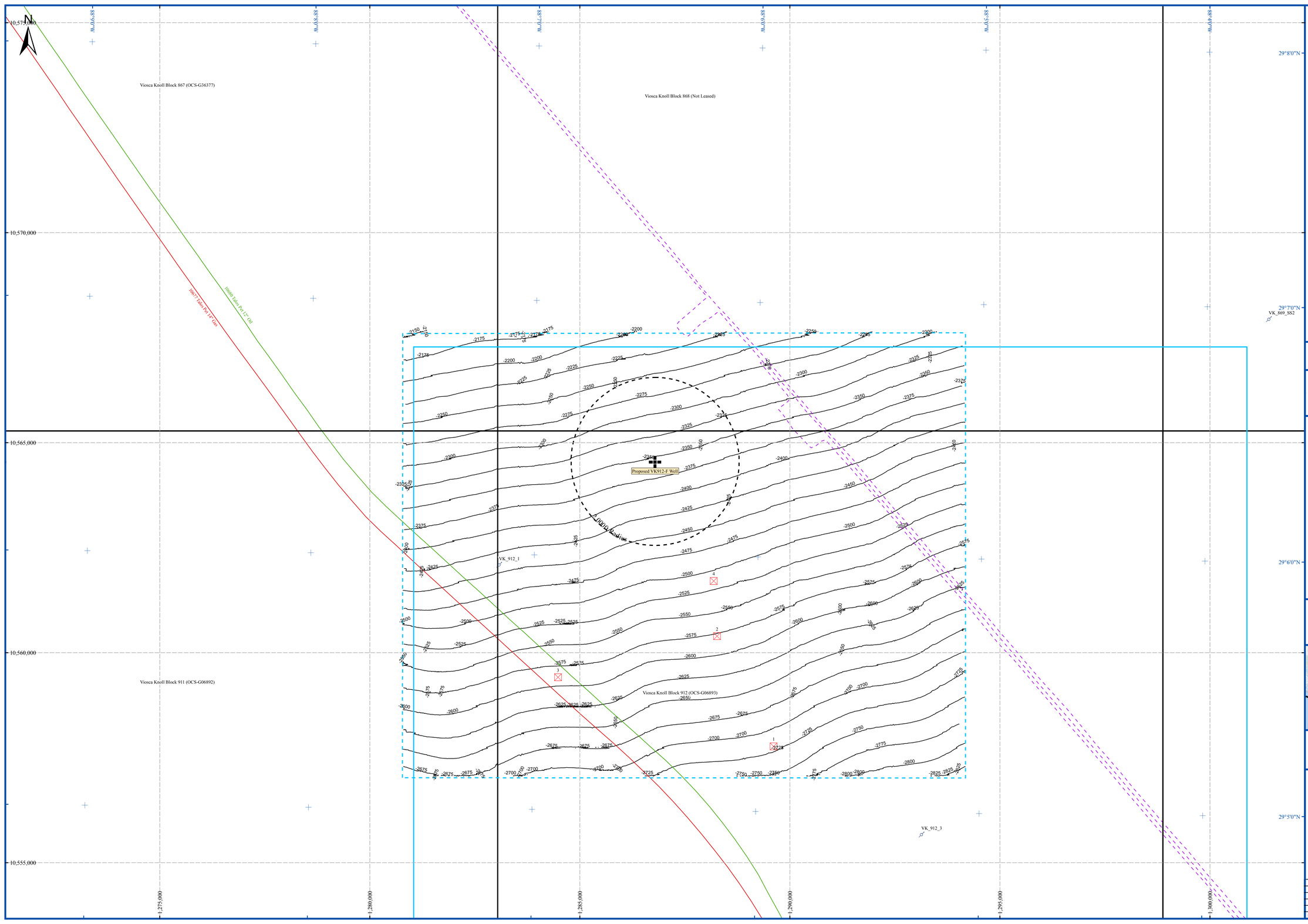
Features or areas that could support high-density sensitive sessile benthic communities are ***not*** located within 2,000 feet of any proposed mud and cuttings discharge location. No sites with the potential to host benthic communities were identified in the study area.

Proposed VK912-F Well Location (Surface)							
Location Coordinates							
NAD 27 Datum - Clarke 1866 Ellipsoid					UTM Zone 16 - CM 93° West		
Latitude	29°	06’	22.190”	North	Easting	1,286,790	US ft E
Longitude	88°	06’	27.737	West	Northing	10,564,540	US ft N
FWL Viosca Knoll 912			3,750ft		US ft	Inline	1966
FNL Viosca Knoll 912			740ft		US ft	Crossline	6292
Water Depth: -2,355ft			Slope: 2.8° SE				
Nearest Shoreline			47.09 Nautical Miles @ 275°				
Port of Operation			Fourchon 109.72 Nautical Miles @ 271°				
Nearest Manned Platform			A-Ram Powel in VK956			3.24 Nautical Miles @ 163.97°	

There are no areas with the potential to host a Sensitive Sessile Benthic Community within 2,000ft of the proposed location.

Conclusions and Recommendations: The proposed VK912-F Well Location in VK912 will not impact any sites favorable for development of sensitive sessile benthic communities.

Sincerely,
Talos Petroleum, LLC



LEGEND

- Proposed VK912-F Well Location (1,286,790ft E / 10,564,540ft N)
- Existing wells
- Study area boundary
- Block boundaries
- AUV boundary
- Oil pipeline
- Gas pipeline
- Abandoned flowlines and umbilical lines
- -2575 Depth in feet below sea surface to seabed, contoured at 25ft intervals
- Sonar contacts

GEODETIC INFORMATION

Coordinate System: NAD 1927 UTM Zone 16N
Projection: Transverse Mercator
Datum: North American 1927
Units: Foot US

False Easting: 1,640,416.6667
False Northing: 0.0000
Central Meridian: -87.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000

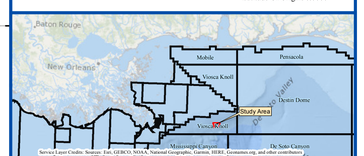


Chart scale 1" = 1,000'

0	625	1,250	2,500	3,750	Feet
0	190	380	760	1,140	Meters

Echo OFFSHORE LLC

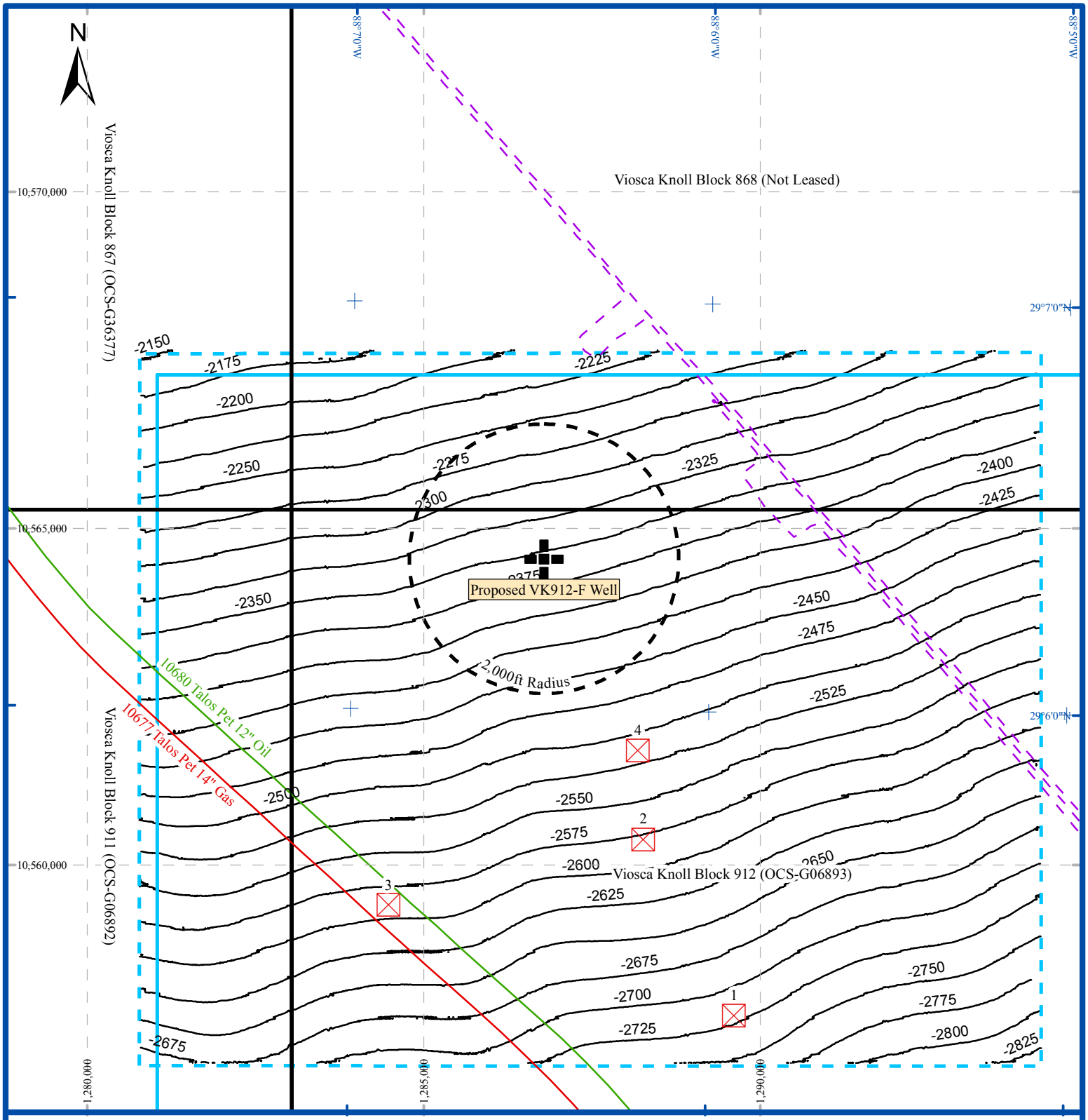
TALOS ENERGY LLC

3D GEOHAZARD ASSESSMENT
GULF OF MEXICO
VIOSCA KNOLL BLOCK
PROPOSED VK912-F WELL LOCATION

BIOLOGICAL, PHYSICAL AND SOCIO-ECONOMIC CHART

Prepared by: Ocean Geo Solutions Inc. 8399 Westview Drive, Houston, Texas, 77055. Suite 200 Telephone: 713.481.4630

REV	DATE	REMARKS	AUTHOR	DRAWN	CHECKED
0	November 26, 2019	Final	LF	KB	ARH
SURVEY DATE	N/A	REPORT REF	2019-207	REF NO	2019-207.01



Proposed VK912-F Well Location (1,286,790ft E / 10,564,540ft N)

Existing well

Oil pipeline

Gas pipeline

Abandoned flowlines and umbilical lines

Study area boundary

Block boundaries

AUV boundary

-2350 Depth in feet below sea surface to seabed, contoured at 25ft intervals

Sonar contacts

Chart scale 1" = 2,000'

0 500 1,000 2,000 Feet

0 125 250 500 Meters

Biological, Physical & Soci-Economic Plat

APPENDIX C – ARCHAEOLOGICAL ASSESSMENT

Echo OFFSHORE LLC

36499 Perkins Road
Prairieville, Louisiana 70769
Telephone: 225.673.2163
www.echo-offshore.net

November 20, 2019 Job #19-034-52

Bureau of Ocean Energy Management (MS 5230)
Gulf of Mexico OCS Region
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

RE: Talos Petroleum, LLC
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Block 912, Viosca Knoll Area
Archaeological Assessment

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Latitude: 29° 06' 22.190" N			Longitude: 88° 06' 27.737" W	
X: 1,286,790.00			Y: 10,564,540.00	
FWL: 3,750'			FNL: 740'	

This assessment addresses a 2,000' radius surrounding the proposed well location based on use of a dynamically positioned drill rig. Echo Offshore, LLC investigated the northwest portion of Block 912, Viosca Knoll, in October of 2019 on behalf of Talos. The resulting report is titled "Archaeological Investigation, Blocks 912, 911, 867, & 868, Viosca Knoll Area" and was prepared under Echo Job No. 19-033-42 and submitted under separate cover. Talos has contracted Echo Offshore, LLC to provide this ***archaeological analysis (NTL No. 2005-G07)*** of the proposed well location based on the analysis of the above referenced data set in accordance with the Bureau of Ocean Energy Management (BOEM) Gulf of Mexico OCS Region.

- ***Water depth*** is approximately 2,355 feet surrounding the proposed drill site. Water depths increase to the southeast across the proposed well site at rate of approximately 2.7°.

- ***Seafloor soils*** are reported to be clay (MMS 1983 Visual No. 3; MMS 1986 Visual No. 5).

  Infrastructure is not located within 2,000 feet of the proposed well site.

- ***Magnetic data*** is not required in these water depths per NTL 2005-G07.

- ***Sonar data*** recorded a generally featureless seafloor with evidence of sporadic anchor scaring. A total of four (4) discrete sonar targets within the study area, none of which are located within 2,000 feet of the proposed well site. Target No. 4, located approximately 3,155 feet SE of the proposed site. This indistinct feature measured 44 x 32 feet with no observable relief. Target No. 4 is not considered archaeological in nature and does not pose a hazard to operations at this distance from the well site.

No evidence of intact shipwreck sites was observed within 2,000 feet of the proposed well site and none of the sonar target identified via the block investigation are considered high probability archaeological features.

Talos Petroleum, LLC and subcontractors will apply the safest and best available technologies during drilling operations. In compliance with 30 CFR 250.194(c), 30 CFR 250.1010(c), and NTL 2005-G07, if materials are observed during operations that could indicate the presence of a shipwreck, shipwreck site, or other potentially significant archaeological resource, operations will cease and the Regional Supervisor, Leasing and Environment with the BOEM/BSEE will be notified within 48 hours of discovery.

Sincerely,

Matthew Keith
Geoscience Manager/Marine Archaeologist

SECTION G
WASTES AND DISCHARGES INFORMATION

(a) Projected Ocean Discharges
In accordance with 30 CFR 250.217 and 30 CFR 250.248, information must be provided on all projected solid and liquid wastes likely to be generated by an operator's proposed activities including operational wastes permitted by the appropriate NPDES permit and any other identified wastes. Attached to this section is Table 1 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 Generated Wastes
In accordance with 30 CFR 250.217 and 30 CFR 250.248, information must be provided on all projected solid and liquid wastes likely to be generated by an operator's proposed activities including operational wastes permitted by the appropriate NPDES permit and any other identified wastes. Attached to this section is Table 2 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
According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(d) NPDES Permits
The subject rig and/or facility will be covered under Talos Petroleum's General Permit upon commencement of the activities proposed herein.

(e) Cooling Water Intake
According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

TABLE 1. WASTES YOU WILL GENERATE, TREAT AND DOWNHOLE DISPOSE OR DISCHARGE TO THE GOM - VK 912 Well A

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

Projected generated waste			Projected ocean discharges		Projected Downhole Disposal
Type of Waste	**Composition**	**Projected Amount**	**Discharge rate**	**Discharge Method**	**Answer yes or no**
Will drilling occur ? If yes, you should list muds and cuttings		**Yes**			
EXAMPLE: Cuttings wetted with synthetic based fluid	*Cuttings generated while using synthetic based drilling fluid.*	*X bbl/well*	*X bbl/day/well*	*discharge overboard*	*No*
Water-based drilling fluid during riserless drilling	**Water based drilling fluids**	**41,846 bbls/well**	**20923 bbls/day/well**	**discharge at mudline**	**No**
Cuttings wetted with water-based fluid during riserless drilling	**Cuttings generated while using water based drilling fluids**	**3138 bbls/well**	**1569 bbls/day/well**	**discharge at mudline**	**No**
Cuttings wetted with synthetic-based fluid	**Cuttings generated while using synthetic based drilling fluid**	**2768 bbls/well**	**264 bbls/day/well**	**dried & discharge overboard**	**No**
Will humans be there? If yes, expect conventional waste					
EXAMPLE: Sanitary waste water	*Sanitary waste from living quarters*	*X bbl/well*	*X bbl/hr/well*	*chlorinate and discharge overboard*	*No*
Domestic waste (treated)	**grey water**	**6798 bbls/well**	**4.3 bbls/hr/well**	**USCG approved MSD with chlorination and discharged**	**No**
Sanitary waste (treated)	**treated sanitary waste**	**9042 bbls/well**	**5.7 bbls/hr/well**	**USCG approved MSD with chlorination and discharged**	**No**
Is there a deck? If yes, there will be Deck Drainage					
Deck Drainage	**washwater and deck drainage**	**2640 bbls/well**	**1.67 bbls/hr/well**	**discharge overboard**	**No**
Will you conduct well treatment, completion, or workover?					
Well treatment fluids	**Frac Fluids**	**300 bbls/well**	**300 bbls/day for 1 day/well**	**discharge overboard**	**NA**
Well completion fluids	**Calcium Bromide**	**500 bbls/well**	**250 bbls/day for 2 days/well**	**discharge overboard**	**NA**
Workover fluids	**NA**	**NA**	**NA**	**NA**	**NA**
Miscellaneous discharges. If yes, only fill in those associated with your activity.					
Desalinization unit discharge	**Seawater**	**787,116 bbls/well**	**11,926 bpd**	**discharge overboard**	**NA**
Blowout prevent fluid	**Water-based hydraulic control fluid**	**36.3 bbls/well**	**0.55 bbls/day**	**discharged from vent ports on BOP stack**	**NA**
Ballast water (uncontaminated)	**Seawater**	**26,400 bbls/well**	**400 bbls/day**	**per MARPOL regulations**	**NA**
Rig Wash Water	**Fresh Water & Soap**	**3300 bbls/well**	**50 bbls/day**	**discharge overboard**	**NA**
Bilge water (uncontaminated)	**Freshwater or Seawater**	**2772 bbls/well**	**42 bbls/day**	**discharge overboard**	**NA**
Excess cement at seafloor	**Water, CaCl Class H cement & rheological modifiers**	**800 bbls/well**	**800 bbls/day for 1 day/well**	**discharge overboard**	**NA**
Cement Spacer	**Water base fluid, viscosifier, barite & gel**	**100 bbls/well**	**100 bbls/day for 1 day/well**	**discharge overboard**	**NA**
Fire water	**Seawater**	**NA**	**NA**	**discharge overboard**	**NA**
Cooling water (uncontaminated)	**Seawater**	**60,892,722 bbls/well**	**922,617 bpd**	**discharge overboard**	**NA**
Will you produce hydrocarbons? If yes fill in for produced water.					
Produced water (During Well Test)	**NA**	**NA**	**NA**	**NA**	**NA**
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 2. WASTES YOU WILL TRANSPORT AND /OR DISPOSE OF ONSHORE, VK 912 Well A

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.						
EXAMPLE: Synthetic-based drilling fluid or mud	*internal olefin, ester*		*Below deck storage tanks on offshore support vessels*	*Newport Environmental Services Inc., Ingleside, TX*	*X bbl/well*	*Recycled*
Oil-based drilling fluid or mud	N/A		N/A	N/A	N/A	N/A
Synthetic-based drilling fluid or mud	Used SBM consisting of base oil (isomerized alpha olefin), barite, CaCl, Acrylate Copolymer, Limestone, Lime, and invert emulsifiers and wetting agent, assuming surface volume only		Hull Storage tanks or DOT tanks on supply vessels	Mud Vendor's Facility in Fourchon	7500 bbls/well	Returned to Mud Supplier Facility in Fourchon and reconditioned for future use
Cuttings wetted with Water-based fluid	N/A		N/A	N/A	N/A	N/A
Cuttings wetted with Synthetic-based fluid	Formation cuttings, SBM Base oil (isomerized alpha olefin), barite, CaCl, Acrylate Copolymer, LCM, Limestone, Lime, and invert emulsifiers and wetting agent contaminated with formation oil		Cuttings boxes on supply vessels	ECOSERV/Fourchon	500 bbls/well	Recycle / Injection well
Cuttings wetted with oil-based fluids	N/A		N/A	N/A	N/A	N/A
Displacement Pills & Interface	Base oil, barite, water wetting agents, surfactants & viscosifyers		Hull Storage tanks or DOT tanks on supply vessels	ECOSERV/Fourchon	1500 bbls/well	Recycle / Injection well
Excess Water Base Mud	Freshwater, CaCl, NaCl, Barite, Bentonite, Lime, XCD Polymer		Hull Storage tanks or DOT tanks on supply vessels	Mud Vendor's Facility in Fourchon	5000 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.						
EXAMPLE: trash and debris (recylables)	*Plastic, paper, aluminum*		*barged in a storage bin*	*ARC, New Iberia, LA*	*X lb/well*	*Recycled*
Trash and debris	Domestic trash, plastic, paper, aluminum		40 cu ft super sacks transported by boat	Progresso Galliano Waste	7543 lbs/well	Landfill or recycled and disposed per classification
Contaminated pills & interface	Base oil, barite, water wetting agents, surfactants & viscosifyers, contaminated mud and brine with formation oil		Transport to shore by boat in drums or DOT tanks for disposal at an approved disposal facility	ECOSERV/Fourchon	800 bbls/well	Recycle / Injection well
Used oil	Oil		550 gal tote tank transported by boat	Martin Energy/Fourchon	11 bbls/well	Recycle
Completion fluids & associated waste	Brine, spent acid, prop sand, perforation debris, casing scale contaminated with formation oil		Transport to shore by boat in drums or DOT tanks for disposal at an approved disposal facility	ECOSERV/Fourchon	500 bbls/well	Recycle / Injection well
Wash water from mud tanks	Water, surfactants & solids from mud system if zero discharge		Hull Storage tanks or DOT tanks on supply vessels	ECOSERV/Fourchon	6000 bbls/well	Recycle / Injection well
Chemical Product Wastes	Well Treatment Fluids		Drums or tote tanks on supply vessels	EDI Environmental Services/ Lafayette LA	3 bbls/well	Recycle
Chemical Product Wastes	Paint & thinner waste		Drums or tote tanks on supply vessels	EDI Environmental Services/ Lafayette LA	7 bbls/well	Recycle
Drums of oily rags & filters	Oily rags and filters impregnated with oil & grease		DOT drums transported by boat	Martin Energy/Fourchon	1.5 drums/well	Recycle

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

SECTION H
AIR EMISSIONS INFORMATION

(a) Emissions Worksheets and Screening Questions

(1) Screening Questions

Screen Procedures for DOCD's	Yes	No
Is any calculated Complex Total (CT) Emission amount (tons) associated with your proposed development 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
Does or will the facility complex associated with your proposed development and production activities process production from eight or more wells?		X
Do you expect to encounter H_2S at concentrations greater than 20 parts per million (ppm)?		X
Do you propose to flare or vent natural gas in excess or criteria set for the under 250.1105(a)(2) and (3)?		X
Do you propose to burn produced hydrocarbon liquids?		X
Are your proposed development and production activities located within 25 miles (40 kilometers) from shore?		X
Are your proposed development and production activities located within 124 miles (200 kilometers) of the Breton Wilderness Area?	X	

(2) Emissions Worksheets

Enclosed as an attachment to this section are a set of emissions worksheets showing the emissions calculations for the Plan Emissions.

Talos proposes to use the drillship (or similar) to the Discoverer Inspiration. Included as an attachment to this appendix are the actual specifications to the Discoverer Inspiration, in which the actual fuel usage for this MODU was used to calculate the enclosed air emissions.

This information was calculated by:

Erin Harold
(713) 335-6952
Erin.harold@talosenergy.com

DOCD AIR QUALITY SCREENING CHECKLIST

OMB Control No. 1010-0151
OMB Approval Expires: 06/30/2021

COMPANY	Talos Petroleum LLC
AREA	Viosca Knoll
BLOCK	911/912
LEASE	G06892/06893
PLATFORM	Viosca Knoll Block 956, Platform A
WELL	Wells A-F
COMPANY CONTACT	Erin Harold
TELEPHONE NO.	713-335-6952
REMARKS	Drill, complete, produce Wells A-F & install lease term pipelines

LEASE TERM PIPELINE CONSTRUCTION INFORMATION:		
YEAR	NUMBER OF PIPELINES	TOTAL NUMBER OF CONSTRUCTION DAYS
2020	6	Avg. 30 days per line
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		
2030		

AIR EMISSIONS CUMPUTATION FACTORS

Fuel Usage Conversion Factors	Natural Gas Turbines		Natural Gas Engines		Diesel Recip. Engine		REF.	DATE
	SCF/hp-hr	9.524	SCF/hp-hr	7.143	GAL/hp-hr	0.0483	AP42 3.2-1	4/76 & 8/84

Equipment/Emission Factors	units	PM	SOx	NOx	VOC	CO	REF.	DATE
NG Turbines	gms/hp-hr		0.00247	1.3	0.01	0.83	AP42 3.2-1& 3.1-1	10/96
NG 2-cycle lean	gms/hp-hr		0.00185	10.9	0.43	1.5	AP42 3.2-1	10/96
NG 4-cycle lean	gms/hp-hr		0.00185	11.8	0.72	1.6	AP42 3.2-1	10/96
NG 4-cycle rich	gms/hp-hr		0.00185	10	0.14	8.6	AP42 3.2-1	10/96
Diesel Recip. < 600 hp.	gms/hp-hr	1	0.1835	14	1.12	3.03	AP42 3.3-1	10/96
Diesel Recip. > 600 hp.	gms/hp-hr	0.32	0.1835	11	0.33	2.4	AP42 3.4-1	10/96
Diesel Boiler	lbs/bbl	0.084	0.3025	0.84	0.008	0.21	AP42 1.3-12,14	9/98
NG Heaters/Boilers/Burners	lbs/mmscf	7.6	0.593	100	5.5	84	P42 1.4-1, 14-2, & 14	7/98
NG Flares	lbs/mmscf		0.593	71.4	60.3	388.5	AP42 11.5-1	9/91
Liquid Flaring	lbs/bbl	0.42	6.83	2	0.01	0.21	AP42 1.3-1 & 1.3-3	9/98
Tank Vapors	lbs/bbl				0.03		E&P Forum	1/93
Fugitives	lbs/hr/comp.				0.0005		API Study	12/93
Glycol Dehydrator Vent	lbs/mmscf				6.6		La. DEQ	1991
Gas Venting	lbs/scf				0.0034			

Sulphur Content Source	Value	Units
Fuel Gas	3.33	ppm
Diesel Fuel	0.05	% weight
Produced Gas(Flares)	3.33	ppm
Produced Oil (Liquid Flaring)	1	% weight

AIR EMISSIONS CALCULATIONS - FIRST YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
Talos Petroleum LLC	Viosca Knoll	911/912	G06892/06893	noll Block 956, F	Wells A-F		Erin Harold	713-335-6952	#REF!

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	34182	1650.9906	39623.77	24	66	24.09	13.82	828.20	24.85	180.70	19.08	10.94	655.93	19.68	143.11
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	7200	347.76	8346.24	24	38	5.07	2.91	174.45	5.23	38.06	2.31	1.33	79.55	2.39	17.36
	VESSELS>600hp diesel(supply)	6000	289.8	6955.20	24	28	4.23	2.43	145.37	4.36	31.72	1.42	0.81	48.85	1.47	10.66
	VESSELS>600hp diesel(tugs)	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
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	9000	434.7	10432.80	24	30	6.34	3.64	218.06	6.54	47.58	2.28	1.31	78.50	2.36	17.13
	SUPPORT VESSEL diesel	9000	434.7	10432.80	24	30	6.34	3.64	218.06	6.54	47.58	2.28	1.31	78.50	2.36	17.13
	PIPELINE BURY 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
	SUPPORT 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
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
FACILITY INSTALLATION	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
	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
PRODUCTION	RECIP.<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP.>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT 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
	TURBINE nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.2 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle rich nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	BURNER nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	**BPD**	**SCF/HR**	**COUNT**												
	TANK-	0			0	0				0.00					0.00	
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	PROCESS VENT-		0		0	0				0.00					0.00	
	FUGITIVES-			0.0		0				0.00					0.00	
	GLYCOL STILL VENT-		0		0	0				0.00					0.00	
DRILLING WELL TEST	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2020	**YEAR TOTAL**						**46.08**	**26.43**	**1584.15**	**47.52**	**345.63**	**27.38**	**15.70**	**941.33**	**28.24**	**205.38**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**											**1798.20**	**1798.20**	**1798.20**	**1798.20**	**48574.47**
	54.0															

AIR EMISSIONS CALCULATIONS - SECOND YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
Talos Petroleum LLC	Viosca Knoll	911/912	G06892/06893	noll Block 956, F	Wells A-F		Erin Harold	713-335-6952	#REF!

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	34182	1650.9906	39623.77	24	83	24.09	13.82	828.20	24.85	180.70	24.00	13.76	824.89	24.75	179.98
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	7200	347.76	8346.24	24	47	5.07	2.91	174.45	5.23	38.06	2.86	1.64	98.39	2.95	21.47
	VESSELS>600hp diesel(supply)	6000	289.8	6955.20	24	36	4.23	2.43	145.37	4.36	31.72	1.83	1.05	62.80	1.88	13.70
	VESSELS>600hp diesel(tugs)	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
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	9000	434.7	10432.80	24	45	6.34	3.64	218.06	6.54	47.58	3.43	1.96	117.75	3.53	25.69
	SUPPORT VESSEL diesel	9000	434.7	10432.80	24	45	6.34	3.64	218.06	6.54	47.58	3.43	1.96	117.75	3.53	25.69
	PIPELINE BURY 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
	SUPPORT 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
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
FACILITY INSTALLATION	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
	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
PRODUCTION	RECIP.<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP.>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT 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
	TURBINE nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.2 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle rich nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	BURNER nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00					0.00	
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	PROCESS VENT-		0		0	0				0.00					0.00	
	FUGITIVES-			0.0		0				0.00					0.00	
	GLYCOL STILL VENT-		0		0	0				0.00					0.00	
DRILLING WELL TEST	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2021	YEAR TOTAL						46.08	26.43	1584.15	47.52	345.63	35.54	20.38	1221.58	36.65	266.53
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											1798.20	1798.20	1798.20	1798.20	48574.47
	54.0															

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
Talos Petroleum LLC	Viosca Knoll	911/912	G06892/06893	noll Block 956, F	Wells A-F		Erin Harold	713-335-6952	#REF!

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	34182	1650.9906	39623.77	24	61	24.09	13.82	828.20	24.85	180.70	17.64	10.11	606.24	18.19	132.27
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	7200	347.76	8346.24	24	35	5.07	2.91	174.45	5.23	38.06	2.13	1.22	73.27	2.20	15.99
	VESSELS>600hp diesel(supply)	6000	289.8	6955.20	24	26	4.23	2.43	145.37	4.36	31.72	1.32	0.76	45.36	1.36	9.90
	VESSELS>600hp diesel(tugs)	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
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	9000	434.7	10432.80	24	30	6.34	3.64	218.06	6.54	47.58	2.28	1.31	78.50	2.36	17.13
	SUPPORT VESSEL diesel	9000	434.7	10432.80	24	30	6.34	3.64	218.06	6.54	47.58	2.28	1.31	78.50	2.36	17.13
	PIPELINE BURY 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
	SUPPORT 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
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
FACILITY INSTALLATION	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
	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
PRODUCTION	RECIP.<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP.>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT 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
	TURBINE nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.2 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle rich nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	BURNER nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00					0.00	
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	PROCESS VENT-		0		0	0				0.00					0.00	
	FUGITIVES-			0.0		0				0.00					0.00	
	GLYCOL STILL VENT-		0		0	0				0.00					0.00	
DRILLING WELL TEST	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2022	YEAR TOTAL						46.08	26.43	1584.15	47.52	345.63	25.65	14.71	881.87	26.46	192.41
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES 54.0											1798.20	1798.20	1798.20	1798.20	48574.47

AIR EMISSIONS CALCULATIONS - FOURTH YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
Talos Petroleum LLC	Viosca Knoll	911/912	G06892/06893	noll Block 956, F	Wells A-F		Erin Harold	713-335-6952	#REF!

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	34182	1650.9906	39623.77	24	63	24.09	13.82	828.20	24.85	180.70	18.21	10.44	626.12	18.78	136.61
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	7200	347.76	8346.24	24	36	5.07	2.91	174.45	5.23	38.06	2.19	1.26	75.36	2.26	16.44
	VESSELS>600hp diesel(supply)	6000	289.8	6955.20	24	27	4.23	2.43	145.37	4.36	31.72	1.37	0.79	47.10	1.41	10.28
	VESSELS>600hp diesel(tugs)	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
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	9000	434.7	10432.80	0	30	6.34	3.64	218.06	6.54	47.58	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL diesel	9000	434.7	10432.80	0	30	6.34	3.64	218.06	6.54	47.58	0.00	0.00	0.00	0.00	0.00
	PIPELINE BURY 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
	SUPPORT 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
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
FACILITY INSTALLATION	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
	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
PRODUCTION	RECIP.<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP.>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT 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
	TURBINE nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.2 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle rich nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	BURNER nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00					0.00	
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	PROCESS VENT-		0		0	0				0.00					0.00	
	FUGITIVES-			0.0		0				0.00					0.00	
	GLYCOL STILL VENT-		0		0	0				0.00					0.00	
DRILLING WELL TEST	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2023	YEAR TOTAL						46.08	26.43	1584.15	47.52	345.63	21.78	12.49	748.58	22.46	163.33
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											1798.20	1798.20	1798.20	1798.20	48574.47
	54.0															

AIR EMISSIONS CALCULATIONS - FIFTH YEAR

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
Talos Petroleum LLC	Viosca Knoll	911/912	G06892/06893	noll Block 956, F	Wells A-F		Erin Harold	713-335-6952	#REF!

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	34182	1650.9906	39623.77	24	55	24.09	13.82	828.20	24.85	180.70	15.90	9.12	546.61	16.40	119.26
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER diesel	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	7200	347.76	8346.24	24	31	5.07	2.91	174.45	5.23	38.06	1.89	1.08	64.90	1.95	14.16
	VESSELS>600hp diesel(supply)	6000	289.8	6955.20	24	24	4.23	2.43	145.37	4.36	31.72	1.22	0.70	41.87	1.26	9.13
	VESSELS>600hp diesel(tugs)	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
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	9000	434.7	10432.80	24	30	6.34	3.64	218.06	6.54	47.58	2.28	1.31	78.50	2.36	17.13
	SUPPORT VESSEL diesel	9000	434.7	10432.80	24	30	6.34	3.64	218.06	6.54	47.58	2.28	1.31	78.50	2.36	17.13
	PIPELINE BURY 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
	SUPPORT 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
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
FACILITY INSTALLATION	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
	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	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
	VESSELS>600hp diesel(supply)	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
PRODUCTION	RECIP.<600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP.>600hp diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT 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
	TURBINE nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.2 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle lean nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	RECIP.4 cycle rich nat gas	0	0	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	BURNER nat gas	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	**BPD**	**SCF/HR**	**COUNT**												
	TANK-	0			0	0				0.00					0.00	
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
	PROCESS VENT-		0		0	0				0.00					0.00	
	FUGITIVES-			0.0		0				0.00					0.00	
	GLYCOL STILL VENT-		0		0	0				0.00					0.00	
DRILLING WELL TEST	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2024	**YEAR TOTAL**						**46.08**	**26.43**	**1584.15**	**47.52**	**345.63**	**23.57**	**13.52**	**810.38**	**24.31**	**176.81**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**											**1798.20**	**1798.20**	**1798.20**	**1798.20**	**48574.47**
	54.0															

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
Talos Petroleum	Viosca Knoll	911/912	G06892/06893	Viosca Knoll Block 95	Wells A-F

Year	Emitted Substance				
	PM	SOx	NOx	VOC	CO
2020	27.38	15.70	941.33	28.24	205.38
2021	35.54	20.38	1221.58	36.65	266.53
2022	25.65	14.71	881.87	26.46	192.41
2023	21.78	12.49	748.58	22.46	163.33
2024	23.57	13.52	810.38	24.31	176.81
Allowable	1798.20	1798.20	1798.20	1798.20	48574.47

DISCOVERER INSPIRATION

ULTRA-DEEPWATER DUAL-ACTIVITY DRILLSHIP

For additional information please contact:
Transocean
Marketing Department
4 Greenway Plaza
Houston, TX 77046, USA
Phone: + 1-713-232-7500
Fax: + 1-713-232-7880
marketing@deepwater.com
www.deepwater.com

General Description

Design / Generation	Transocean Offshore Enhanced Enterprise Class
Constructing Shipyard	DSME
Year Entered Service / Significant Upgrades	2008
Classification	DNV, 1A1
Flag	Marshall Islands
Dimensions	835 ft. long x 125 ft. wide x 62 ft. deep
Drafts	42 ft. operating
Accommodation	200 persons
Displacement	98,421 st operating
Variable Deck	22,046 st operating / 22,046 st transit
Transit Speed	up to 12 knots
Maximum Water Depth	12,000 ft. designed / 10,000 ft. outfitted
Maximum Drilling Depth	40,000 ft

Drilling Equipment

Derrick	NOV Dual Activity derrick, 226 ft. high, with 80 ft. x 80 ft. base.
Hookload Capacity	(Main) 2,500,000 lbs. gross nominal capacity (Aux) 2,500,000 lbs. gross nominal capacity
Drawworks	(Main): NOV Active Heave Drawworks with 6 x General Electric GEB-22A2 motors rated at 6,900 total hp. 1,050 st rated hook load with 2 inch drill line (Aux): NOV Active Heave Drawworks with 6 x General Electric GEB-22A2 motors rated at 6,900 total hp. 1,050 st rated hook load with 2 inch drill line
Compensator	(Main) active heave drawworks above (Aux) active heave drawworks above
Rotary Table	(Main) 1 x NOV 75-1/2 inch hydraulic (Aux) 1 x NOV 60-1/2 inch hydraulic
Top Drive	(Main) Maritime Hydraulics MDDM 1250-AC rated at 1,250 st motor, and rated to 101,200 ft.-lbs. continuous drilling torque in low gear (Aux) Same as above
Tubular Handling	2 x NOV PRS-5 pipe racking system, and 2 x NOV AR 4500 Iron Roughnecks
Mud Pumps	5 x NOV HEX 240 pumps, each driven by 2 x Baylor traction motors
HP Mud System	Rated for 7,500 psi
Solids Control	10 x Brandt LCM-3D/CM-2 shale shakers

Power & Machinery

Main Power	6 x MAN B&W V32/40 14 cylinder diesel engines rated at 7,000 kW, each driving 1 x LDW-Siemens generator
Emergency Power	1 x MAN B&W 7L27/38 diesel engine rated 2,310 kW, driving 1 x Hyundai 2,100 kW generator
Power Distribution	Siemens 11 kV switchboards with Siemens Blue Variable Speed generator protection

Storage Capacities

Fuel Oil	36,000 bbl
Liquid Mud	20,000 bbl active
Base Oil	9,215 bbl
Brine	20,288 bbl
Drill Water	13,700 bbl
Potable Water	5,000 bbl
Bulk Material	(mud + cement) 32,000 cu.ft.
Sack Storage	16,000 sacks

BOP & Subsea Equipment

BOP Rams	3 x Hydril 18-3/4 inch 15,000 psi Compact Double Ram Preventers (1 x 6-ram preventer)
BOP Annulars	1 x Hydril Annuflex 18-3/4 inch 10,000 psi annular preventer
2nd BOP Stack	1 x BOP stack with the same components as the primary stack listed above, including 1 x annular
BOP Handling	BOP skid system comprised of 3 x 350 st rated BOP carts; 2 sets of spider beams rated to 350 st per set
Marine Riser	Vetco HMF 21 inch OD x 75 ft. long per joint. Class G couplings and 2 x 4-1/2 inch 15,000 psi choke and kill lines
Tensioners	6 x Hydralift riser tensioners, rated at 400 st each with a 50 ft. stroke
Diverter	Vetco CSO with a 72 inch opening 500 psi diverter with 2 x 16 inch flow lines
Tree Handling	3 x 100 st Xmas tree trolley
Moonpool	72 ft. length x 30 ft. width.

Station Keeping / Propulsion System

Thrusters	6 x Rolls Royce Aquamaster thrusters rated at 7,000 hp fully azimuthing
DP System	Kongsberg Maritime Triple Redundant SDP 32 system

Cranes

Cranes	4 x MT Hydralift electro-hydraulic knuckle-boom cranes, rated to a 150 ft lift radius

Other Information

Helideck	Rated for Chinook 234 helicopters

Revision Date: 20 December 2016

Transocean

SECTION I
OIL SPILLS INFORMATION

(a) Oil Spill Response Planning
All proposed activities in this DOCD will be covered by the Regional OSRP, O-647, filed by Talos ERT LLC (BOEM Company Number 02899).

By letter dated August 1, 2018, the subject oil spill response plan, last approved on May 4, 2017, was found to be in compliance with 30 CFR 254.

(a)(2)(ii) Spill Response Sites
The following locations will be used in the event an oil spill occurs as a result of the proposed activities:

Primary Response Equipment Location	Preplanned Staging Location(s)
Houma, LA	Houma, LA
Harvey, LA	Harvey, LA
Leeville, LA	Leeville, LA / Fourchon, LA

(a)(2)(iii) OSRO Information
Talos Petroleum's primary equipment provider is Clean Gulf Associates (CGA). The Marine Spill Response Corporation's (MSRC) STARS network will provide closest available personnel, as well as an 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.

(a)(2)(iv) Worst-Case Scenario Comparison

Category	***Regional OSRP WCD***	**DOCD WCD**	**Regional OSRP WCD**	**DOCD WCD**
Type of Activity	Drilling	Drilling	>10 mile Production	>10 mile Production
Facility Location (Area/Block)	GC281	VK912	GC281	VK956
Facility Designation	Well SS001	Well Location A	SS002	A-Ram Powell
Distance to Nearest Shoreline (miles)	91	54	96	56
Volume Storage tanks (total) Uncontrolled blowout Pipelines Total Volume	 0 370000 0 **370000 bbls**	 0 71332 0 **71,332 bbls**	 0 56877 0 **56877 bbls**	 16199 0 100 **16299 bbls**
Type of Oil(s) (crude, condensate, diesel)	Crude Oil	Condensate	Crude Oil	Condensate
API Gravity	33°	46.3°	32°	49°

Talos has determined that the worst case scenario from the activities proposed herein do not replace the worst-case discharge scenario as approved in the Regional OSRP.

Talos certifies that it has the capability to respond, to the maximum extent practicable, to a worst-case discharge, or a substantial threat of such a discharge, resulting from the activities proposed herein.

(b) Spill Response Discussion for NEPA Analysis

The Oil spill response discussion is included under this section as an attachment to this section.

(c) Modeling Report

According to NTL No. 2008-G04, this section of the Plan is not applicable to the proposed operations.

(d) Worst-Case Discharge Calculations and Assumptions

Worst-case discharge (WCD) calculations and assumptions within this section utilized guidelines and requirements pursuant to NTL No. 2015-N01, which is included as an attachment to this section. Discussions regarding geologic information are considered proprietary information and have been omitted from the public copy of the plan.

SPILL RESPONSE DISCUSSION

For the purpose of NEPA and Coastal Zone Management Act analysis, the largest spill volume originating from the proposed activity would be a well blowout during drilling operations, estimated to be 71,332 barrels of condensate with an API gravity of 46.3°.

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 of Mexico available on the BOEM website. The results are shown in **Figure 1.** The BOEM OSRAM identifies a 7% probability of impact to the shorelines of Plaquemines Parish, Louisiana within 10 days. Plaquemines Parish includes Barataria Bay, the Mississippi River Delta, Breton Sound and the affiliated islands and bays. This region is an extremely sensitive habitat and serves as a migratory, breeding, feeding and nursery habitat for numerous species of wildlife. Beaches in this area vary in grain particle size and can be classified as fine sand, shell or perched shell beaches. Sandy and muddy tidal flats are also abundant.

Response

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

Using the estimated chemical and physical characteristics of condensate, an ADIOS weathering model was run on a similar product from the ADIOS oil database. The results indicate 42% or approximately 29,959 barrels of condensate would be evaporated/dispersed within 24 hours, with approximately 41,373 barrels remaining.

Natural Weathering Data: VK 912, Well Location A	**Barrels of Oil**
WCD Volume	71,332
Less 42% natural evaporation/dispersion	29,959
Remaining volume	41,373

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.

Talos's Oil Spill Response Plan includes alternative response technologies such as dispersants. Strategies will be decided by Unified Command based on a safety analysis, the size of the spill, weather and potential impacts. Although unlikely, if aerial dispersants are utilized, 8 sorties (9,600 gallons) from two of the DC-3 aircrafts and 4 sorties (8,000 gallons) from the Basler aircraft would

provide a daily dispersant capability of 7,540 barrels. Slick containment boom and sorbent boom would be immediately called out and on-scene as soon as possible. Offshore response strategies may include collection of condensate with sorbent boom (inside hard boom), attempting to skim utilizing CGA spill response equipment, with a total derated skimming capacity of 144,940 barrels. Temporary storage associated with skimming equipment equals 4,747 barrels. If additional storage is needed, various storage barges with a total capacity 141,000 bbls may be mobilized and centrally located to provide temporary storage and minimize off-loading time. **Safety is first priority. Air monitoring will be accomplished and operations deemed safe prior to any containment/skimming attempts.**

If the spill went unabated, shoreline impact in Plaquemines Parish, Louisiana would depend upon existing environmental conditions. Shoreline protection would include the use of CGA's near shore and shallow water skimmers with a totaled derated skimming capacity of 50,131 barrels. Temporary storage associated with skimming equipment equals 968 barrels. If additional storage is needed, various storage barges with a total capacity 20,000 bbls 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. An MSA with AMPOL and a Letter of Intent from OMI Environmental will ensure access to 155,350 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. As a secondary resource, the State of Louisiana Initial Oil Spill Response Plan will be consulted as appropriate to provide detailed shoreline protection strategies and describe necessary action to keep the oil spill from entering Louisiana's coastal wetlands. The UC should take into consideration all appropriate items detailed in Tactics discussion of this Appendix. The UC and their personnel have the option to modify the deployment and operation of equipment to allow for a more effective response to site-specific circumstances. Talos's contract Incident Management Team has access to the applicable ACP(s) and GRP(s).

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

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

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

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

Coordination of response assets will be supervised by the designation of a SIMOPS group as necessary for close quarter vessel response activities. Most often, this group will be used during source control events that require a significant number of large vessels operating independently to complete a common objective, in close coordination and support of each other. This group must also monitor the subsurface activities of each vessel (ROV, dispersant application, well control support, etc.). The SIMOPS group 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's contracted resources as applicable
- Industry vessels are ideal for deployment of Vessel of Opportunity Skimming Systems (VOSS)
- Acquire additional resources as needed
- Consider use of local assets, i.e. fishing and pleasure craft for ISB operations or boom tending
- Expect mission specific and safety training to be required
- Plan with the US Coast Guard for vessel inspections
- Place VOOs in Division or Groups as needed
- Use organic on-board storage if appropriate
- Maximize non-organic storage appropriate to vessel limitations
- Decant as appropriate after approval to do so has been granted
- Assign bulk storage barges to each Division/Group
- Position bulk storage barges as close to skimming units as possible
- Utilize large skimming vessel (e.g. barges) storage for smaller vessel offloading
- Maximize skimming area (swath) to the optimum width given sea conditions and available equipment
- Maximize use of oleophilic skimmers in all operations, but especially offshore
- Nearshore, use shallow water barges and shuttle to skimming units to minimize offloading time
- Plan and equip to use all offloading capabilities of the storage vessel to minimize offloading time

Adverse Weather Operations:

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

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

Maximization of skimmer-oil encounter rate

- Place barges in skimming task forces, groups, etc., to reduce recovered oil offloading time
- Place barges alongside skimming systems for immediate offloading of recovered oil when practicable
- Use two vessels, each with heavy sea boom, in an open-ended "V" configuration to funnel surface oil into a trailing skimming unit's organic, V-shaped boom and skimmer (see page 7, *CGA Equipment Guide Book and Tactic Manual* (CGATM)

- Use secondary vessels and heavy sea boom to widen boom swath beyond normal skimming system limits (see page 15, CGATM)
- Consider night-time operations, first considering safety issues
- Utilize all available advanced technology systems (IR, X-Band Radar, etc.) to determine the location of, and move to, recoverable oil
- Confirm the presence of recoverable oil prior to moving to a new location

Maximize skimmer system efficiency

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

Recovered Oil Storage

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

Command, Control, and Communications (C^3)

- Publish, implement, and fully test an appropriate communications plan
- Design an operational scheme, maintaining a manageable span of control
- Designate and mark C^3 vessels for easy aerial identification
- Designate and employ C^3 aircraft for task forces, groups, etc.
- Use reconnaissance 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: • Tank(s) • Crane(s) • Boom Reels • Hydraulic Power Units • Equipment Boxes	18x32 ft	100x40 ft	18x32 ft
Communication Assets	Marine Band Radio	Marine Band Radio	Marine Band Radio

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

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

The Fast Response Unit (FRU): 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

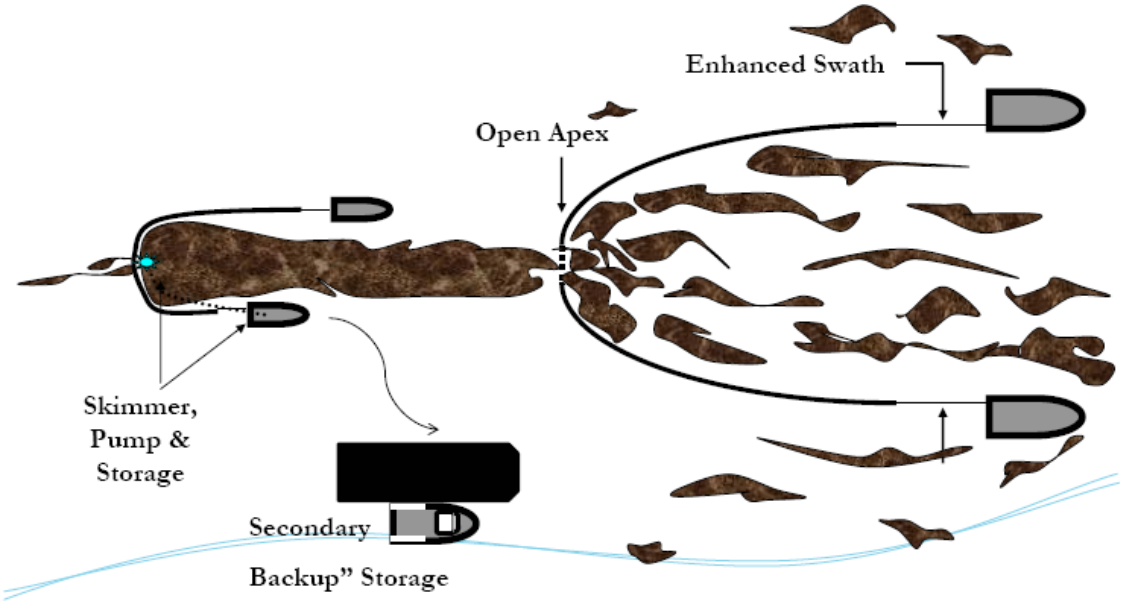
Mechanical Recovery – Deployed on large vessels of opportunity (VOO) the Koseq Rigid Sweeping Arms are high volume surge capacity deployed to increase recovery capacity at the source of a large oil spill in the offshore and outer nearshore environment of the Gulf of Mexico. They are highly mobile and 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.

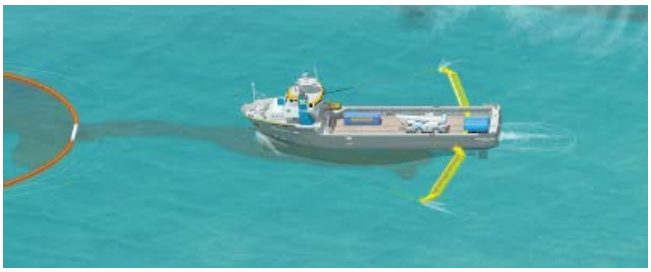
Command and Control – The large OSVs in many cases have state of the art communication and electronic systems, as well as the accommodations to support the function of directing all skimming operations offshore and reporting back to the command post.

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 thought a "gate" at that apex, forming a larger stream of oil which moves into the boom of the skimming vessel. Operations are paced at >1. A recovered oil barge stationed nearby to minimize time taken to offload recovered oil.



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

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

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

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

Near Shore Response Actions

Timing

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

Considerations

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

Surveillance

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

Dispersant Use

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

Dedicated Near Shore skimming systems

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

VOO

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

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

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

Environmental Conditions in the GOM

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

FIGURE 1
TRAJECTORY BY LAND SEGMENT

Trajectory of a spill and the probability of it impacting a land segment have been projected utilizing Talos's WCD and information in the BOEM Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the BOEM website using 10 day impact. The results are tabulated below.

Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%)
Drilling, completion and production of Well locations A-F **VK 912, Well Location A** *54 miles from shore*	G06893	C55	**Plaquemines, LA** St. Bernard, LA Jackson, MS Mobile, AL Baldwin, AL	**7** 2 1 1 1

WCD Scenario– <u>BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS</u> (54 miles from shore)
41,373 bbls of condensate (Volume considering natural weathering)
API Gravity 49.7°

FIGURE 2 – Equipment Response Time to VK 912, Well Location A

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	0.8	4.8
DC 3	1200	2	Houma	2	2	1.1	5.1
DC 3	1200	2	Houma	2	2	1.1	5.1
Aero Commander	NA	2	Houma	2	2	0.8	4.8
MSRC							
C-130 Spray AC	4,125	3	Kiln	4	0	0.4	4.4
King Air BE90 Spray AC	250	2	Kiln	4	0	0.6	4.6

Offshore Response

Offshore Equipment Pre-Determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
CGA											
HOSS Barge	76285	4000	3 Tugs	8	Harvey	6	0	12	10	2	30
95' FRV	22885	249	NA	6	Leeville	2	0	2	6.5	1	11.5
95' FRV	22885	249	NA	6	Venice	2	0	3	4	1	10
95' FRV	22885	249	NA	6	Vermilion	2	0	3	10	1	16
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	8	0	4	19	2	33
Enterprise Marine Services LLC (Available through contract with CGA)											
CTCo 2603	NA	25000	1 Tug	6	Amelia	16	0	6	25	1	48
CTCo 2607	NA	23000	1 Tug	6	Amelia	16	0	6	25	1	48
CTCo 2608	NA	23000	1 Tug	6	Amelia	16	0	6	25	1	48
CTCo 2609	NA	23000	1 Tug	6	Amelia	16	0	6	25	1	48
CTCo 5001	NA	47000	1 Tug	6	Amelia	16	0	6	25	1	48

Staging Area: Venice

Offshore Equipment Preferred Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Site	Hrs to Deploy	Total Hrs
MSRC											
67” Curtain Pressure Boom (53570’)	NA	NA	80*	160	Houston	1	2	12	7	1	23

** Utility Boats, Crew Boats, Supply Boats, or Fishing Vessels*

Nearshore Response

Nearshore Equipment Pre-determined Staging	EDRC	Storage Capacity	VOO	Persons Required	From	Hrs to Procure	Hrs to Loadout	Hrs to GOM	Travel to Spill Site	Hrs to Deploy	Total Hrs
CGA											
46' FRV	15257	65	NA	4	Leeville	2	0	2	2	1	7
46' FRV	15257	65	NA	4	Venice	2	0	2	2	1	7
Enterprise Marine Services LLC (Available through contract with CGA)											
CTCo 2604	NA	20000	1 Tug	6	Amelia	25	0	6	16	1	48
CTCo 2605	NA	20000	1 Tug	6	Amelia	25	0	6	16	1	48
CTCo 2606	NA	20000	1 Tug	6	Amelia	25	0	6	16	1	48

Staging Area: Venice

Nearshore Equipment With Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Load Out	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
CGA											
SWS Egmopol	1810	100	NA	3	Galveston	2	2	13	2	1	20
SWS Egmopol	1810	100	NA	3	Leeville	2	2	4.5	2	1	11.5
SWS Marco	3588	20	NA	3	Lake Charles	2	2	8	2	1	15
SWS Marco	3588	34	NA	3	Leeville	2	2	4.5	2	1	11.5
SWS Marco	3588	34	NA	3	Venice	2	2	2	2	1	9
Foilex Skim Package (TDS 150)	1131	50	NA	3	Lake Charles	4	12	8	2	2	28
Foilex Skim Package (TDS 150)	1131	50	NA	3	Galveston	4	12	13	2	2	33
Foilex Skim Package (TDS 150)	1131	50	NA	3	Harvey	4	12	2	2	2	22
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Lake Charles	2	2	8	2	1	15
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Harvey	2	2	2	2	1	9
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Lake Charles	2	2	8	2	1	15
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Harvey	2	2	2	2	1	9

Staging Area: Venice

Shoreline Protection Boom	VOO	Persons Req.	Storage/Warehouse Location	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment Site	Hrs to Deploy	Total Hrs
AMPOL (available through MSA)									
34,050’ 18” Boom	13 Crew	26	New Iberia, LA	2	2	6	2	12	24
12,850’ 18” Boom	7 Crew	14	Chalmette, LA	2	2	2.5	2	6	14.5
900’ 18” Boom	1 Crew	2	Morgan City, LA	2	2	4.5	2	2	12.5
3,200’ 18” Boom	2 Crew	4	Venice, LA	2	2	0	2	2	8
12,750’ 18” Boom	7 Crew	14	Port Arthur, TX	2	2	10	2	6	22
OMI Environmental (available through Letter of Intent)									
14,000’ 18” Boom	6 Crew	12	Belle Chasse, LA	1	1	2	2	3	9
2,000’ 18” Boom	1 Crew	2	Galliano, LA	1	1	4	2	3	11
1,800’ 18” Boom	1 Crew	2	Gonzalez, LA	1	1	4	2	3	11
11,800’ 18” Boom	5 Crew	10	Harvey, LA	1	1	2	2	3	9
2,000’ 18” Boom	2 Crew	4	Houma, LA	1	1	4	2	3	11
2,400’ 18” Boom	2 Crew	4	Morgan City, LA	1	1	5	2	3	12
3,800’ 18” Boom	2 Crew	4	New Iberia, LA	1	1	6	2	3	13
2,300’ 18” Boom	2 Crew	4	Port Allen, LA	1	1	5	2	3	12
1,500’ 18” Boom	1 Crew	2	Venice, LA	1	1	0	2	3	7
19,000’ 18” Boom	6 Crew	12	Deer Park, TX	1	1	12	2	3	19
11,000’ 18” Boom	5 Crew	10	La Marque, TX	1	1	13	2	3	20
20,000’ 18” Boom	6 Crew	12	Port Arthur, TX	1	1	10	2	3	17

Wildlife Response	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
					CGA						
Wildlife Support Trailer	NA	NA	NA	2	Harvey	2	2	2	1	2	9
Bird Scare Guns (24)	NA	NA	NA	2	Harvey	2	2	2	1	2	9
Bird Scare Guns (12)	NA	NA	NA	2	Galveston	2	2	13	1	2	20
Bird Scare Guns (12)	NA	NA	NA	2	Aransas Pass	2	2	18	1	2	25
Bird Scare Guns (48)	NA	NA	NA	2	Lake Charles	2	2	8	1	2	15
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	4.5	1	2	11.5

Response Asset	Total
Offshore EDRC	144,940
Offshore Recovered Oil Capacity	145,747
Nearshore / Shallow Water EDRC	50,131
Nearshore / Shallow Water Recovered Oil Capacity	60,968

SECTION J
ENVIRONMENTAL MONITORING INFORMATION

(a) Monitoring Systems
There are no environmental monitoring systems currently in place or planned for the proposed activities.

(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.

The proposed operations will not utilize a casing hammer to drive pipe.

Talos does not propose any new pipelines that will make landfall.

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"

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 lnjured/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

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 moonpools 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.

(c) Flower Garden Banks National Marine Sanctuary

Viosca Knoll Blocks 911/912 are not located in the Flower Garden Banks National Marine Sanctuary; therefore, the requested information is not required in this DOCD.

SECTION K
LEASE STIPULATIONS INFORMATION

(a) Lease Stipulations

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):

Stipulation No. 1 – Cultural Resource

Prior to commencing any operations, the lessee will provide a report, as specified by the regional manager, to determine the potential existence of any cultural resource that may be affected by operations. The report shall be based on an assessment of data from remote sensing surveys and other pertinent cultural and environmental information. The lessee shall submit this report to the regional manager for review. If evidence shows cultural resources may be present, the lessee shall avoid the area so as not to adversely affect the cultural resource or establish to the regional manager that the resource does not exist or will not be adversely affected by operations.

If the lessee discovers any cultural resource while conducting operations, the lessee shall immediately report the discovery to the regional manager and make every reasonable effort to preserve the cultural resource until the regional manager has determined how the lessee shall protect it.

Stipulation No. 5 – Suspension of Production

The director shall suspend or temporarily prohibit production or any other operation or activity pursuant to the lease if such suspension or cessation of operations or activities is necessary to complete operations or activities in a development and production plan approved by the regional manager.

SECTION L
ENVIRONMENTAL MITIGATION MEASURES INFORMATION

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

The State of Florida is not an affected State for the activities proposed in this plan; therefore, pursuant to NTL 2008-G04, this information is not required.

(b) Incidental Takes

There are no operations proposed in this plan that will be using explosives or seismic instruments, therefore there is no reason to believe that a protected species may be incidentally taken by the proposed activities, however, Talos will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the ESA as a result of the operations conducted herein:

- NTL 2015-G03, "Marine Trash and Debris Awareness and Elimination"
- NTL 2016-G01, "Vessel Strike Avoidance and Injured/Dead Protected Species Reporting"
- 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 lnjured/Dead Aquatic Protected Species Reporting Protocols, found in the Biological Opinion issued by the National Marine Fisheries Service on March 13, 2020
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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.

SECTION M
RELATED FACILITIES AND OPERATIONS INFORMATION

(a) Related OCS Facilities and Operations

Under the subject plan, Talos is proposing to drill, complete and produce 6 subsea wells in Viosca Knoll Blocks 911/912. The proposed subsea wells will be equipped with a subsea tree and routed via lease term pipeline(s) to the existing Viosca Knoll Block 956 A-Ram Powell (CXID 24229) facility.

Talos proposes to install six, 8-inch gas/condensate, lease term pipelines approximately 2.27 miles in length to transport produced hydrocarbons from each subsea well to platform A-Ram Powell in Viosca Knoll Block 956. The maximum flow rate is 10000 bbl/d and 70 MMCFD. The pipelines will have a shut-in time of 3 minutes.

No new structure will be constructed.

No anchors, anchor chains, wire ropes or cables will be deployed during the subsea infrastructure installation and will not be used during pipeline installations.

No other modifications to the facilities are proposed.

(b) Transportation System

Hydrocarbon production from the proposed subsea wells will be transported via pipeline to the A-Ram Powell platform in Viosca Knoll Block 956 for processing. Production from the facility will be transported to the onshore delivery system via the existing export pipeline(s).

(c) Produced Liquid Hydrocarbons Transportation Vessels

There will not be any transfers of liquid hydrocarbons, including well test fluids, other than via pipeline for the activities proposed for in this plan.

SECTION N
SUPPORT VESSELS AND AIRCRAFT INFORMATION

(a) General

The following list provides information regarding the vessels and aircraft Talos will use to support our proposed drilling/completion /production activities:

Type	Max Fuel Storage Tank Capacity	Max Number in Area at Any Time	Trip Frequency or Duration
Supply Boat	6000 bbls	2	3 trips per week
Crew Boat	1700 bbls	1	4 trips per week
Helicopter	260 gallons	1	3 trips per week
Helicopter	125 gallons	1	Daily

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

(b) Diesel Oil Supply Vessels

Size of Fuel Supply Vessel	Capacity of Fuel Supply Vessel	Frequency of Fuel Transfers	Route Fuel Supply Vessel Will Take
320' Supply Boat	6000 bbls	Weekly	Most direct route from shore base to block

(c) Drilling Fluid Transportation

Type of Material	Quantity Being Transported	Transportation Method
SBM	8000 bbls	Supply Boat

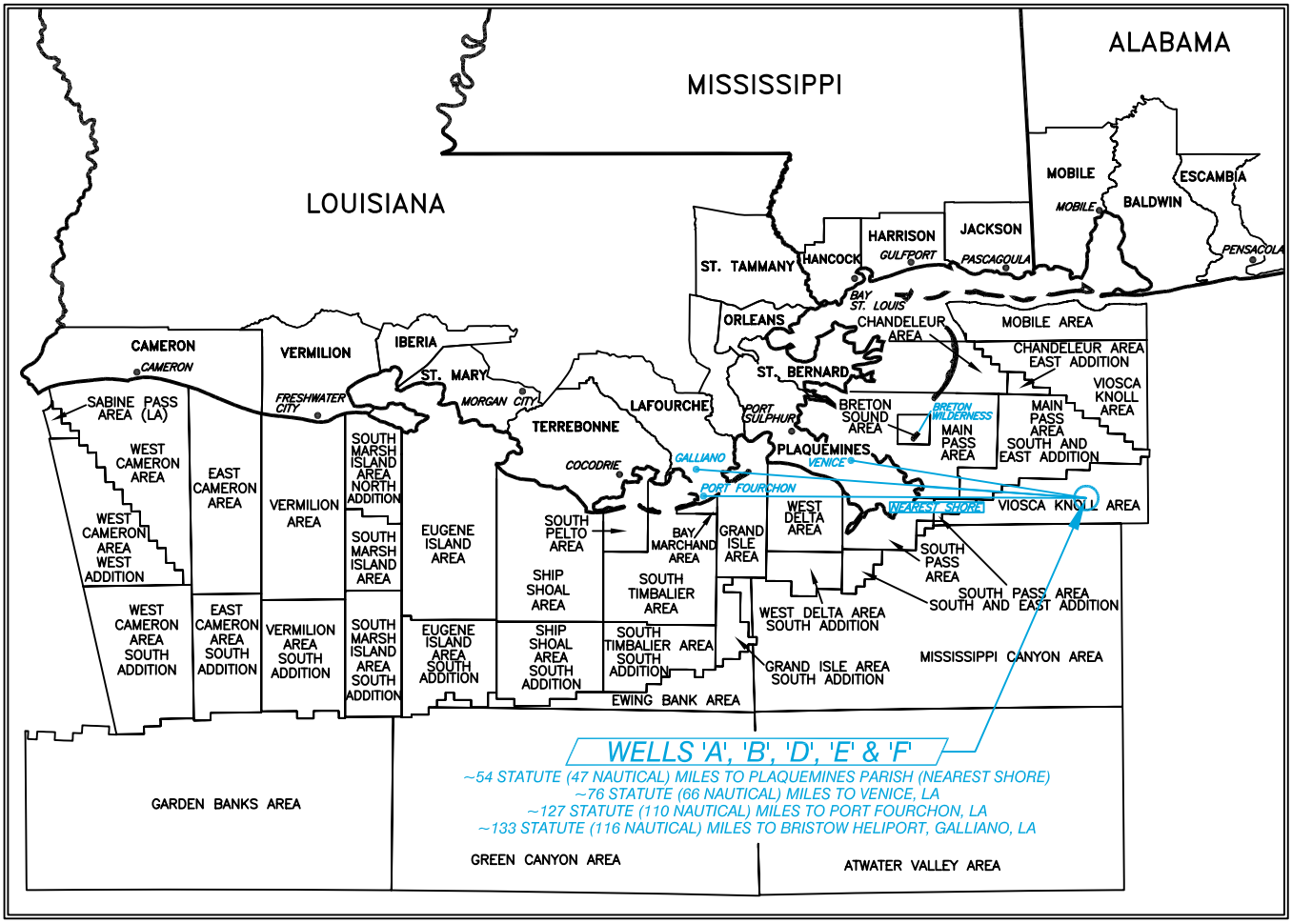
(d) Solid and Liquid Waste Transportation

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 section.

(e) Vicinity Map

Enclosed as an attachment to this section 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 onshore support vessels associated with the activities proposed in this plan will not transit the Bryde's whale area.

LOUISIANA GULF COAST INDEX
BOEM O.C.S. LEASING AREAS



VICINITY MAP

COORDINATE TO NEAREST POINT ON SHORELINE X = 1,002,573 Y = 10,594,828.

THE DISTANCES SHOWN HEREON ARE FROM THE PROPOSED WELL TO THE NEAREST COASTLINE POINT AS OBTAINED FROM NOAA, ENTITLED NOAA MEDIUM RESOLUTION SHORELINE. <HTTP://SHORELINE.NOAA.GOV/DATA/DATASHEETS/MEDRES.HTML>.

SHEET 1 OF 1

DATUM: NAD 27	
SPHEROID: CLARKE 1866	
PROJECTION: U.T.M.	
ZONE: 16	

Echo OFFSHORE LLC
36499 Perkins Road
Prairieville, Louisiana 70769
Tel: 225-673-2163

TALOS PETROLEUM LLC

TALOS PETROLEUM LLC

EXPLORATION PLAT

PROPOSED WELLS 'A', 'B', 'D', 'E' & 'F'
OCS-G 06893 BLOCKS 912
VIOSCA KNOLL AREA

GULF OF MEXICO

DRAWN BY:	DATE:	CHECKED BY:	DRAWING No.:
JFL	11/20/2019	RJN	19-033EXP
REV. DATE:	REV. No.:	SCALE:	JOB No.:
		N.T.S.	19-033-42

SECTION O
ONSHORE SUPPORT FACILITIES INFORMATION

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

Name of Shorebase	*Location*	*Existing/New/Modified*
Martin Terminal North	Fourchon, LA	Existing
Bristow Heliport	Galliano, LA	Existing

(b) Support Base Construction or Expansion
In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as Talos Petroleum will use an existing onshore base facility and will not need to expand or modify those facilities to accomodate the operations proposed herein.

(c) Support Base Construction or Expansion Timetable
In accordance with NTL 2008-G04, this information is not applicable to the activities proposed herein as no land is being acquired to construct or expand an onshore support base.

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

SECTION P
COASTAL ZONE MANAGEMENT (CZMA) INFORMATION

The States of Texas, Louisiana, Mississippi, Alabama and Florida have federally approved coastal zone management programs (CZMP). Applications for an OCS plan submitted to the BOEM must provide a certification with necessary data and information for the affected State to determine that the proposed activity(s) complies with the enforceable policies for each States' approved program, and that such activity will be conducted in a manner consistent with the program.

(a) Consistency Certification

Relevant enforceable policies were considered in certifying consistency for Alabama. A certificate of Coastal Zone Management Consistency for the state of Alabama is included herein.

(b) Other Information

(1) Talos shall utilize a shore base in Fourchon, Louisiana for water support and Bristow's Galliano terminal for air traffic for the proposed activities.

(2) As per NTL 2008-G04, the following items have been identified as being required:

- A discussion of the method of disposal of wastes and discharges is provided in the Waste and Discharge Information Section of this plan.
- Oil Spill Information is provided in the Oil Spills Information Section of the above-mentioned DOCD.
- All operations are covered by Talos ERT LLC's Regional Oil Spill Response Plan, which has been approved by BOEM. The Plan is available upon request.

(3) Following is an evaluation that includes findings relating the coastal effects of the proposed activities and associated facilities to the relevant enforceable policies of the Alabama's Coastal Management Program:

All activities shall be consistent with Alabama's coastal management program and shall comply with all relevant rules and regulations. Pollution shall be prevented or reduced at the source; pollution that cannot be prevented shall be recycled in an environmentally safe manner; pollution that cannot be prevented or recycled shall be treated in an environmentally safe manner; and disposal or other release into the environment shall be employed only as a last resort and should be conducted in an environmentally safe manner. All activities comply with all applicable provisions of the administrative code. No activities are planned within special management areas. Activities will be carried out avoid unnecessary conflicts with other uses of the vicinity.

COASTAL RESOURCE USE POLICIES

Coastal Development – All activities shall be conducted in a manner that minimizes significant impacts to coastal resources. No adverse effects to Alabama's coastal area are expected in association with the proposed activities.

Mineral Resource Exploration and Extraction – No conflicts with any other mineral resource exploration and extraction are expected.

Commercial Fishing – All uses and activities shall be planned, sited, designed, constructed, operated and maintained to avoid to the maximum extent practicable adverse disruptions to fishery migratory patterns.

Hazard Management- Effective emergency plans are in place, practiced, and updated as necessary. The best practical techniques shall be utilized to prevent the release of pollutants or toxic substances into the environment.

Shoreline Erosion - All uses and activities shall be planned, sited, designed, constructed operated and maintained to avoid to the maximum extent practicable adverse alteration of protective coastal features.

Recreation – We have considered the general factors utilized by permitting authorities and have determined that the proposed activities shall cause no adverse impacts on areas of public use or concern, and all uses and activities shall be planned, sited, designed, constructed operated and maintained to avoid to the maximum extent practicable adverse alteration of these areas. The BOEM has regulations in place which explicitly prohibit the disposal of equipment, cables, chains, chains, containers or other materials which may pose an unreasonable risk to public health, property, aquatic life, wildlife, recreation, navigation, commercial fishing, or other uses of the ocean into offshore waters. Although marine debris gets lost from time to time, the impact on Gulf Coast recreational beaches is expected to be minimal. No impacts are expected to adversely affect Public access to tidal and submerged lands, navigable waters and beaches or other public recreational resources.

Transportation- Alabama's transportation resources are not expected to be impacted, as shorebases in Fourchon and Galliano, Louisiana will be utilized for the proposed operations. Also, boats will not travel through any sensitive coastal areas off of the coast of Alabama.

NATURAL RESOURCE PROTECTION POLICIES

Biological Productivity - All uses and activities shall be planned, sited, designed, constructed, operated and maintained to avoid to the maximum extent practicable adverse alteration of biologically valuable areas. All uses and activities shall be planned, sited, designed, constructed, operated and maintained to avoid to the maximum extent practicable reductions in long-term biological productivity of the coastal ecosystem. No impacts are expected to adversely affect the biological productivity of the area.

Water Quality - The proposed activities shall be carried out in conformance with applicable water quality laws, standards, and regulations. All discharges shall be covered by an NPDES permit. There shall be no discharge of untreated produced water, drilling muds, or cuttings resulting from energy exploration and production activities to the coastal waters of Alabama. Produced waters that are discharged offshore are diluted and dispersed to very near background levels at a distance of 1,000 m and are undetectable at a distance of 3,000 m from the discharge point. The BOEM regulations, the USEPA's NPDES general permit, and the USCG regulations implementing MARPOL 73/78 Annex V prohibit the disposal of any trash and debris into the marine environment.

Water Resources - All uses and activities shall be planned, sited, designed, constructed, operated and maintained to avoid to the maximum extent practicable detrimental discharges into coastal waters.

Air Quality - The proposed activities shall be carried out in conformance with applicable air quality laws, standards, and regulations. Emissions from the proposed activities are not expected to have significant impacts on onshore air quality because of the prevailing atmospheric conditions, emission heights, emission rates, and the distance of these emissions from the coastline.

Wetlands and Submerged Grassbeds - All uses and activities shall be planned, sited, designed, constructed operated and maintained to avoid to the maximum extent practicable reductions of natural circulation patterns within or into wetlands and submerged grassbeds. Pipeline and navigation canals are considered the most significant impacting factors to wetlands and neither is proposed in the DOCD. Proposed activities are not expected to have any adverse impact on seagrass communities.

Beach and Dune Protection - Effective environmental protection plans are in place, practiced, and updated as necessary. No significant impacts to the physical shape and structure of barrier beaches and associated dunes are expected to occur. In the unlikely event of a spill contacting a barrier beach, sand removal during cleanup would be minimized.

Wildlife Habitat Protection - We have considered the general factors utilized by permitting authorities and have determined that the proposed activities shall cause no adverse impacts on wildlife habitat areas. All uses and activities shall be planned, sited, designed, constructed operated and maintained to avoid to the maximum extent practicable adverse alteration of wildlife habitats or coastal wildlife. Proposed activities are in OCS waters, so they are located away from critical wildlife and vegetation areas. Access routes from shore base operations shall pose no adverse on these critical wildlife and vegetation areas.

Endangered Species - No impacts are expected to adversely affect wildlife and fishery habitat, especially the designated Critical Habitats of Endangered Species.

Beach mice – Potential impacts include oil spills, oil-spill response activities, consumption of beach trash and debris and coastal habitat degradation. No significant impacts to beach mice are expected to occur. Protective measures required under the Endangered Species Act should prevent any oil-spill response and cleanup activities from having significant impact to beach mice and their habitat.

Marine birds– Potential impact-producing factors for marine birds in the offshore environment include helicopter and service vessel traffic and noise, air emissions, degradation of water quality, habitat degradation, and ingestion discarded trash and debris from service vessels and OCS structures. Adverse impacts to endangered coastal and marine birds are expected to be sublethal.

Sea turtles – Potential impact-producing factors from the proposed activities that may affect sea turtles include water quality degradation from operational discharges, noise from helicopter and vessel traffic and operating platforms, vessel collisions, brightly lit platforms, and swallowing or getting tangled in OCS-related trash and debris. Routine activities are expected to be sublethal and unlikely to have significant adverse effects on the size and recovery of any sea turtle species or population in the Gulf of Mexico.

Sturgeon – Drilling mud discharges may contain chemicals toxic to sturgeon, at concentrations four or five orders of magnitude higher than concentrations found a few meters from the discharge point. These discharges dilute to background levels within 1000m of the discharge point. No impacts from the proposed activities are expected.

Cultural Resources Protection - All uses and activities shall be planned, sited, designed, constructed operated and maintained to avoid to the maximum extent practicable adverse alteration of cultural resources. No impacts are expected to adversely affect historical, architectural, or archaeological sites. Should any historical, architectural, or archaeological resource be discovered in the course of conducting authorized activities, the Alabama Department of Environmental Management and the Alabama State Historical Officer shall be notified.

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

SUPPLEMENTAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT

VIOSCA KNOLL BLOCKS 911/912

OCS-G 06892/06893

The proposed activities described in detail in this OCS Plan will comply with all enforceable policies as Alabama's approved Coastal Management Program and will be conducted in a manner consistent with such program.

Talos Petroleum LLC
Lessee or Operator

Certifying Official

12/20/2019

Date

SECTION Q
ENVIRONMENTAL IMPACT ANALYSIS (EIA)

In accordance with NTL 2008-G04, Talos Petroleum has included with this plan an Environmental Impact Analysis prepared by Trusted Compliance, which addresses the activities proposed herein. A copy of the Environmental Impact Analysis is included as an attachment to this section.

Talos Petroleum LLC (Talos)

Supplemental Development Operations Coordination Document
Viosca Knoll Block 912
OCS-G 06893

(A) IMPACT PRODUCING FACTORS

ENVIRONMENTAL IMPACT ANALYSIS WORKSHEET

Environment Resources	Impact Producing Factors (IPFs) Categories and Examples Refer to recent GOM OCS Lease Sale EIS for a more complete list of IPFs					
	Emissions (air, noise, light, etc.)	**Effluents (muds, cutting, other discharges to the water column or seafloor)**	**Physical disturbances to the seafloor (rig or anchor emplacements, etc.)**	**Wastes sent to shore for treatment or disposal**	**Accidents (e.g., oil spills, chemical spills, H_2S releases)**	**Discarded Trash & Debris**
Site-specific at Offshore Location						
Designated topographic features		(1)	(1)		(1)	
Pinnacle Trend area live bottoms		(2)	(2)		(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Benthic communities			(4)			
Water quality		X			X	
Fisheries		X			X	
Marine Mammals	X(8)	X			X(8)	X
Sea Turtles	X(8)	X			X(8)	X
Air quality	X(9)					
Shipwreck sites (known or potential)			(7)			
Prehistoric archaeological sites			(7)			
Vicinity of Offshore Location						
Essential fish habitat		X			X(6)	
Marine and pelagic birds					X	X
Public health and safety					(5)	
Coastal and Onshore						
Beaches					X(6)	X
Wetlands					X(6)	
Shore birds and coastal nesting birds					X6)	
Coastal wildlife refuges						
Wilderness areas						

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

(B) Analysis

Site-Specific at Viosca Knoll Block 912

Proposed operations consist of the drilling, completion, and production of well locations A-F. The operations will be conducted with a dynamically positioned semisubmersible or drillship.

1. Designated Topographic Features

Potential IPFs on topographic features include effluents, and accidents.

Effluents: Viosca Knoll Block 912 is 93 miles from the closest designated Topographic Features Stipulation Block (Sackett Bank); therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to benthic organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 m depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on corals. Because the crests of topographic features in the Northern Gulf of Mexico are found below 10 m, no oil from a surface spill could 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 Petroleum LLC's Regional OSRP (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 disposal) from the proposed activities, which could impact topographic features.

2. Pinnacle Trend Area Live Bottoms

Potential IPFs on pinnacle trend area live bottoms include effluents and accidents.

Effluents: Viosca Knoll Block 912 is 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 activities (refer to statistics in **Item 5**, Water Quality). Oil spills have the potential to foul benthic communities and cause lethal and sublethal effects on live bottom organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 m 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 applicable due to the distance of these blocks from a live bottom

(pinnacle trend) area. The activities proposed in this plan will be covered by Talos Petroleum LLC's Regional OSRP (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 disposal) from the proposed activities which could impact a live bottom (pinnacle trend) area.

3. Eastern Gulf Live Bottoms

Potential IPFs on Eastern Gulf live bottoms include effluents and accidents.

Effluents: Viosca Knoll Block 912 is not located in an area characterized by the existence of live bottoms; therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to live bottom organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 m 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 applicable due to the distance of these blocks from a live bottom area. The activities proposed in this plan will be covered by Talos Petroleum LLC's Regional OSRP (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 disposal) from the proposed activities which could impact an Eastern Gulf live bottom area.

4. Benthic Communities

There are no IPFs (including emissions, physical disturbances to the seafloor, wastes sent to shore for disposal, or accidents) from the proposed activities that could cause impacts to benthic communities.

A dynamically positioned semisubmersible or drillship is being used for the proposed activities; therefore, only an insignificant amount of seafloor will be disturbed. Because physical disturbances to the seafloor will be minimized by the use of a dynamically positioned semisubmersible or drillship, Talos Petroleum LLC's proposed operations in Viosca Knoll Block 912 would not cause impacts to benthic communities.

5. Water Quality

IPFs that could result in water quality degradation from the proposed operations in Viosca Knoll Block 912 include effluents and accidents.

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.

Accidents: Oil spills have the potential to alter offshore water quality; however, it is unlikely that an accidental surface or subsurface spill would occur from the proposed activities. Between 1980 and 2000, OCS operations produced 4.7 billion barrels of oil and spilled only 0.001 percent of this oil, or 1 bbl for every 81,000 bbl produced. The spill risk related to a diesel spill from drilling operations is even less. Between 1976 and 1985, (years for which data were collected), there were 80 reported diesel spills greater than one barrel associated with drilling activities. Considering that there were 11,944 wells drilled, this is a 0.7 percent probability of an occurrence. 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. The activities proposed in this plan will be covered by Talos Petroleum LLC's Regional Oil Spill Response Plan (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 disposal) from the proposed activities which could cause impacts to water quality.

6. Fisheries

IPFs that could cause impacts to fisheries as a result of the proposed operations in Viosca Knoll Block 912 include effluents and accidents.

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 m of the discharge point and are expected to have negligible effect on fisheries.

Accidents: An accidental oil spill has the potential to cause some detrimental effects on fisheries; however, it is unlikely that such an event would occur from the proposed activities (refer to **Item 5**, Water Quality). The effects of oil on mobile adult finfish or shellfish would likely be sublethal and the extent of damage would be reduced to the capacity of adult fish and shellfish to avoid the spill, to metabolize hydrocarbons, and to excrete both metabolites and

parent compounds. The activities proposed in this plan will be covered by Talos Petroleum LLC's Regional OSRP (refer to information submitted in **Appendix I**).

There are no IPFs from emissions, physical disturbances to the seafloor or wastes sent to shore for disposal from the proposed activities which could cause impacts to fisheries.

7. Marine Mammals

GulfCet II studies 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. IPFs that could cause impacts to marine mammals as a result of the proposed operations in Viosca Knoll Block 912 include emissions, effluents, discarded trash and debris, and accidents.

Emissions: Noises from drilling activities, support vessels and helicopters 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). There is little conclusive evidence for long-term displacements and population trends for marine mammals relative to noise.

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 activities is not expected to substantially harm marine mammals. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and 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 Petroleum LLC will operate in accordance with the regulations 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.

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 Petroleum LLC 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 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 when they are sighted. Vessel personnel should use a Gulf of Mexico reference guide to help identify the twenty-one species of whales and dolphins, and the single species of manatee that may be encountered in the Gulf of Mexico OCS. 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 1-877-433-8299 (http://www.nmfs.noaa.gov/pr/health/report.htm#southeast). 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 a contract vessel, the BOEM must be notified within 24 hours of the strike by email to 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.

Oil spills have the potential to cause sublethal oil-related injuries and spill-related deaths to marine mammals. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to changes in cetacean behavior and/or distribution, thereby causing additional stress to the animals. The effect of oil dispersants on cetaceans is not known. The acute toxicity of oil dispersant chemicals included in Talos Petroleum LLC'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 Petroleum LLC's OSRP (refer to information submitted in accordance with **Appendix I**).

There are no other IPFs (including physical disturbances to the seafloor) from the proposed activities which could impact marine mammals.

8. Sea Turtles

IPFs that could cause impacts to sea turtles as a result of the proposed operations include emissions, effluents, discarded trash and debris, and accidents. GulfCet II studies sighted most loggerhead, Kemp's ridley and leatherback sea turtles over shelf waters. Historically these species have been sighted up to the shelf's edge. They appear to be more abundant east of the Mississippi River than they are west of the river (Fritts et al., 1983b; Lohoefener et al., 1990). Deep waters may be used by all species as a transitory habitat.

Emissions: Noise from drilling activities, support vessels, and helicopters may elicit a startle reaction from sea turtles, but this is a temporary disturbance.

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 activities is not expected to substantially harm sea turtles. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and 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 Petroleum LLC will operate in accordance with the regulations 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.

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 Petroleum LLC 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 when they are sighted. Vessel crews should use a reference guide to help identify the five species of sea turtles that may be encountered in the Gulf of Mexico OCS. 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). 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 a contract vessel, the BOEM must be notified within 24 hours of the strike by email to

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.

All sea turtle species and their life stages are vulnerable to the harmful effects of oil through direct contact or by fouling of their food. Exposure to oil can be fatal, particularly to juveniles and hatchlings. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to the possibility of collisions with sea turtles. The activities proposed in this plan will be covered by Talos Petroleum LLC's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Appendix I**).

There are no other IPFs (including physical disturbances to the seafloor) from the proposed activities which could impact sea turtles.

9. Air Quality

Viosca Knoll Block 912 is located 70 miles from the Breton Wilderness Area and 54 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 activities. Plan Emissions for the proposed activities do not exceed the annual exemption levels as set forth by BOEM. Accidents and blowouts can release hydrocarbons or chemicals, which could cause the emission of air pollutants. However, these releases would not impact onshore air quality because of the prevailing atmospheric conditions, emission height, emission rates, and the distance of Viosca Knoll Block 912 from the coastline. There are no other IPFs (including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal) from the proposed activities which would impact air quality.

10. Shipwreck Sites (known or potential)

Potential IPFs that could impact known or unknown shipwreck sites as a result of the proposed operations in Viosca Knoll Block 912 include disturbances to the seafloor.

Physical disturbances to the seafloor: A dynamically positioned semisubmersible or drillship is being used for the proposed activities; therefore, only an insignificant amount of seafloor will be disturbed. Because physical disturbances to the seafloor will be minimized by the use of a dynamically positioned semisubmersible or drillship, Talos Petroleum LLC's proposed operations in Viosca Knoll Block 912 would not cause impacts to shipwreck sites.

Additionally, Viosca Knoll Block 912 is not located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks, therefore, no adverse impacts are expected.

There are no other IPFs (including emissions, effluents, wastes sent to shore for treatment or disposal, or accidents) from the proposed activities that could cause impacts to shipwreck sites.

11. Prehistoric Archaeological Sites

IPFs that could cause impacts to prehistoric archaeological sites as a result of the proposed operations in Viosca Knoll Block 912 are physical disturbances to the seafloor and accidents (oil spills).

Physical Disturbances to the seafloor: Although the operations proposed will be conducted by utilizing a dynamically positioned semisubmersible or drillship, which would cause only an insignificant amount of seafloor to be disturbed, Viosca Knoll Block 912 is located inside the Archaeological Prehistoric high probability lines. Talos Petroleum LLC 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 activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Talos Petroleum LLC's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Appendix I**).

There are no other IPFs (including emissions, effluents or wastes sent to shore for treatment or disposal) from the proposed activities which could impact prehistoric archeological sites.

Vicinity of Offshore Location

1. Essential Fish Habitat (EFH)

IPFs that could cause impacts to EFH as a result of the proposed operations in Viosca Knoll Block 912 include effluents and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of Mexico.

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 activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Talos Petroleum LLC's Regional OSRP (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 activities which could impact essential fish habitat.

2. Marine and Pelagic Birds

IPFs that could impact marine birds as a result of the proposed activities include air emissions, accidental oil spills, and discarded trash and debris from vessels and the facilities.

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

Accidents: An oil spill would cause localized, low-level petroleum hydrocarbon contamination. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Marine and pelagic birds feeding at the spill location may experience chronic, nonfatal, physiological stress. It is expected that few, if any, coastal and marine birds would actually be affected to that extent. The activities proposed in this plan will be covered by Talos Petroleum LLC'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 and 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 Petroleum LLC will operate in accordance with the regulations 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. 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 Petroleum LLC management or the designated lease operator management that emphasizes their commitment to waste management in accordance with NTL No. 2015-G03-BSEE. Debris, if any, from these proposed activities will seldom interact with marine and pelagic birds; therefore, the effects will be negligible.

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

3. Public Health and Safety Due to Accidents.

There are no IPFs (emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal or accidents, including an accidental H_2S release) from the proposed activities which could cause impacts to 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 activities be classified by BSEE as H_2S absent.

Coastal and Onshore

1. Beaches

IPFs from the proposed activities that could cause impacts to beaches include accidents (oil spills) 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 (54 miles) and the response capabilities that would be implemented, no significant adverse impacts are expected. The activities proposed in this plan will be covered by Talos Petroleum LLC'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 activities. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and 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 Petroleum LLC will operate in accordance with the regulations 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.

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 Petroleum LLC 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 (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities which could impact beaches.

2. Wetlands

IPFs from the proposed activities that could cause impacts to wetlands include accidents (oil spills) and discarded trash and debris.

Accidents: It is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Due to the distance from shore (54 miles) and the response capabilities that would be implemented, no impacts are expected. The activities proposed in this plan will be covered by Talos Petroleum LLC'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 activities. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and 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 Petroleum LLC will operate in accordance with the regulations 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.

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 Petroleum LLC 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 (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities which could impact wetlands.

3. Shore Birds and Coastal Nesting Birds

Accidents: Oil spills could cause impacts to shore birds and coastal nesting birds. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Given the distance from shore (54 miles) and the response capabilities that would be implemented, no impacts are expected. The activities proposed in this plan will be covered by Talos Petroleum LLC's Regional OSRP (refer to information submitted in **Appendix I**).

Discarded trash and debris: Coastal and marine birds are highly susceptible to entanglement in floating, submerged, and beached marine debris: specifically plastics. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and 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 Petroleum LLC will operate in accordance with the regulations 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.

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 Petroleum LLC 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 (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to shore birds and coastal nesting birds.

4. Coastal Wildlife Refuges

Accidents: An accidental oil spill from the proposed activities could cause impacts to coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed activities (refer to Item 5, Water Quality). Due to the distance from shore (54 miles) and the response capabilities that would be implemented, no impacts are expected. The activities proposed in this plan will be covered by Talos Petroleum LLC'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 Petroleum LLC will operate in accordance with the regulations 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.

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 Petroleum LLC 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 (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to coastal wildlife refuges.

5. Wilderness Areas

Accidents: An accidental oil spill from the proposed activities could cause impacts to wilderness areas. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Due to the distance from the nearest designated Wilderness Area (70 miles) and the response capabilities that would be implemented, no significant adverse impacts are expected. The activities proposed in this plan will be covered by Talos Petroleum LLC'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 Petroleum LLC will operate in accordance with the regulations 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.

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 Petroleum LLC 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 (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to wilderness areas.

6. Other Environmental Resources Identified

There are no other environmental resources identified for this impact assessment.

(C) IMPACTS ON PROPOSED ACTIVITIES

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

(D) ENVIRONMENTAL HAZARDS

During the hurricane season, June through November, the Gulf of Mexico is impacted by an average of ten tropical storms (39-73 mph winds), of which six become hurricanes (> 74 mph winds). Due to its location in the gulf, Viosca Knoll Block 912 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 activities 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 activities. Therefore, a list of such entities has not been provided.

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(I) REFERENCES

Authors:

American Petroleum Institute (API). 1989. Effects of offshore petroleum operations on cold water marine mammals: a literature review. Washington, DC: American Petroleum Institute. 385 pp.

Balazs, G.H. 1985. Impact of ocean debris on marine turtles: entanglement and ingestion. In: Shomura, R.S. and H.O. Yoshida, eds. Proceedings, Workshop on the Fate and Impact of Marine Debris, 26-29 November 1984, Honolulu, HI. U.S. Dept. of Commerce. NOAA Tech. Memo. NOAA-TM-NMFS-SWFC-54. Pp 387-429.

Burke, C.J. and J.A. Veil. 1995. Potential benefits from regulatory consideration of synthetic drilling muds. Environmental Assessment Division, Argonne National Laboratory, ANL/EAD/TM-43.

Daly, J.M. 1997. Controlling the discharge of synthetic-based drilling fluid contaminated cuttings in waters of the United States. U.S. Environmental Protection Agency, Office of Water. Work Plan, June 24, 1997.

Hansen, D.J. 198l. The relative sensitivity of seabird populations in Alaska to oil pollution. U.S. Dept. of the Interior, Bureau of Land Management, Alaska OCS Region, Anchorage. BLM-YK-ES-81-006-1792.

Laist, D.W. 1997. Impacts of marine debris: entanglement of marine life in marine debris including a comprehensive list of species with entanglement and ingestion records. In: Coe, J.M. and D.B. Rogers, eds. Marine debris: sources, impacts, and solutions. New York, NY: Springer-Verlag. Pp. 99-139.

Majors, A.P. and A.C. Myrick, Jr. 1990. Effects of noise on animals: implications for dolphins exposed to seal bombs in the eastern tropical Pacific purse-seine fishery–an annotated bibliography. NOAA Administrative Report LJ-90-06.

Marine Mammal Commission. 1999. Annual report to Congress – 1998.

Piatt, J.F., C.J. Lensink, W. Butler, M. Kendziorek, and D.R. Nysewander. 1990. Immediate impact of the Exxon Valdez oil spill on marine birds. The Auk. 107 (2): 387-397

Vauk, G., E. Hartwig, B. Reineking, and E. Vauk-Hentzelt. 1989. Losses of seabirds by oil pollution at the German North Sea coast. Topics in Marine Biology. Ros, J.D, ed. Scient. Mar. 53 (2-3): 749-754.

Vermeer, K. and R. Vermeer, 1975 Oil threat to birds on the Canadian west coast. The Canadian Field-Naturalist. 89:278-298.

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

- Hazard Surveys
- BOEM EIS's:
  - GOM Deepwater Operations and Activities. Environmental Assessment. BOEM 2000-001
  - GOM Central and Western Planning Areas Sales 166 and 168 Final Environmental Impact Statement. BOEM 96-0058.

SECTION R
ADMINISTRATIVE INFORMATION

(a) Exempted Information Description

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

(b) Bibliography

- AUV Archaeological Investigation, Viosca Knoll Blocks 911, 912, 867, 868 prepared by Echo Offshore LLC, November 2019.
- 3D Geohazard Assessment, Viosca Knoll Block 912 prepared by Echo Offshore LLC, November 2019.