UNITED STATES GOVERNMENT
MEMORANDUM

March 13, 2024

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

Subject: Public Information copy of plan

Control #	-	S-08141
Type	-	Supplemental Exploration Plan
Lease(s)	-	OCS-G24101 Block - 726 Mississippi Canyon Area
Operator	-	Hess Corporation
Description	-	Subsea Well EX002
Rig Type	-	Not Found

Attached is a copy of the subject plan.

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

Nawaz Khasraw
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
WELL/EX002	G24101/MC/726	4281 FNL, 4052 FWL	G24101/MC/726

PUBLIC COPY
January 2024

SUPPLEMENTAL EXPLORATION PLAN

Mississippi Canyon Blocks 726
OCS-G 24101
Esox West Prospect
Affected States: Louisiana / Mississippi

Estimated Startup Date: August 1, 2024

SUBMITTED BY:
Hess Corporation
1501 McKinney Street
Houston, Texas 77010
Brittany Gill
(713) 775-7817
bgill@hess.com

AUTHORIZED REPRESENTATIVE:
Kelley Pisciola
J. Connor Consulting, Inc.
19219 Katy Freeway, Suite 200
Houston, Texas 77094
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SECTION 1
PLAN CONTENTS

1.1 PLAN INFORMATION

Hess Corporation (Hess) is the designated operator of Mississippi Canyon (MC) Block 726, Lease OCS-G 24101.

An Initial Exploration Plan (EP), Control No. N-8488 was approved by your office on August 12, 2005. Subsequently, your office approved Supplemental EP, Control No. S-6913 on July 14, 2006, Supplemental EP, Control No. S-7558 on June 19, 2012 and Revised EP, Control No. R-6839 on July 26, 2019.

Under this Supplemental EP, Hess proposes to drill and complete Well Location EX002. The well will be drilled from a surface location in MC 726 to a proposed bottom hole located in MC 726.

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

The well will be drilled with a dynamically positioned MODU and is located in approximately 4,568 feet of water.

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

1.2 LOCATION

A Well Location Plat depicting the surface location and water depth of the proposed well is included as **Attachment 1-B**.

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

1.3 SAFETY AND POLLUTION PREVENTION FEATURES

Hess proposes to drill the well with a dynamically positioned MODU which is equipped with a Subsea BOP. Once a rig is determined, BOP information and schematics will be included as a part of the Application for Permit to Drill.

The rig will be equipped with safety and fire-fighting equipment required to comply with United States Coast Guard (USCG) regulations. Appropriate lifesaving equipment such as life rafts, life jackets, ring buoys, etc. as prescribed by the USCG, will be maintained on the rig at all times.

Safety features on the drilling unit will include well control, pollution prevention, and blowout prevention equipment as described in BSEE regulations 30 CFR 250 C, D, E, O, Q and S; and as further clarified by BSEE Notices to Lessees, and current policy making invoked by the BSEE, Environmental Protection Agency (EPA) and the USCG.

Pollution prevention measures include installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all contaminants and debris. Compliance will be maintained with the EPA NPDES Permit. The rig will be monitored daily and any waste or fuel resulting in pollution of the Gulf waters will be reported to the representative in charge for immediate isolation and correction of the problem. All spills will be reported to the appropriate governmental agencies.

1.4 STORAGE TANKS AND PRODUCTION VESSELS

The table below provides storage tanks with capacity of 25 barrels or more that will store fuels, oil and lubricants.

Type of Storage Tank	Type of Facility	Tank Capacity (bbl)	Number of Tanks	Total Capacity (bbl)	Fluid Gravity (API)
Fuel oil (marine diesel)	Drillship	5,000	6	30,000	33°

1.5 POLLUTION PREVENTION MEASURES

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

1.6 ADDITIONAL MEASURES

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

1.7 COST RECOVERY FEE

Documentation of the $4,348.00 cost recovery fee payment is included as **Attachment 1-C.**

ATTACHMENT 1-A

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

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

OCS PLAN INFORMATION FORM

General Information

Type of OCS Plan:	XX	Exploration Plan (EP)		Development Operations Coordination Document (DOCD)	
Company Name: Hess Corporation			BOEM Operator Number: 00059		
Address: 1501 McKinney Street			Contact Person: Kelley Pisciola		
Houston, Texas 77010			Phone Number: 281.698.8519		
			E-Mail Address: kelley.pisciola@jccteam.com		
If a service fee is required under 30 CFR 550.125(a), provide the		Amount paid	$4,348.00	Receipt No.	27AUD0M4

Project and Worst-Case Discharge (WCD) Information

Leases:	Area:	Blocks:	Project Name (If Applicable):
OCS-G 24101	Mississippi Canyon	726	Esox West

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

Platform / Well Name: EX002	Total Volume of WCD: 62,460,540 bbls	API Gravity: 37-39°
Distance to Closest Land (Miles): 55	Volume from uncontrolled blowout: 347,003 BOPD	

Have you previously provided information to verify the calculations and assumptions for your WCD?	XX	Yes		No
If so, provide the Control Number of the EP or DOCD with which this information was provided	R-6739 (DOCD)			
Do you propose to use new or unusual technology to conduct your activities?		Yes	XX	No
Do you propose to use a vessel with anchors to install or modify a structure?		Yes	XX	No
Do you propose any facility that will serve as a host facility for deepwater subsea development?		Yes	XX	No

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

Proposed Activity	Start Date	End Date	No. of Days
Drill, Complete/Abandon Well EX002	August 1, 2024	February 16, 2025	200 days

Description of Drilling Rig

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

Drilling Rig Name (If known): TBD

Description of Structure

Description of Lease Term Pipelines

From (Facility/Area/Block)	To (Facility/Area/Block)	Diameter (Inches)	Length (Feet)

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

Proposed Well/Structure Location

Well or Structure Name/Number (If renaming well or structure, reference previous name): EX002					Previously reviewed under an approved EP or DOCD?		Yes	XX	No
Is this an existing well or structure?		Yes	X	No	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?						XX	Yes		No

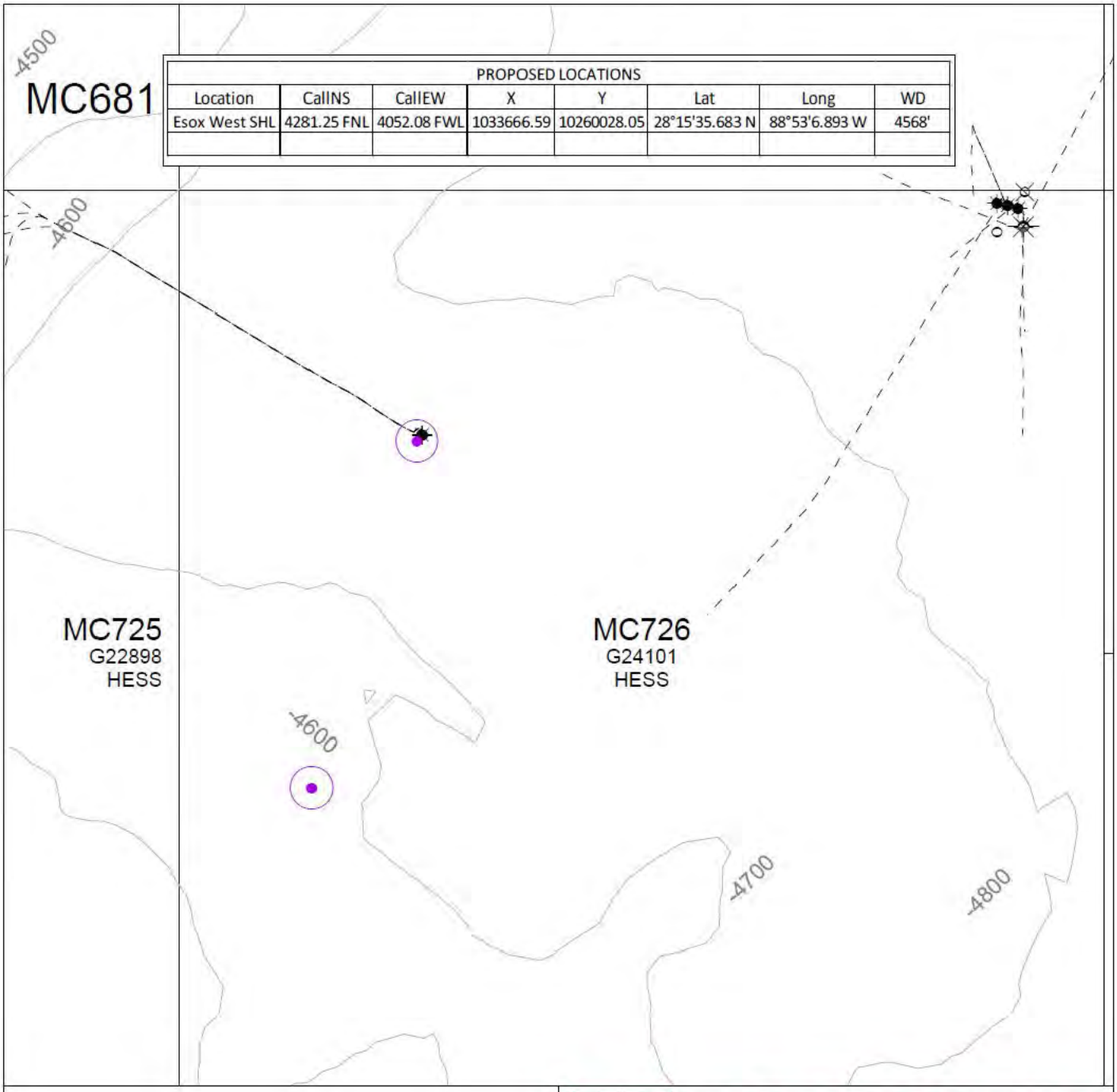
WCD Info	For wells, volume of uncontrolled blowout (Bbls/Day): 347,003 bbls/day	For structures, volume of all storage and pipelines (Bbls):	API Gravity of fluid	37-39°

	Surface Location	**Bottom-Hole Location (For Wells)**	**Completion (For multiple completions, enter separate lines)**
Lease No.	OCS-G 24101		OCS OCS
Area Name	Mississippi Canyon		
Block No.	726		
Blockline Departures (in feet)	N/S Departure: 4,281.25’ FNL	N/S Departure:	N/S Departure F __ L N/S Departure F __ L N/S Departure F __ L
	E/W Departure: 4,052.08’ FWL	E/W Departure:	E/W Departure F __ L E/W Departure F __ L E/W Departure F __ L
Lambert X-Y coordinates	X: 1,033,666.59’	X:	X: X: X:
	Y: 10,260,028.05’	Y:	Y: Y: Y:
Latitude/ Longitude	Latitude: 28° 15’ 35.683” N	Latitude:	Latitude Latitude Latitude
	Longitude: -88° 53’ 6.893” W	Longitude:	Longitude Longitude Longitude

Water Depth (Feet): 4,568’	MD:	TVD:	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 LOCATIONS							
Location	CallNS	CallEW	X	Y	Lat	Long	WD
Esox West SHL	4281.25 FNL	4052.08 FWL	1033666.59	10260028.05	28°15'35.683 N	88°53'6.893 W	4568'

HESS CORPORATION

EXPLORATION PLAN
BLOCK 726
MISSISSIPPI CANYON AREA
GULF OF MEXICO

0 2,000 4,000 FT
1 inch = 1,000 feet

Datum: NAD 1927
Projection: UTM 16 N

Date: 07 Dec 2023

N

ATTACHMENT 1-C

Kelley Pisciola

From: notification@pay.gov
Sent: Thursday, January 11, 2024 1:34 PM
To: Scherie Douglas
Subject: Pay.gov Payment Confirmation: BOEM Exploration Plan - BF

An official email of the United States government

Pay.gov

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

Application Name: BOEM Exploration Plan - BF
Pay.gov Tracking ID: 27AUD0M4
Agency Tracking ID: 76603145899
Transaction Type: Sale
Transaction Date: 01/11/2024 02:34:11 PM EST
Account Holder Name: BRITTANY GILL
Transaction Amount: $4,348.00
Card Type: Visa
Card Number: **********5955

Region: Gulf of Mexico
Contact: Brittany Gill (713) 496-4000
Company Name/No: HESS CORP, 00059
Lease Number(s): 24101
Area-Block: Mississippi Canyon MC,726
Surface Locations: 1

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 2
GENERAL INFORMATION

2.1 APPLICATIONS AND PERMITS

The table below provides all additional applications to be filed covering operations proposed in this EP.

Application/Permit	Issuing Agency	Status
Application for Permit to Drill	BSEE	Pending
Application for Permit to Modify	BSEE	Pending
Emergency Evacuation Plan	USCG	Pending

2.2 DRILLING FLUIDS

In accordance with BOEM guidance, the information required under this section has been incorporated into the Waste and Discharge tables included as **Attachments 6-A and 12-A**.

2.3 NEW OR UNUSUAL TECHNOLOGY

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

2.4 BONDING STATEMENT

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

2.5 OIL SPILL FINANCIAL RESPONSIBILITY (OSFR)

Hess Corporation (Company No. 00059) has demonstrated oil spill financial responsibility for the facilities proposed in this EP according to 30 CFR 553.15 (a); and NTL No. 2008-N05, "Guidelines for Oil Spill Financial Responsibility for Covered Facilities".

2.6 DEEPWATER WELL CONTROL STATEMENT

Hess Corporation (Company No. 00059) has the financial capability to drill a relief well and conduct other emergency well control operations.

2.7 BLOWOUT SCENARIO AND WORST CASE DISCHARGE CALCULATIONS

In accordance with the requirements outlined in NTL No. 2015-BOEM-N01, “Information Requirements for Exploration Plans, Development and Production Plans, and Development Operations Coordinator Documents on the OCS for Worst Case Discharge and Blowout Scenarios", the following information is provided:

The scenario that presents the potential worst-case discharge rate for the proposed wellbore is expected to occur when the drill string has been pulled from the hole after having drilled the 12.25” open hole section through the objective sand. It is assumed the well has experienced a kick and attempts at initiating shut-in procedures have failed, thus rendering the BOPs ineffective. This situation presents an unrestricted flow of hydrocarbons to surface with an initial flow rate of 347,003 BOPD as previously approved under R-DOCD (Control No. R-6739) within the first 24-hour period.

In the event of a worst-case discharge situation, there will be some gradual depletion in the reservoir. As a result, the well will gradually decline in production based on the transient reservoir model. The reported worst-case discharge is based on these model assumptions rather than the WCD rate multiplied by the estimated relief well days.

Estimated Flow Rate of the Potential Blowout

Category	
Type of Activity	Drilling
Facility Location	MC 726 (Surface Location)
Facility Designation	MODU
Distance to Nearest Shoreline	55 miles
Uncontrolled Blowout	347,003 bbls/day
Type of Fluid	Crude/Condensate

Maximum Duration of the Potential Blowout

Duration of Flow (Days)	180 days
Total Volume of Spill (bbls)	~62MMSTB

Potential of Wellbore to Bridge Over During a Blowout:
There is potential for the wellbore to bridge over during the WCD blowout. However, there is little internal data to definitively support such an assumption. If any water zones are exposed, this will accelerate wellbore collapse and bridging.

Discussion of Likelihood for Surface Intervention to Stop Blowout:
The well will be drilled as a subsea well in approximately 4,568' of water with the wellhead and BOP equipment located at the mudline. Surface intervention would be the preferred method of intervention pending an uncontrolled blowout; however, the technique used would be contingent upon the condition of the rig, marine riser system and BOP equipment. Surface intervention is a quicker solution than drilling a relief well, but actual methodology of controlling the blowout would have to be determined pending an analysis of the site-specific conditions at the location.

A team of specialists would be mobilized immediately to assess the situation and determine a corrective course of action to control the blowout. Well control specialists would perform either a fly-by via helicopter and/or surface vessel to assess conditions at the site. Hess Corporation has Master Service Agreements with Wild Well Control and Boots and Coots. An ROV spread capable of manipulating the rig's BOP hot-stab functions would be mobilized to location and, if appropriate, an attempt would be made to shut in the well by closing the blind shear rams. These actions would take place within 24-48 hours of the incident. Initial assessment activities are projected to take 3-5 days. During this period, the well control team would analyze the blowout situation, devise an intervention strategy and mobilize additional service company specialists, supplies and equipment. A field support base in Fourchon, LA and secondary command center near the coast would be arranged and would have communication established simultaneously during this assessment period.

Discussion of the Likelihood of Subsea Intervention to Stop the Blowout:
Subsea interference would be the likely method of intervention pending an uncontrolled blowout, however; the technique used would be contingent upon the condition of the rig, marine riser system and BOP equipment. An ROV may be used to shift the blind/shear rams in the BOP stack

to the closed position, thereby allowing the damaged riser system to be removed and a capping mechanism to be put in place, if applicable. Hess Corporation has a contract in place with Marine Well Containment Company (MWCC). In the event of a blowout, a capping stack may be mobilized to the location. If discharge is occurring at a rate that prevents the well from being shut in, hydrocarbon collection at the source would occur during relief well drilling operations.

Discussion of Drilling a Relief Well:
Hess Corporation (Company No. 00059) has the financial capability to drill a relief well and conduct other emergency well control operations. Should a relief well be necessary, there are rigs rated and equipped to drill in water depths of 4,000' or greater currently working in the Gulf of Mexico. Travel time to the location would be dependent upon current operations of the rig and the distance to the well location. The time required to drill the relief well will be dependent on many factors, chief among them is the required depth of the relief well. The deepest anticipated depth of the relief well would be in the situation where it was required to intersect the blown-out well at its final target depth. The probable directional nature of the relief well could nominally increase its measured depth compared to the blown-out well. In order to intersect the blown out well, numerous ranging runs will be required which will add approximately three weeks to the drilling programs. The steps and time required to accomplish the dynamic kill are also dependent on the particular circumstances of the blown-out well.

Example Relief Well Timetable	
Activity	**Duration (Days)**
Assess the situation and choose the optimum rig	2
Secure that rig's current well	10
Travel time	3
Drill the relief well	133
Intersect the blown out well	20
Dynamically kill the well	12
TOTAL ANTICIPATED DAYS: 180	

It is assumed that a rig is not immediately available to mobilize to location to commence drilling a relief well. The estimated mobilization time of a rig to the wellsite location incorporates the suspension of activities by another operator before the rig can be released for relief well operations. Hess will support relief well drilling operations using in-house resources supplemented with diversified engineering consulting firms who would provide drilling operations, engineering, logistical and materials management; QA/QC and wellsite supervision support. In addition, Hess will select a well control specialty company and prepare a conceptual "Relief Well Plan" specific to the well. The plan will address the calculated blowout rate, selection of surface location, directional planning intercept strategy and dynamic kill design. Casing design, directional drilling, trajectory planning and magnetic ranging techniques, as well as multiphase simulation of the blowout will be considering factors in planning the relief well.

Rig Package Constraints:

- The rig chosen to drill the relief well must be capable of operating in water depths of 4,000 feet of water or greater.
- The rig chosen to drill the relief well must have a BOP package acceptable and certified. under current BOEM/BSEE regulations.
- The rig chosen should have managed pressure drilling (MPD) capability.

- There are no facilities within the surrounding area of well locations; therefore, a relief well will be unable to be drilled from a nearby platform.
- Due to proximity to shore (~55 miles) a relief well cannot be drilled from an onshore location.

Potential Rigs Capable of Drilling a Relief Well:

Contractor	Rig	MPD Capable	Current Operator
Transocean	Deepwater Invictus	Yes	Warm stacked
Diamond Ocean	Black Hornet	Yes	BP
Diamond Ocean	Black Lion	Yes	BP
Stena Drilling	IceMax	Yes	BP
Valaris	Rowan Relentless DS 18	Yes	Chevron
Valaris	Rowan Relentless DS 16	Yes	Occidental Petroleum
Transocean	Deepwater Conqueror	Yes	Chevron
Noble	Globetrotter II	Yes	Shell
Transocean	Deepwater Pontus	Yes	Shell
Transocean	Deepwater Poseidon	Yes	Shell
Transocean	Deepwater Proteus	Yes	Shell
Transocean	Deepwater Thalassa	Yes	Shell
Transocean	Titan	Yes	Chevron

There are currently 13 individual rigs currently working in the Gulf of Mexico that could be capable of drilling a relief well at this location.

SECTION 3
GEOLOGICAL AND GEOPHYSICAL INFORMATION

3.1 GEOLOGICAL DESCRIPTION
Proprietary Copy.

3.2 STRUCTURE CONTOUR MAP
Proprietary Copy.

3.3 INTERPRETED SEISMIC LINES
Proprietary Copy.

3.4 GEOLOGICAL STRUCTURE CROSS-SECTIONS
Proprietary Copy.

3.5 SHALLOW HAZARDS REPORT
A Shallow Hazards Survey was previously conducted and submitted to BOEM.

3.6 SHALLOW HAZARDS ASSESSMENT
In accordance with NTL No. 2008-G05, “Shallow Hazards Program,” a site-specific shallow hazards assessment has been prepared for the proposed surface location evaluating seafloor and subsurface geological and manmade features and conditions that may adversely affect drilling operations. The shallow hazards assessment and archaeological assessment is included as **Attachment 3-D**.

3.7 HIGH-RESOLUTION SEISMIC LINES
Annotated high-resolution survey lines closest to the proposed well location are included as **Attachment 3-D**.

3.8 STRATIGRAPHIC COLUMN
Proprietary Copy.

3.9 TIME VERSUS DEPTH TABLES
Proprietary Copy.

GEOSCIENCE EARTH & MARINE SERVICES, INC.
A Geosyntec Company

15810 Park Ten Place, Suite 100
Houston, Texas 77084
832.603.4352
www.geosyntec.com

December 15, 2023

Project No.: 1123-3225

Hess Corporation
1501 McKinney Street
Houston, Texas 77010

Attention: Aurélie Justwan, PhD

Site Clearance Letter,
Proposed Wellsite MC 726 EX002,
Block 726 (OCS-G-24101),
Mississippi Canyon Area,
Gulf of Mexico

Hess Corporation (Hess) contracted Geoscience Earth & Marine Services (GEMS), a Geosyntec Consulting Company, to provide an assessment of the seafloor and shallow geologic conditions to determine the favorability of drilling operations for the proposed location MC 726 EX002, whose surface location is in Block 726 (OCS-G-24101), Mississippi Canyon Area (MC), Gulf of Mexico. This letter addresses specific seafloor and subsurface conditions around the proposed location to the Top of Salt, a depth of 5,494 ft below the mudline (bml).

Seafloor conditions appear favorable within the vicinity of the proposed surface location. There are no potential sites for deepwater benthic communities or culturally significant contacts within 2,000 ft. There is a Negligible to High potential for encountering overpressured sands and a Negligible to Moderate potential for shallow gas within the Limit of Investigation based on offset well information. This letter provides details specific to the well location, including available data, Notice to Lessees (NTL) requirements, man-made features, and wellsite conditions.

Proposed Well Location

The surface location for the Proposed Wellsite MC 726 EX002 lies in the northwestern quadrant of MC 726. Hess provided the following coordinates:

Table 1. Proposed Location Coordinates

Proposed Wellsite MC 726 EX002			
Spheroid & Datum: Clarke 1866 NAD27 Projection: UTM Zone 16 North		Line Reference	Block Calls (MC 726)
X: 1,033,666.59 ft	Latitude: 28° 15′ 35.6832″ N	Inline 13610	4,067 ft FWL
Y: 10,260,028.05 ft	Longitude: 88° 53′ 06.8934″ W	Crossline 14107	4,292 ft FNL

Hess plans to drill this well using a dynamically positioned drilling vessel. Our assessment addresses the seafloor conditions within a 2,000-ft radius around the proposed wellsite location.

Available Data

The following discussion is based on the findings provided within the main body of two geohazard reports produced by GEMS. The geohazard report "Geologic and Stratigraphic Assessment, Blocks 681, 682, 725, and 726, Mississippi Canyon Area, Gulf of Mexico" (GEMS, 2003) was issued to Hess on June 23, 2003. Geohazard report "Tubular Bells/Kodiak Development Project, Geologic and Stratigraphic Assessment, Blocks 680 to 684, 724 to 728, & 768 to 772, Mississippi Canyon Area, Gulf of Mexico" (GEMS, 2009) was issued to BP America Inc., on April 29, 2009. The Tubular Bells report was a comprehensive assessment that included interpretations of multiple data sets collected over several years, as well as a compilation of information from other reports produced by GEMS. The text, maps, and figures included in these reports provide detail on the regional geology

of the area. This letter is intended to supplement these reports with details pertaining directly to the proposed wellsite.

The primary data set used for this assessment, "002T_TB_PrSTM_HiRes_TGS_07_16bit.sgy", is near-offset 3-D seismic data, acquired in 1999 by GECO for TGS-NOPEC, and reprocessed in 2007 by TGS. Additional data and reports used to formulate interpretations presented in this site clearance letter are as follows:

- AUV high-resolution data over the Tubular Bells "Appraisal" area: Archaeological study in parts of MC 725 and 726, collected by C&C Technologies in 2006 (C&C, 2006),
- AUV high-resolution data over Kodiak and Tubular Bells areas: Archaeological Assessment in Block MC 727 & Vicinity, collected by C&C Technologies in 2007 (C&C, 2007), and
- AUV high-resolution data over Greater Tubular Bells area: Archaeological and Hazards Study – Greater Tubular Bells MC 680-683, MC 724-726, and the northern half of MC 768-770, collected by C&C Technologies in 2007 (C&C, 2008).

Subsurface depths at the proposed wellsite were calculated using the following equation, where x is two-way travel time in milliseconds below the mudline (GEMS, 2009):

$$\text{Depth (feet)} = -6E\text{-}08*x^3 + 0.0006*x^2 + 2.4338*x$$

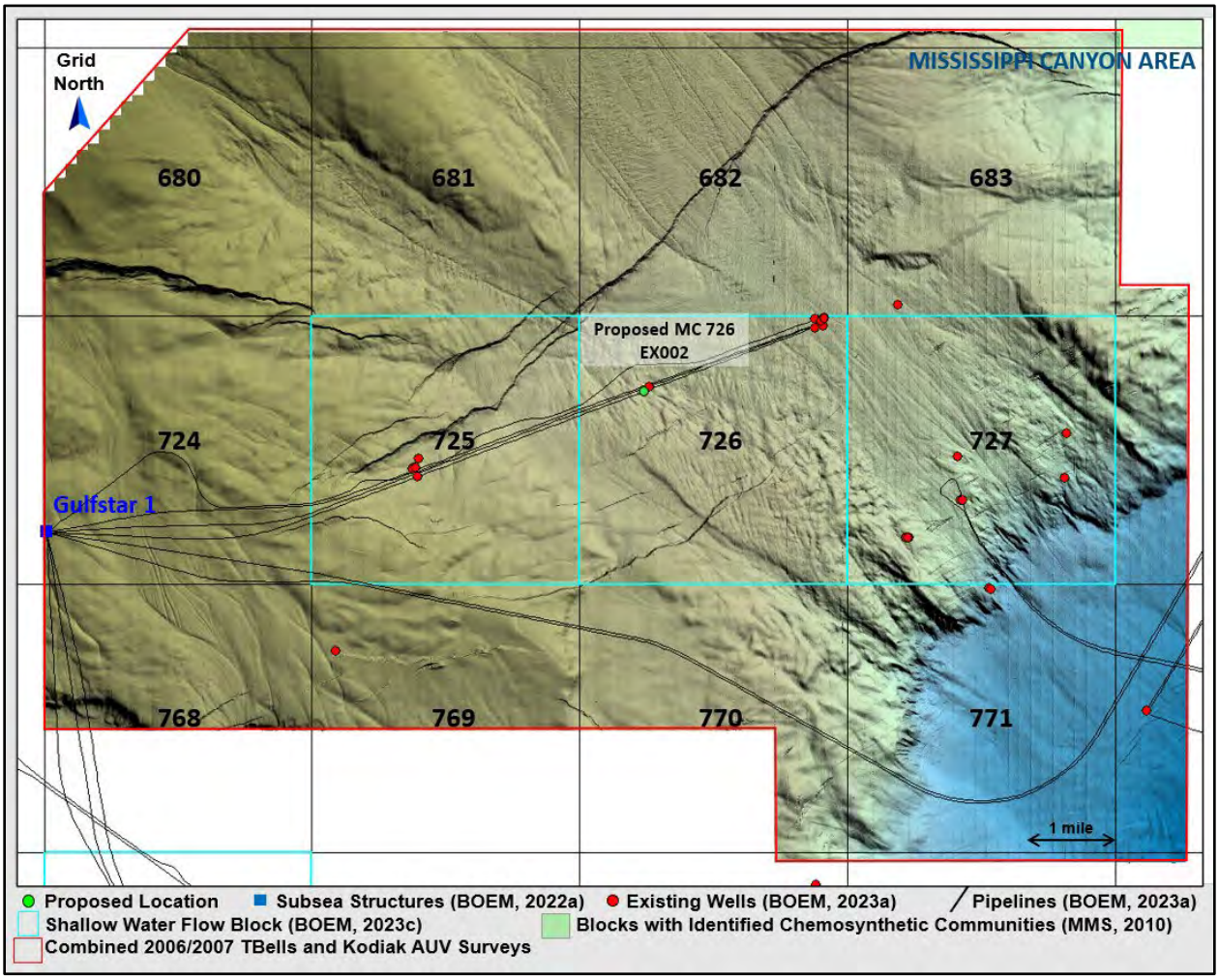


Figure MC 726-EX002-1. Seafloor Rendering of the Mississippi Canyon Survey Area Showing the Location of the Proposed Wellsite MC 726 EX002

Attachments

Wellsite maps are centered on the Proposed Wellsite MC 726 EX002 location and are displayed at a 1 inch = 1,000 ft scale (1:12,000). The maps included in this letter are as follows:

Map No. MC 726 EX002-1:	Bathymetry Map
Map No. MC 726 EX002-2:	Seafloor Features Map
Map No. MC 726 EX002-3:	Side-Scan Sonar Mosaic
Map No. MC 726 EX002-4:	Seafloor Amplitude Rendering
Map No. MC 726 EX002-5:	Geologic Features Map

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

Illustration MC 726 EX002-1:	Subbottom Profiler Line Showing Near-Surface Conditions Beneath Proposed Wellsite MC 726 EX002
Illustration MC 726 EX002-2:	Portions of Inline 13610 and Crossline 14107 Showing Conditions Beneath Proposed Wellsite MC 726 EX002. Surface Location in Mississippi Canyon Area, Block 726.
Illustration MC 726 EX002-3:	Tophole Prognosis Chart, Proposed Wellsite MC 726 EX002. Surface Location in Mississippi Canyon Area, Block 726.

NTL Requirements

The following report complies with the Bureau of Ocean Energy Management (BOEM) Notice to Lessees (NTLs) 2008-G04, 2009-G40, and 2022-G01 (MMS, 2008, 2010, and BOEM, 2022) with respect to benthic community and shallow hazard assessments. MC 726 is not located within a Military Warning Area (BOEM, 2014) or an Ordnance Dumpsite Area.

Mitigation guidelines historically required an archaeological assessment of all surveyed blocks prior to any bottom disturbing activities. An archeological assessment of the area of potential effect around the proposed surface location may be required as per NTL 2005-G07 (BOEM, 2020). C&C Technologies prepared three archaeological assessments in the area to comply with the Archaeological Resource Surveys and Reports requirements. The reports were submitted to BP America, Inc. in May, 2006 and September, 2007 under Project Nos. 8759-061234 and 072456-073011 (C&C, 2006 and 2007) and to Hess in April, 2008 under Project No. 072801-073191 (C&C, 2008).

As specified in NTL 2022-G01 (BOEM, 2022), GEMS extracted the power spectrum diagram from the 3-D seismic dataset provided by Hess at the proposed wellsite (Figure MC 726-EX002-2). The extraction was generated within a 2,000-ft radius of the intersection of the inline and crossline at the proposed wellsite. The extraction time interval consisted of the seafloor to one second below mudline. We converted the amplitude vs. frequency spectrum, generated by the IHS Kingdom software, to power vs. frequency by squaring the amplitude values as described by J. A. Coffeen, 1978. The frequency bandwidth at 50% power ranges from 20 to 65 Hz.

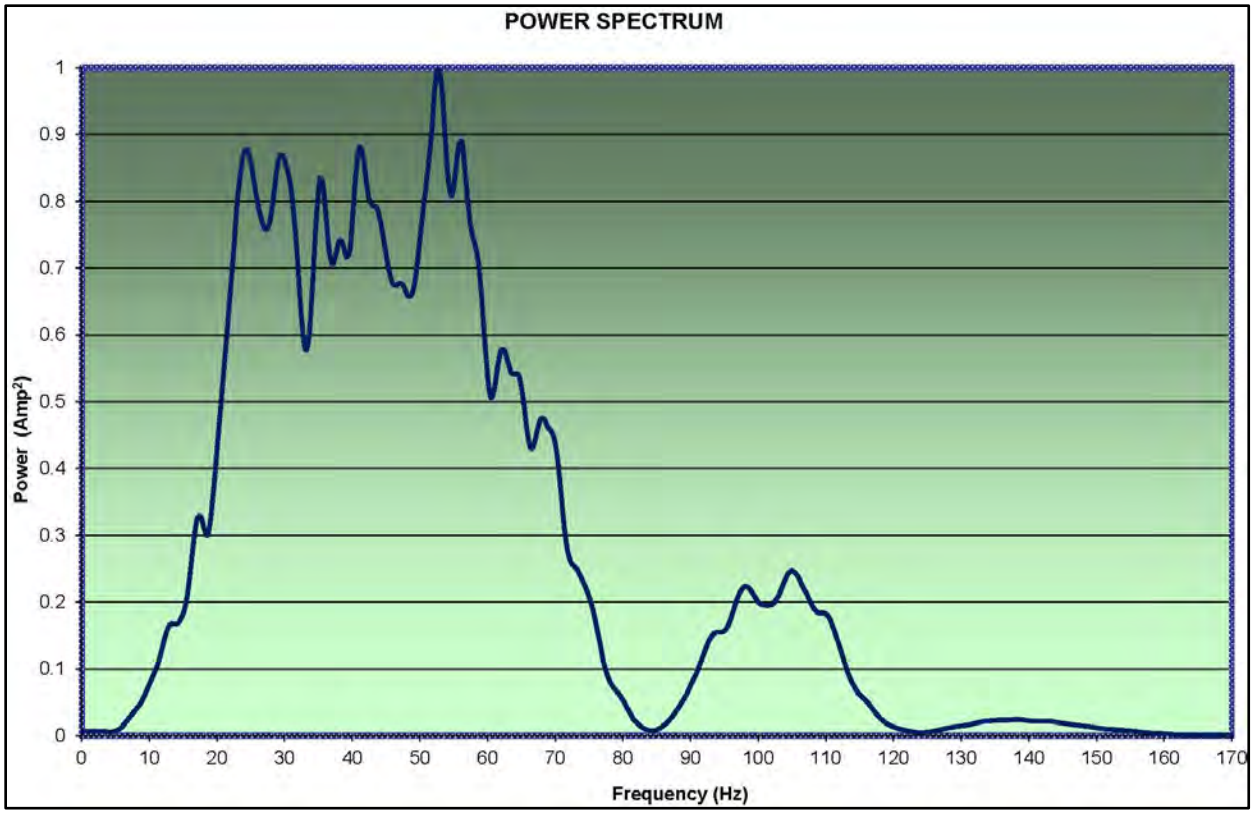


Figure MC 726-EX002-2. Power Spectrum Curve, Proposed Wellsite MC 726-EX002

Man-Made Features

Oilfield infrastructure is present within the Tubular Bells, Kodiak, and surrounding area (Figure MC 726 EX002-1). The infrastructure within 2,000 ft of the proposed MC 726 EX002 location includes one well with supporting subsurface facilities, three pipelines, and two umbilical segments (Tables 2 and 3; Maps MC 726 EX002-1 through -5). The flowlines and umbilical cross through MC 724-726, connecting Hess wells in the northeast corner of MC 726 to the Gulfstar 1 SPAR in southwest MC 724 (Figure MC 726 EX002-1). The proposed well is intended to add to the production infrastructure in the immediate area. Most of the subsurface production infrastructure is within 200 ft of the proposed site. BOEM (2023a) indicates four (4) wells were drilled from a surface location 132 ft NE of the proposed MC EX002 location (Table 2). The initial exploration well (002) has a bottom location in MC 726. This well was followed by 3 side-track wells whose bottom locations are in MC 725. BOEM shapefiles label the surface location as TB006 (Maps MC 726 EX002-1 through 5).

Table 2. Wells Drilled from Surface Location 132 ft NE of the Proposed Location (BOEM, 2023a)

Surface Location	Well Name	Operator	Spud Date	API	OCS Lease No. Bottom Location
MC 726	002	Hess Corporation	04/30/2012	608174121400	OCS-G-24101
MC 726	006	Hess Corporation	09/09/2014	608174121402	OCS-G-22898
MC 726	006	Hess Corporation	09/22/2014	608174121403	OCS-G-22898
MC 726	TB006	Hess Corporation	10/18/2014	608174121404	OCS-G-22898

Table 3. Existing Pipelines and Umbilicals Within 2,000 ft of the Proposed Location (BOEM, 2023a)

Operator	Type	Segment No.	Distance/Direction from Proposed Well
Hess Corporation	8" Bulk Oil – **Active**	SN 18653	225 ft NE
Hess Corporation	8" Bulk Oil – **Active**	SN 18654	120 ft / NE
Hess Corporation	8" H20 - **Active**	SN 18655	65 ft / SE
Hess Corporation	8" Umbilical - **Prop**	SN 18819	310 ft /NNE
Hess Corporation	8" Umbilical - **Active**	SN 18820	1,325 ft N

Archaeological Assessment

Three separate archaeological assessments have been completed in the vicinity of the proposed wellsite (C&C, 2006, 2007, and 2008). The archaeological assessments delineated 16, 19, and 139 unidentified side-scan sonar contacts, respectively. The unidentified contacts are generally small objects interpreted to represent modern debris from shipping, storms, fishing, geologic and exploration activities. There are four unidentified sonar contacts within 2,000 ft of the proposed wellsite (Table 4 and Maps MC 726 EX002-2, -3, and -5). In addition, the northern end of a debris field is designated about 2,000 ft southeast of the proposed location (Maps MC 726 EX002-2, -3, and -5). The debris field was investigated with an ROV in 2008 (AMTI, 2008). The contacts within the field consisted of historic military debris that was supposed to be discarded in the Ordnance Dump Site to the north. The debris is not considered culturally significant but has a 50 ft safety avoidance.

Table 4. Side-Scan Sonar Contacts within 2,000 ft of Proposed Wellsite MC 726 EX002

CONTACT	AREA/BLOCK	LENGTH (FT)	WIDTH (FT)	HEIGHT (FT)	DESCRIPTION	X NAD 27 (FT)	Y NAD 27 (FT)	DISTANCE/DIRECTION FROM SITE
ARCH-5	MC 726	2	1	0	Debris	1,032,830.59	10,261,115.86	1,372 FT / N
ARCH-6	MC 726	2	2	0	Debris	1,032,157.00	10,260,258.05	1,527 FT / WNW
ARCH-7	MC 726	1	1	0	Debris	1,035,388.43	10,259,908.50	1,726 FT / SE
ARCH-8	MC 726	~(109)	~(88)	0	Debris Zone	1,035,246.36	10,259,431.48	1,689 FT / SE

No potential submerged cultural resources were found in the area of potential effect (APE) for the proposed wellsite (C&C, 2006, 2007, and 2008). BOEM's database lists no known archaeological sites within the well's APE. Should any potentially historic materials such as textiles, wood, ceramics, or other items be uncovered during operations in the area, all operations must cease and BOEM be notified within 48 hours.

Wellsite Conditions

The proposed location is clear of any constraining geologic seafloor conditions as defined by the AUV and 3-D seismic data sets. The shallow stratigraphy to the Top of Salt will consist of interbedded hemipelagic clays, slope-fan deposits, turbidites, and mass-transport complexes composed of predominately clays and silts with likely sand layers. Based on the observed drilling conditions of the nearby wells, shallow gas and water flow conditions may be possible within the tophole section.

Water Depth and Seafloor Conditions. The water depth at the proposed surface location is -4,566 ft with slopes of about 2.1˚ to the northeast (Map MC 726 EX002-1). The proposed location is situated within a broad, northwest-southeast trending valley, which was formed by past mass-wasting events (Figure MC 726-EX002-1). The valley is believed to be a late Pleistocene event (i.e., >12,000 yrs B.P., Younes et al., 2005)). The seafloor is slightly hummocky and marked with narrow gully features along the floor of the valley (Map MC 726 EX002-2). The hummocky seafloor is due to the presence of buried mass-transport deposits (MTD). These deposits are buried by at least 60 ft of stratified sediments at the wellsite (Illustration MC 726 EX002-1). A thin (~ 8 ft) MTD interval occurs at about 72 ft bml. The top of a thick MTD occurs at 87 ft bml. The subbottom profiler data does not define the base of the thick MTD (Illustration MC 726 EX002).

The numerous seafloor gullies are typically low relief features that trend downslope toward the axes of the valley trough. Like the mass-wasting events, the formation of the gullies and most recent activity was likely late Pleistocene. The large slope valley is no longer considered an active pathway for large amounts of sediment to be transported downslope and, based on the geophysical data provided, the present-day seabed and near-surface sediments are stable and not prone to failure.

The generally low side-scan sonar reflectivity and seafloor amplitude response in the vicinity of the proposed wellsite suggests the seabed is covered by soft clays or silty-clays (Maps MC 726 EX002-3 and -4).

Deepwater Benthic Communities. Federal lease Block MC 726 or the adjacent blocks are not designated as having high-density deepwater benthic communities (MMS, 2010). No features or areas were interpreted within 2,000 ft of the proposed location that are capable of supporting high-density chemosynthetic or other deepwater benthic communities (Map MC 726 EX002-2 through -5).

The Side-Scan Sonar Mosaic and Seafloor Amplitude Rendering (Maps MC 726-EX002-3 and -4) show normal or ambient returns along the seabed with no indication of any hard-bottom conditions within 2,000 ft of the proposed well. Additionally, BOEM does not list any areas of seafloor seep anomalies within 2,000 ft of the proposed location (BOEM, 2023b).

Stratigraphy. Stratigraphic conditions are shown on Illustrations MC 726 EX002-1 through MC 726 EX002-3. The Tophole Prognosis Chart (Illustration MC 726-EX002-3) shows the 3-D seismic inline, annotated with calculated depths to the horizons and predicted lithology of the sequences, along with their potential for shallow gas and shallow water flow. Seven horizons (Horizons 40, 50, 60, 70, 80, 100, and 110) and the Top of Salt were mapped within the Limit of Investigation in the previous geohazard assessments. MC 726-002 (API 608174121400) is only 132 ft northeast of the proposed location. Specific geologic information from well logs and mud logs collected at the MC 726-002 was related to GEMS by Hess. This information was incorporated in the lithostratigraphic description of the various sequences. The seismic facies between the proposed MC 726 EX002 location and the MC 726-002 well is consistent, and we expect very similar conditions between the boreholes.

The subbottom profiler data define the upper approximate 100 ft of section beneath the mudline around the proposed wellsite, which correlates to the upper half of Unit 1 as defined on the 3-D seismic profiles (Illustrations MC 726-EX002-1 and -3). The uppermost 17 ft of sediment (Seafloor to Horizon 10) is a hemipelagic drape consisting of soft, high water content clays or silty-clays (Illustration MC 726-EX002-1). Beneath the drape to Horizon 30 at about 60 ft bml, are alternating bedded hemipelagic clays, silty-clays, and silts followed by interbedded thin clay-rich mass-transport deposits through the remainder of Unit 1 (to 225 ft bml). A thin MTD occurs at about 72 ft bml followed by a thick MTD at 87 ft bml. Mass-transport deposits often contain dewatered clays, which could be stiffer than a normal shallow sediment profile. Stiff layers and slow jetting were reported at about 250 ft bml for Hess' #2 well in MC 683; however, no known issues were reported during jetting operations from the well adjacent to the proposed location (Map MC 726-EX002-1).

Unit 2 is defined on the 3-D seismic profiles by Horizon 40 and Horizon 50 (225 ft to 676 ft bml). The upper portion of Unit 2, from 225 ft to 540 ft bml, is likely composed of layered clays and silty-clays grading to clay-prone mass-transport deposits. The sediments from 540 ft bml to Horizon 50 (676 ft bml), are primarily stratified clays and fine-grained turbidites with occasional thin mass-transport deposits.

Unit 3 (Horizon 50 to Horizon 60, 676 ft to 1,197 ft bml) is a regional, sand-prone, slope-fan complex, designated as the Blue Unit. Shallow water flow from this unit has been documented within this portion of the Mississippi Canyon Area. The slope-fan deposits contain layered and chaotic seismic facies that are likely sand-rich. The fan unit is separated by thick mud/shale units.

Unit 4 (Horizon 60 to Horizon 70), from 1,197 ft to 1,876 ft bml, consists primarily of low-amplitude stratified to discontinuous reflectors. This seismic character suggests these sediments are likely clay-rich turbidites and mass-transport deposits. Some thin sands may be encountered.

Unit 5 (Horizon 70 to Horizon 80, 1,876 ft to 2,948 ft bml) is the chaotic sand-prone, slope-fan unit designated as the Green Unit. The Green Unit contains slope-fan and channel complexes, as well as slumped deposits from mass wasting. A mixture of sands, silts, and clays are expected within Unit 5.

Generally chaotic low-amplitude reflectors comprise Unit 6 (Horizon 80 to Horizon 100), from 2,948 ft to 3,931 ft bml. These sediments are likely fine-grained turbidites and mass-transport deposits with some sands. Sands up to 100 ft thick were encountered just above the Purple Unit at Hess' #EX001 well in the northeast corner of MC 726 (Anthony Romanoski, personal communication, July 6, 2015). Sand-rich facies may be encountered at the proposed well between 2,948 ft and 3,931 ft bml.

Unit 6a (Horizon 100 to Horizon 110, 3,931 ft to 4,513 ft bml) is designated as the Purple Unit. This sand-prone, slope-fan unit consists of low-amplitude reflectors composed of interlayered clays, silts, and sands with some fine-grained turbidites and mass-transport deposits.

Unit 6b (Horizon 110 to the Top of Salt, 4,513 ft to 5,494 ft bml) consists of low-amplitude, chaotic reflectors. These sediments are likely clay-rich, mass-transport deposits interbedded with thin turbidites, although some sands are possible. These sediments have been heavily disturbed due to the emplacement of the shallow salt body. The MC 726-002 well experienced shallow water flow near the top of this unit

Faults. The proposed wellsite will not encounter any seafloor faults. The nearest seafloor fault is located approximately 2,500 ft southeast of the proposed wellsite (Map MC 726 EX002-2). The fault trends southwest to northeast and is downthrown to the southeast. The proposed location will intersect two buried faults (Illustrations MC 726 EX002-2 and 3). The first fault is near the top of Unit 6a at a depth of 4,013 ft bml. The second fault is in Unit 6b just above the Top of Salt at 5,231 ft bml. Additional faults may be encountered that are beneath the resolution of the 3-D seismic data, particularly below Horizon 70 (1,876 ft bml). Faults may be zones of circulation loss along the wellbore.

Shallow Gas and Shallow Water Flow. The potential for encountering shallow gas at this wellsite ranges from Negligible to Moderate (Illustration MC 726 EX002-3). The potential for shallow water flow varies from Negligible to High (Illustration MC 726-EX002-3).

Shallow Gas. There are no apparent high-amplitude anomalies or other direct hydrocarbon indicators directly below the proposed wellsite. The nearest mapped amplitude anomaly is located 185 ft to the southeast (Map MC 726 EX002-5). The event is associated with scattered moderate-amplitude reflectors at about 2,000 ft bml within an interval of stratified, turbidite reflections near the top of Unit 5, the Green Unit (Illustrations MC 726 EX002-2 and -3). The amplitude signature of the mapped event is not anomalously high, and the event does not contain other hydrocarbon indicators that would be associated with significant gas accumulations. Gas was not reported while drilling through this interval within the nearby well. Unit 5 from 1,876 to 2,948 ft bml has a Moderate potential for shallow gas.

Additional, very small amplitude anomalies are mapped in Units 6 and 6b about 785 ft west-northwest and 550 ft south-southeast from the proposed well (Map MC 726-EX002-5). Minor gas shows were reported through these intervals within the nearby well. These units have a Moderate potential for shallow gas.

There is a Low potential for encountering shallow gas within the Blue Unit between 676 ft and 1,197 ft bml and within Unit 4 (1,197 to 1,876 bml), Illustration MC 726 EX002-3.

Units 1 and 2 (seafloor to 676 ft bml) are designated with a Negligible potential for shallow gas.

Shallow Water Flow. Shallow water flows (SWF) have been documented in MC 726 and adjacent blocks (Table 5 and Figure MC 726 EX002-3). The overpressured sands originated from three sand-prone, slope-fan units identified as the Blue (Unit 3, Horizon 50 to Horizon 60), Green (Unit 5, Horizon 70 to Horizon 80), and Purple (Unit 6a, Horizon 100 to Horizon 110), Illustration MC 726 EX002-3. The proximity of the flows, as well as the seismic reflection characteristics of the flow units at the proposed wellbore, result in Moderate to High probabilities that shallow water flow may be encountered within these units.

Table 5 lists the known wells near proposed wellsite MC 726 EX002 that have experienced shallow water flow. The shallow water flow locations and depths are from a combination of data accessed from BOEM's safety performance review (BOEM, 2023c), from well data received while completing previous projects in the area, and personal communication with Hess representatives. Figure MC 726-EX002-3 illustrates the known shallow water flow locations within the immediate area.

Table 5. Known Shallow Water Flow Wells Within the Tubular Bells and Kodiak Areas

Operator	Well Name	Depth of Flow [ft, bml]	Severity	Spud Date	Distance from Proposed Wellsite	SWF Source Unit
*Hess	#1 (TB2) (SL: MC 726)	549-1,125 and 1,655-2,753	Very Slight to Slight	12/31/2006	~2 miles NE	Blue & Green
Hess	#EX001 (SL: MC 726)	2,940	Low	06/10/2012	~2 miles NE	†Purple
**Hess	#002 (608174121400) (SL: MC 726)	4,880	?	10/18/2014	132 ft NE	Purple
*Chevron	#1 (SL: MC 727)	1,499	Severe	08/21/2000	4.7 miles E-SE	Green
*Kosmos	#1 (SL: MC 727)	2,122 and 2,189-3,089	Very Slight	11/04/2008	4.9 miles SE	Green
*Hess	#1 (TB1) (SL: MC 725)	1,102 and 1,433	Slight to Low	05/22/2003	2.7 miles SW	Blue

Note: SL = Surface Location
** Shallow water flow locations and depths are from personal communication in 2009*
*** Shallow water flow location is from personal communication with Hess in 2015 and 2023*
†*SWF reported just above Purple Unit*

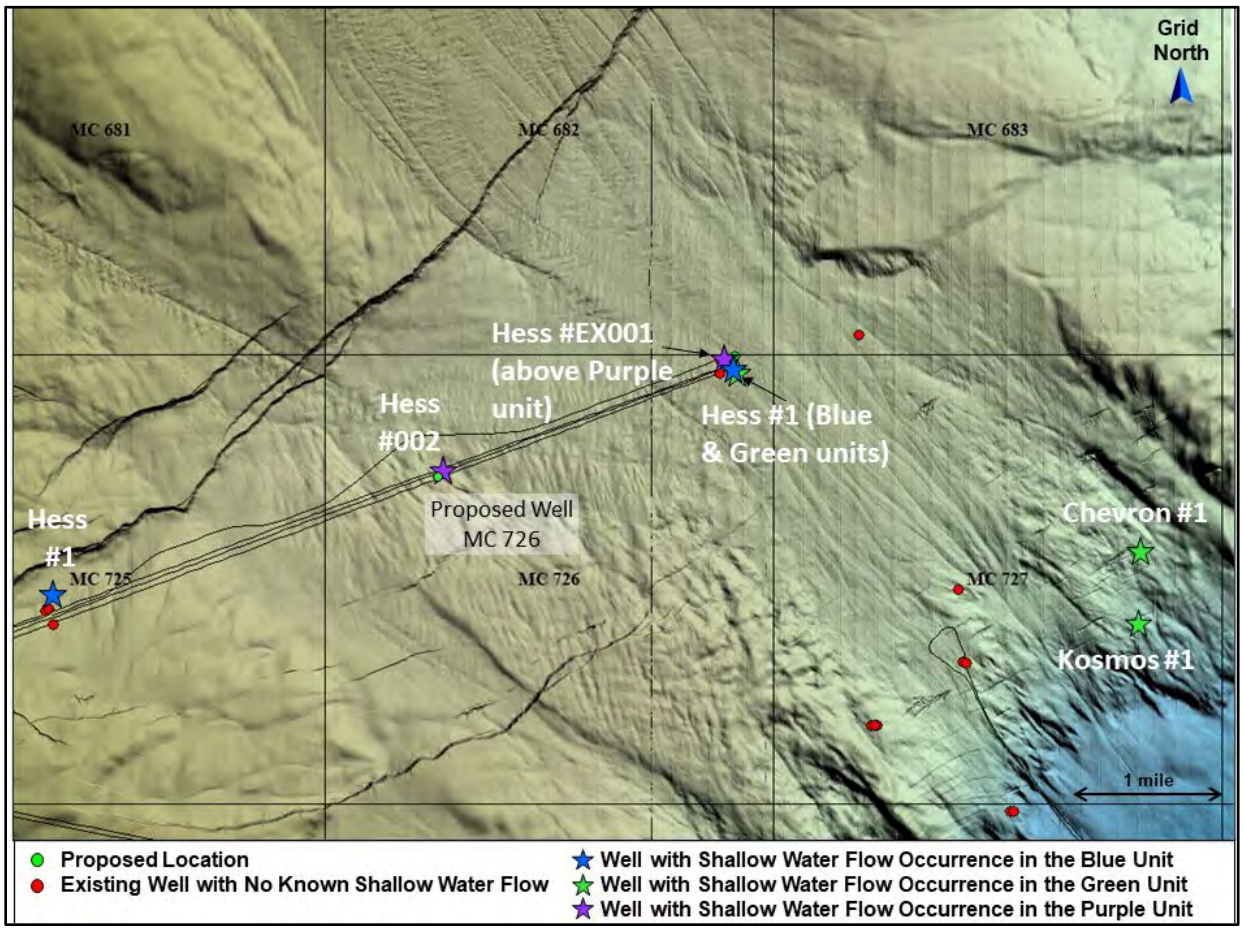


Figure MC 726-EX002-3. Locations of Known Shallow Water Flow Occurrences Near the Proposed Location

Hess has indicated to GEMS that MC 726-002 (Table 2, API 608174121400), approximately 132 ft to the NE, experienced elevated pore water pressures starting at about the level of the Blue Unit. Very high pore pressures

occurred within the Purple Unit (Unit 6a, Horizon 100 to Horizon 110) and flowed within Unit 6b (Anthony Romanoski and Ben Belgarde, personal communications, July 6, 2015, and November 20, 2023). After setting the 22" casing and installing the Riser and BOP the well was drilled to a depth of -9450 bsl (4,880 ft bml) where a shallow water flow occurred. The well had to be side-tracked in order to drill to completion. A High potential for overpressures is assessed for the Purple Unit (Unit 6a) between 3,931 ft and 4,513 ft bml and for Unit 6b (4,513 ft to 5,494 ft bml), Illustration MC 726-EX002-3.

Sand layers were reported within the interval at the base of Unit 2 (Interface to Horizon 50, 504 ft to 676 ft bml). Pore pressure increased within this interval but the well did not flow. This interval at the base of Unit 2 has a Low potential for shallow water flow.

Two wells documented water flow within the Blue Unit in the Tubular Bells area (Table 5, Figure MC 726-EX002-3). In addition, Green Unit shallow water flows were observed in Hess's #1 well in MC 726 ft and at two wells in MC 727 (Figure MC 726-EX002-3). Sands are expected within both the Blue and the Green Unit at the proposed wellsite. No flows were reported in the nearby well, however, pore water pressures were elevated and increased with depth. The potential for shallow water flow is designated as Moderate within the Blue Unit (Horizon 50 to Horizon 60, 676 ft to 1,197 ft) and increased too High within the Green Unit (Horizon 70 to Horizon 80, 1,876 ft to 2,948 ft bml).

A Low potential for shallow water flow has been designated for Unit 6 (2,948 ft to 3,931 ft bml) while a Negligible to Low potential is assessed for Unit 4 between 1,197 ft to 1,876 ft bml (Illustration MC 726 EX002-3). Unit 1 (Seafloor to Horizon 40, 0 to 225 ft bml) and the top of Unit 2 between the 225 ft and 504 ft bml have a Negligible potential for shallow water flow.

Results

No areas with the potential for deepwater benthic communities are identified within 2,000 ft of the proposed location.

Production infrastructure and pipelines lie within 2,000 ft of the proposed location with the closest, well location (API 608174121400 through 608174121404, Table 2), about 132 ft to the northeast. The well location is between two existing pipelines, one is about 60 ft to the southeast and the other about 120 ft to the northwest.

Four unidentified sonar contacts are delineated within 2,000 ft of the proposed wellsite. Also, a debris field exists about 2,000 ft to the southeast. None of the contacts or the debris are representative of a cultural resource. However, if any wood, ceramics, textiles, or ferrous objects become exposed during bottom disturbing operations, all activities must be halted and BOEM notified within 48 hours.

Known shallow water flow units will be penetrated at the proposed wellsite. There is a High potential for encountering overpressured conditions within the sand-prone, slope-fan intervals of Unit 5 (1,876 to 2,948 ft bml) and Unit 6a (3,931 ft to 4,513 ft bml). Sand layers were identified within these intervals with relatively high pore water pressures. An influx was reported just below Unit 6a in the MC 726-002 well.

The Blue Unit (Unit 3 from 676 ft to 1,197 ft bml) is a sand-rich, slope fan sequence that has been the source for shallow water flows in the area. However, the nearby well did not report shallow water flow within this interval. The Blue Unit has a Moderate potential for shallow water flow.

Small amplitude events occur within the Green Unit (Unit 5, 1,876 to 2,948 ft bml). The well bore will not penetrate these anomalies but due to their proximity, the Unit has a Moderate potential for shallow gas. In addition, minor gas shows were indicated in the sands within Units 6a and 6b (3,931 ft to 5,494 ft bml). These units have a Moderate potential for shallow gas.

A vertical borehole will intersect buried faults at 4,013 ft and 5,231 ft bml. Additional faults may be encountered that are below the resolution of the 3-D data, particularly below Horizon 70 (1,876 ft bml).

Closing

We appreciate the opportunity to be of service to Hess Corporation and look forward to working with Hess on future projects.

Sincerely,

GEOSCIENCE EARTH & MARINE SERVICES
A Geosyntec Company

Thomas W. Neurauter, PhD, P.G.
Senior Consultant

Daniel Lanier
Senior Principal

Erin Williams Janes
Principal Geoscientist

Attachments (5 Maps and 3 Illustrations)
Distribution:
Aurélie Justwan, Hess Corporation, Houston, TX (Digital Copy)

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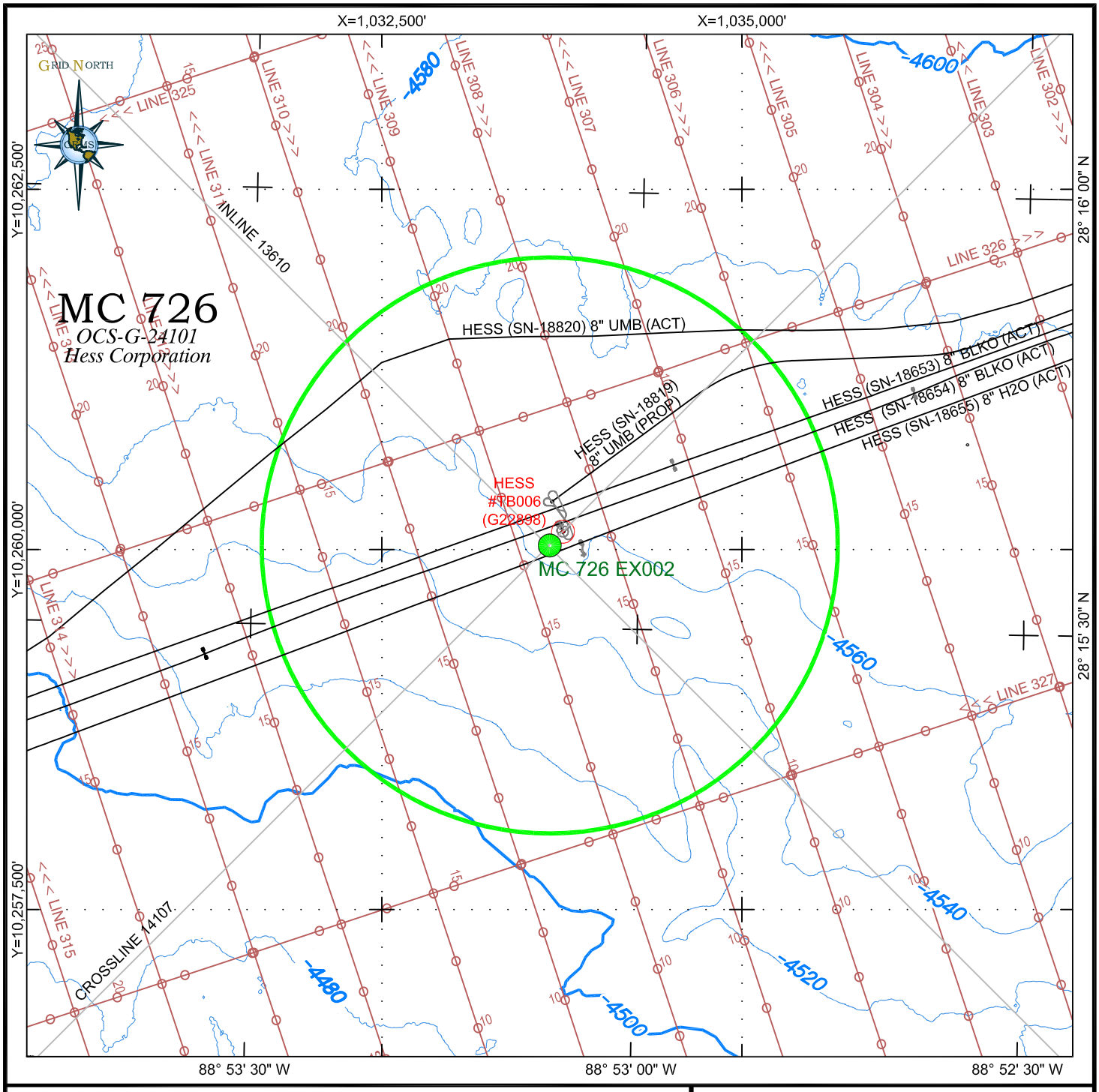


3-D SURVEY LINE.

TRACK LINE FROM ARCHAEOLOGICAL TUBULAR BELLS 2006 AUV SURVEY.

PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.

WATER DEPTH CONTOUR IN FEET.

EXISTING WELL LOCATION, AS REPORTED BY BOEM.

GEODETIC DATUM: NAD 1927
ELLIPSOID: CLARKE 1866
PROJECTION: UTM
ZONE: 16N
GRID UNITS: US FEET

HESS

BATHYMETRY MAP

BLOCK 726
MISSISSIPPI CANYON AREA
GULF OF MEXICO

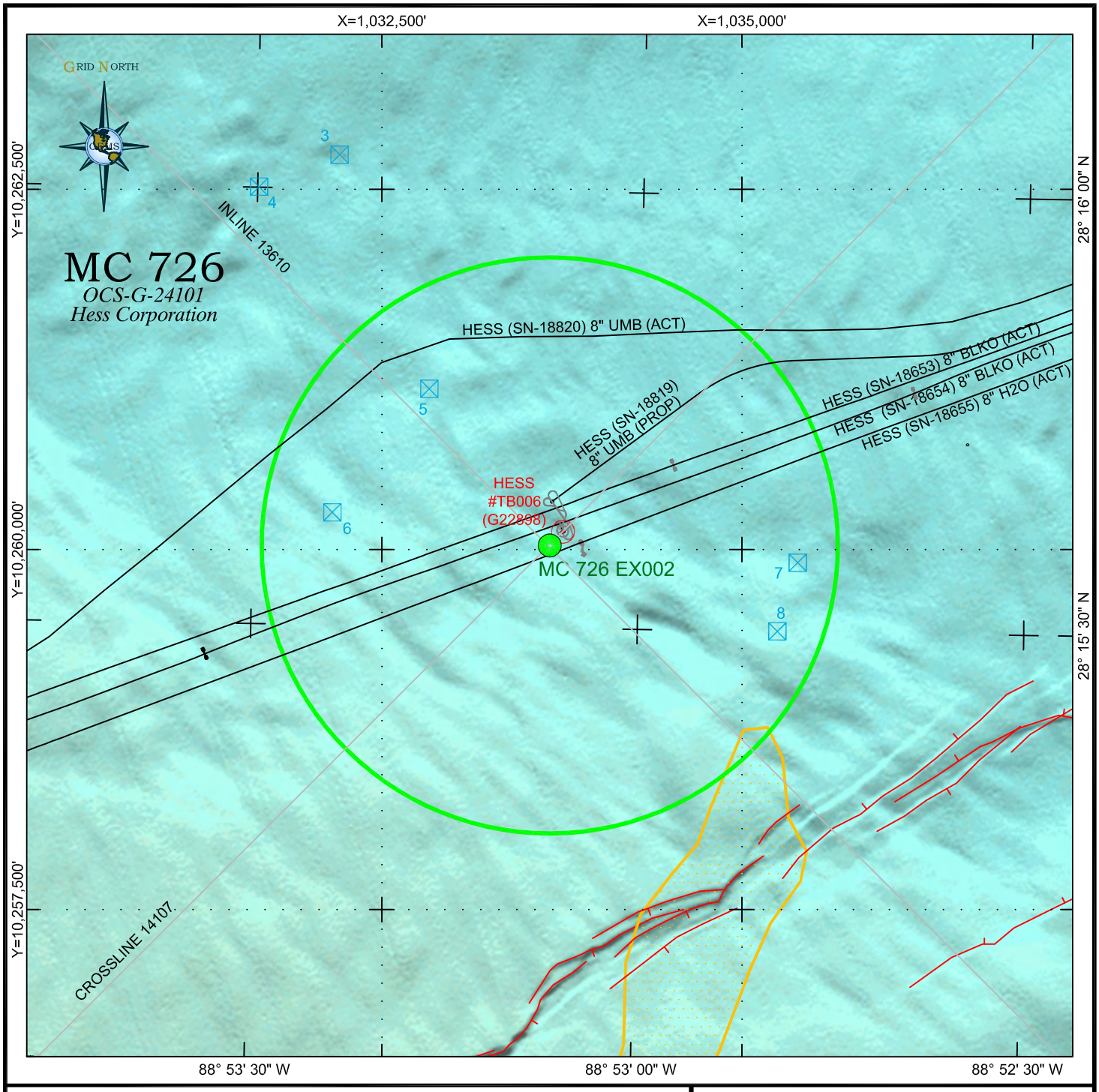
0 500 1000 1500 2000

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

GEOSCIENCE EARTH & MARINE SERVICES, INC.
A Geoservitec Company

DATE: 15 DECEMBER 2023
FILE NAME: 3225_WELL.DWG
PROJECT NO.: 1123-3225

MAP NO. MC 726 EX002-1



3-D SURVEY LINE.

PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.

SEAFLOOR FAULTS. TICKS INDICATE DOWNTHROWN SIDE OF FAULT.

DEBRIS FIELD WITH 50' AVOIDANCE ZONE.

SIDE-SCAN SONAR TARGET FROM ARCHAEOLOGICAL TUBULAR BELLS 2006 AUV SURVEY.

EXISTING WELL LOCATION, AS REPORTED BY BOEM.

AZIMUTH = 40°
ELEVATION = 45°
V.E. = 7.5x

-3580 FT — -5597 FT

RELATIVE WATER DEPTH

GEODETIC DATUM: NAD 1927
ELLIPSOID: CLARKE 1866
PROJECTION: UTM
ZONE: 16N
GRID UNITS: US FEET

HESS

SEAFLOOR FEATURES MAP

BLOCK 726
MISSISSIPPI CANYON AREA
GULF OF MEXICO

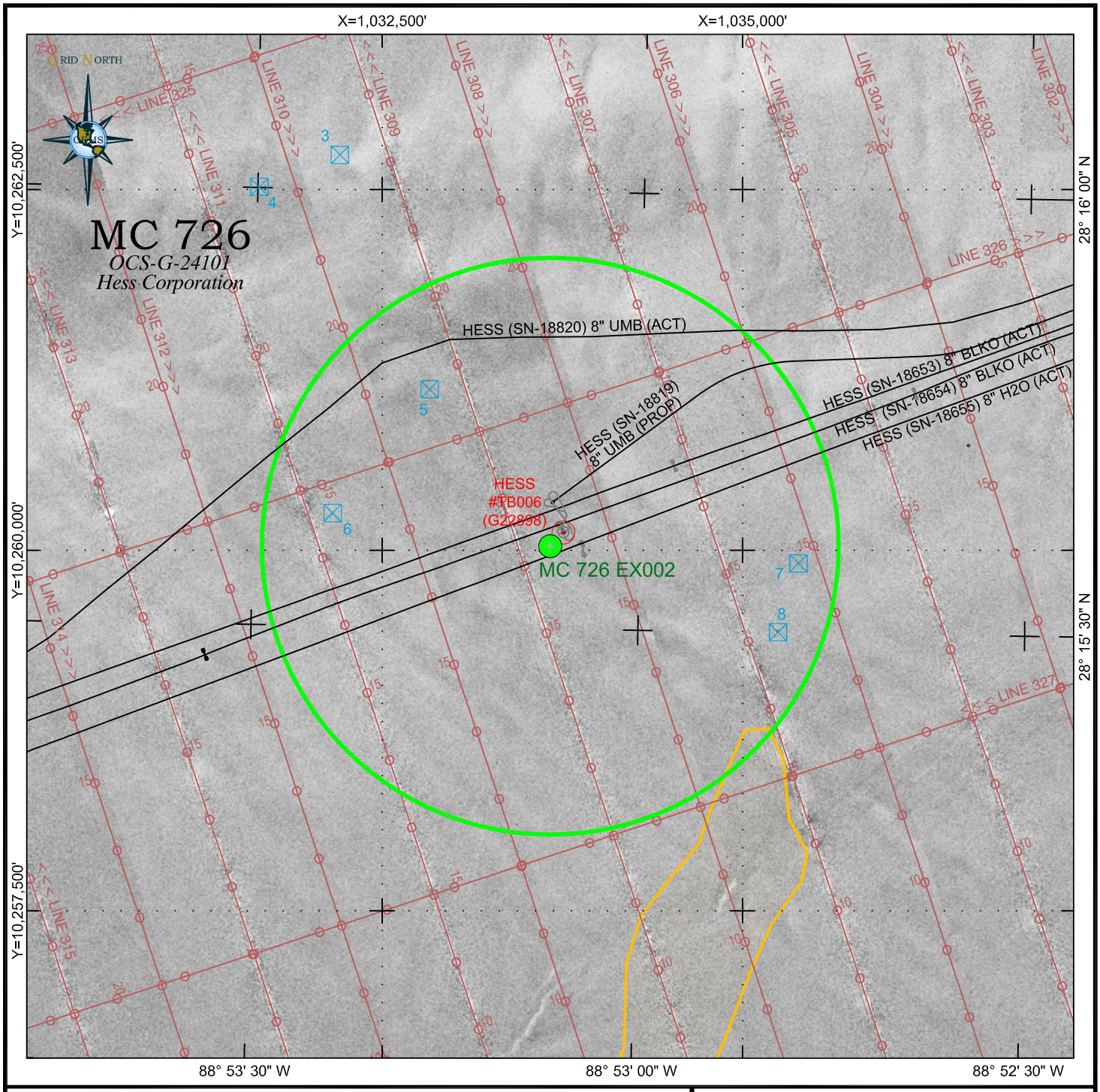
0 500 1000 1500 2000

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

GEOSCIENCE EARTH & MARINE SERVICES, INC.
A Geoscientec Company

DATE: 15 DECEMBER 2023
FILE NAME: 3225_WELL.DWG
PROJECT NO.: 1123-3225

MAP NO. MC 726 EX002-2



TRACK LINE FROM ARCHAEOLOGICAL TUBULAR BELLS 2006 AUV SURVEY.

PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.

SIDE-SCAN SONAR TARGET FROM ARCHAEOLOGICAL TUBULAR BELLS 2006 AUV SURVEY.

DEBRIS FIELD WITH 50' AVOIDANCE ZONE.

EXISTING WELL LOCATION, AS REPORTED BY BOEM.

GEODETIC DATUM: NAD 1927
ELLIPSOID: CLARKE 1866
PROJECTION: UTM
ZONE: 16N
GRID UNITS: US FEET

LOW — HIGH
SONAR REFLECTIVITY

HESS

SIDE-SCAN SONAR MOSAIC

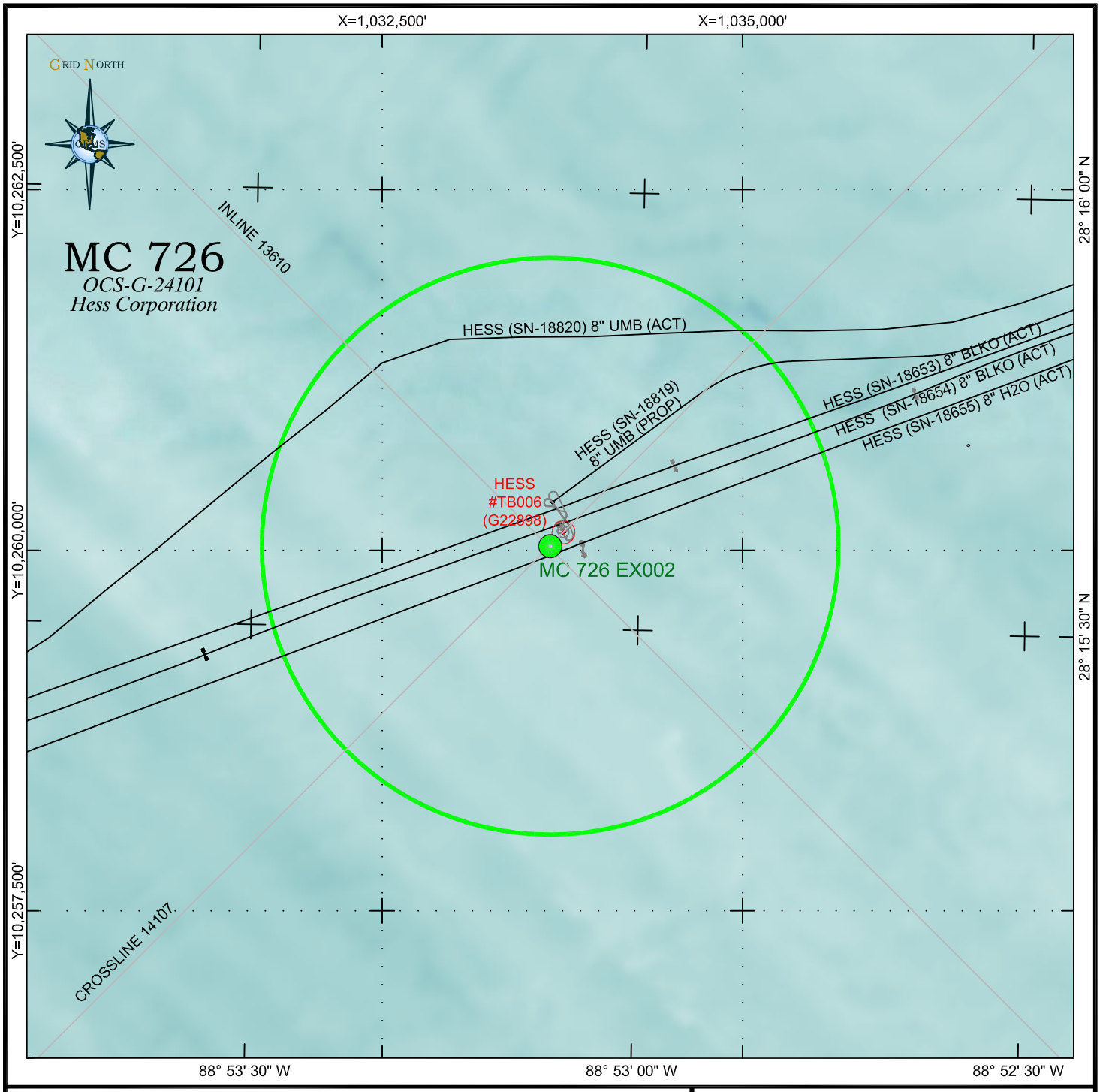
BLOCK 726
MISSISSIPPI CANYON AREA
GULF OF MEXICO

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

GEOSCIENCE EARTH & MARINE SERVICES, INC. (GEMS)
A Geoscientec Company

DATE: 15 DECEMBER 2023
FILE NAME: 3225_WELL.DWG
PROJECT NO.: 1123-3225

MAP NO. MC 726 EX002-3



3-D SURVEY LINE.

PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.

EXISTING WELL LOCATION, AS REPORTED BY BOEM.

AZIMUTH = 40°
ELEVATION = 45°
V.E. = 7.5x

LOW — HIGH
RELATIVE AMPLITUDE

GEODETIC DATUM: NAD 1927
ELLIPSOID: CLARKE 1866
PROJECTION: UTM
ZONE: 16N
GRID UNITS: US FEET

HESS

SEAFLOOR AMPLITUDE RENDERING

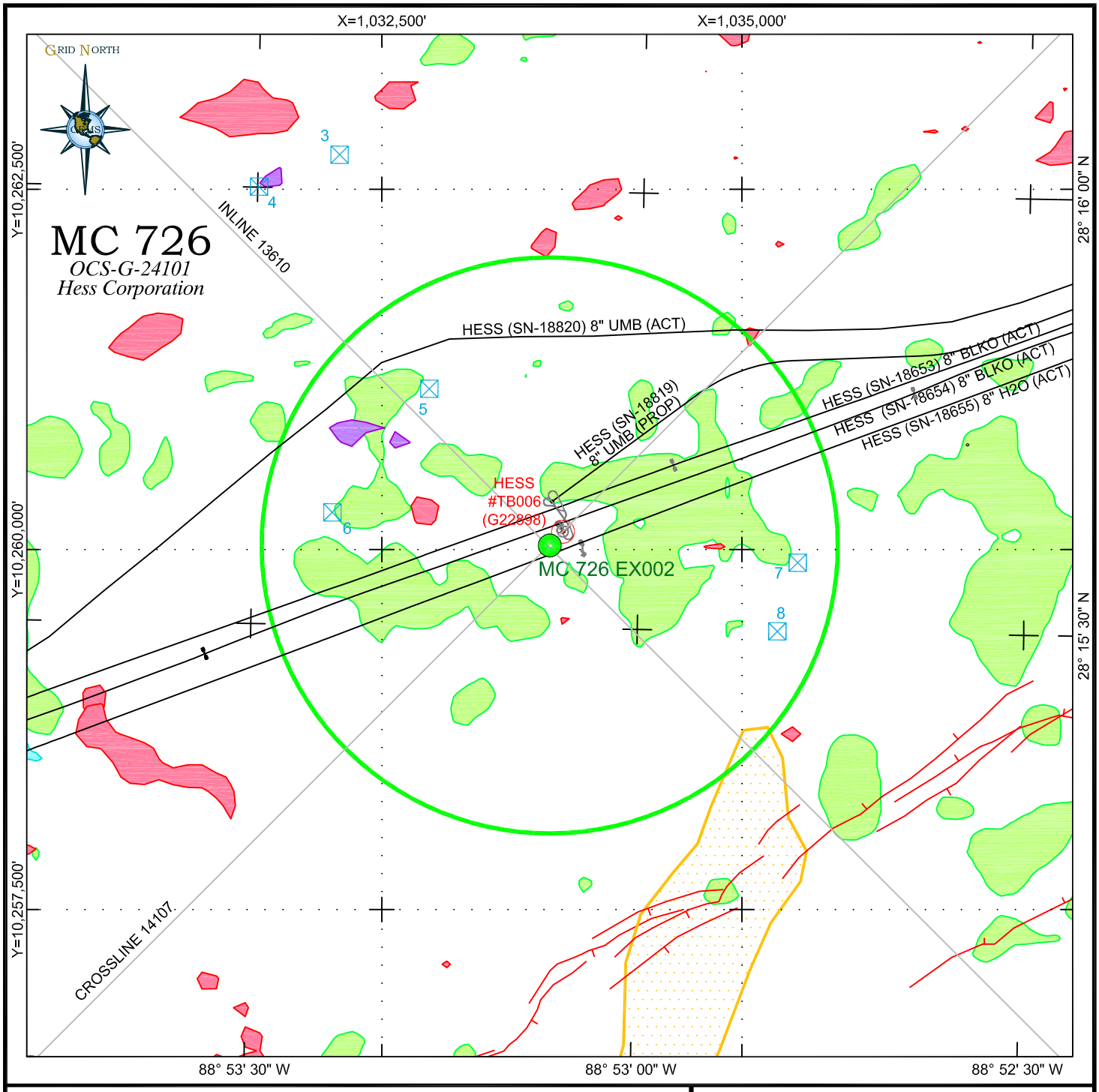
BLOCK 726
MISSISSIPPI CANYON AREA
GULF OF MEXICO

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

GEOSCIENCE EARTH & MARINE SERVICES, INC.
A Geoscientec Company

DATE: 15 DECEMBER 2023
FILE NAME: 3225_WELL.DWG
PROJECT NO.: 1123-3225

MAP NO. MC 726 EX002-4



3-D SURVEY LINE.

PROPOSED WELL LOCATION. CIRCLE REPRESENTS 2000 FT RADIUS AROUND PROPOSED WELLSITE.

SEAFLOOR FAULTS. TICKS INDICATE DOWNTHROWN SIDE OF FAULT.

DEBRIS FIELD WITH 50' AVOIDANCE ZONE.

SIDE-SCAN SONAR TARGET FROM ARCHAEOLOGICAL TUBULAR BELLS 2006 AUV SURVEY.

EXISTING WELL LOCATION, AS REPORTED BY BOEM.

AMPLITUDE ANOMALIES

UNIT 3 - HORIZON 50 TO HORIZON 60 (BLUE UNIT).

UNIT 4 - HORIZON 60 TO HORIZON 70.

UNIT 5 - HORIZON 70 TO HORIZON 80 (GREEN UNIT).

UNIT 6, 6a & 6b - HORIZON 80 TO TOP OF SALT (UNIT 6a = PURPLE UNIT).

GEODETIC DATUM: NAD 1927
ELLIPSOID: CLARKE 1866
PROJECTION: UTM
ZONE: 16N
GRID UNITS: US FEET

HESS

GEOLOGIC FEATURES MAP

BLOCK 726
MISSISSIPPI CANYON AREA
GULF OF MEXICO

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

GEOSCIENCE EARTH & MARINE SERVICES, INC.
A Geoservtec Company

DATE: 15 DECEMBER 2023
FILE NAME: 3225_WELL.DWG
PROJECT NO.: 1123-3225

MAP NO. MC 726 EX002-5

Project No. 1123-3225

Filename:233225_ill_MC726_EX002-1.cdr

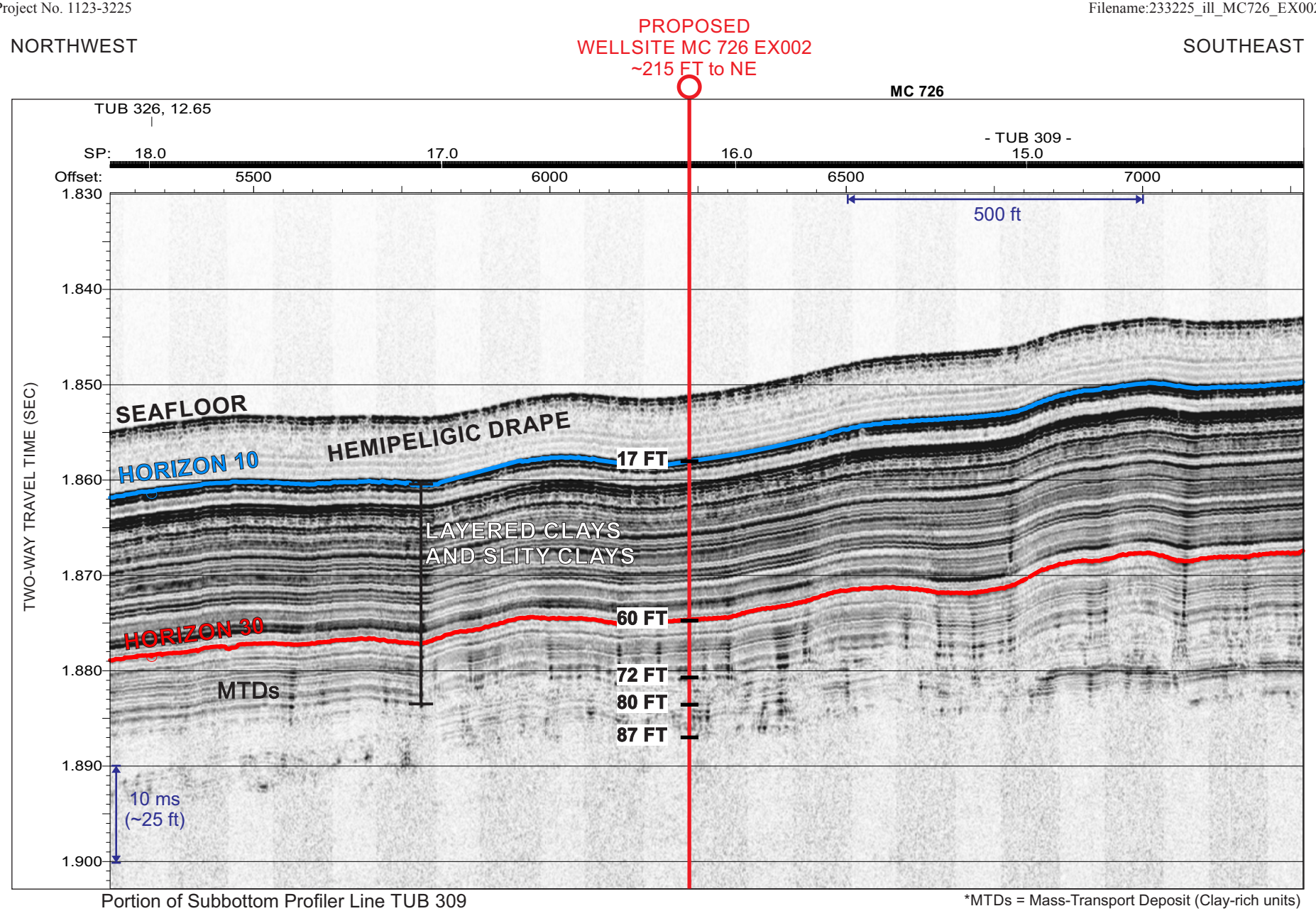


Illustration MC 726 EX002-1. Subbottom Profiler Line Showing Near-Surface Conditions Beneath Proposed Wellsite MC 726 EX002

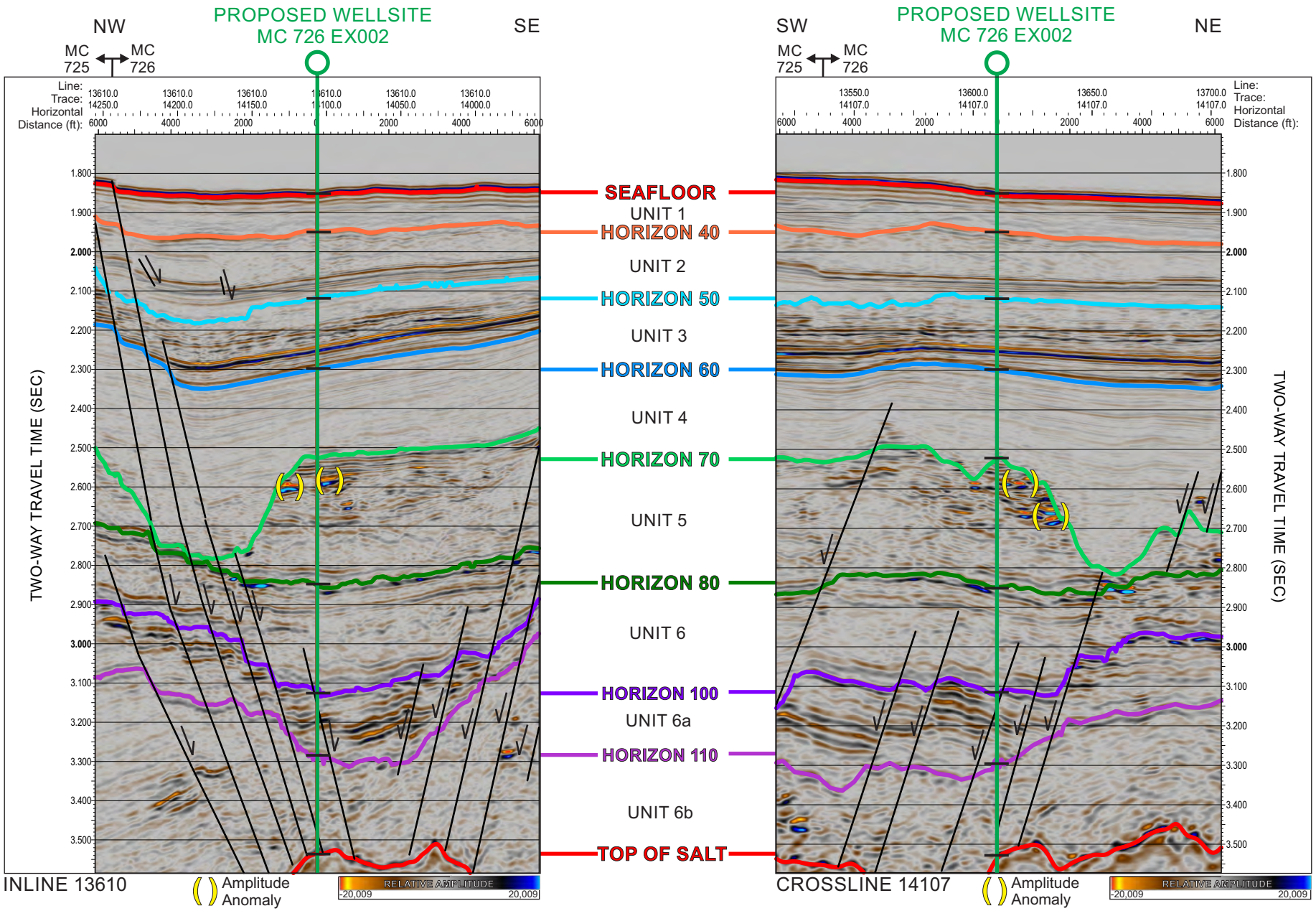


Illustration MC 726 EX002-2. Portions of Inline 13610 and Crossline 14107 Showing Conditions Beneath Proposed Wellsite MC 726 EX002.

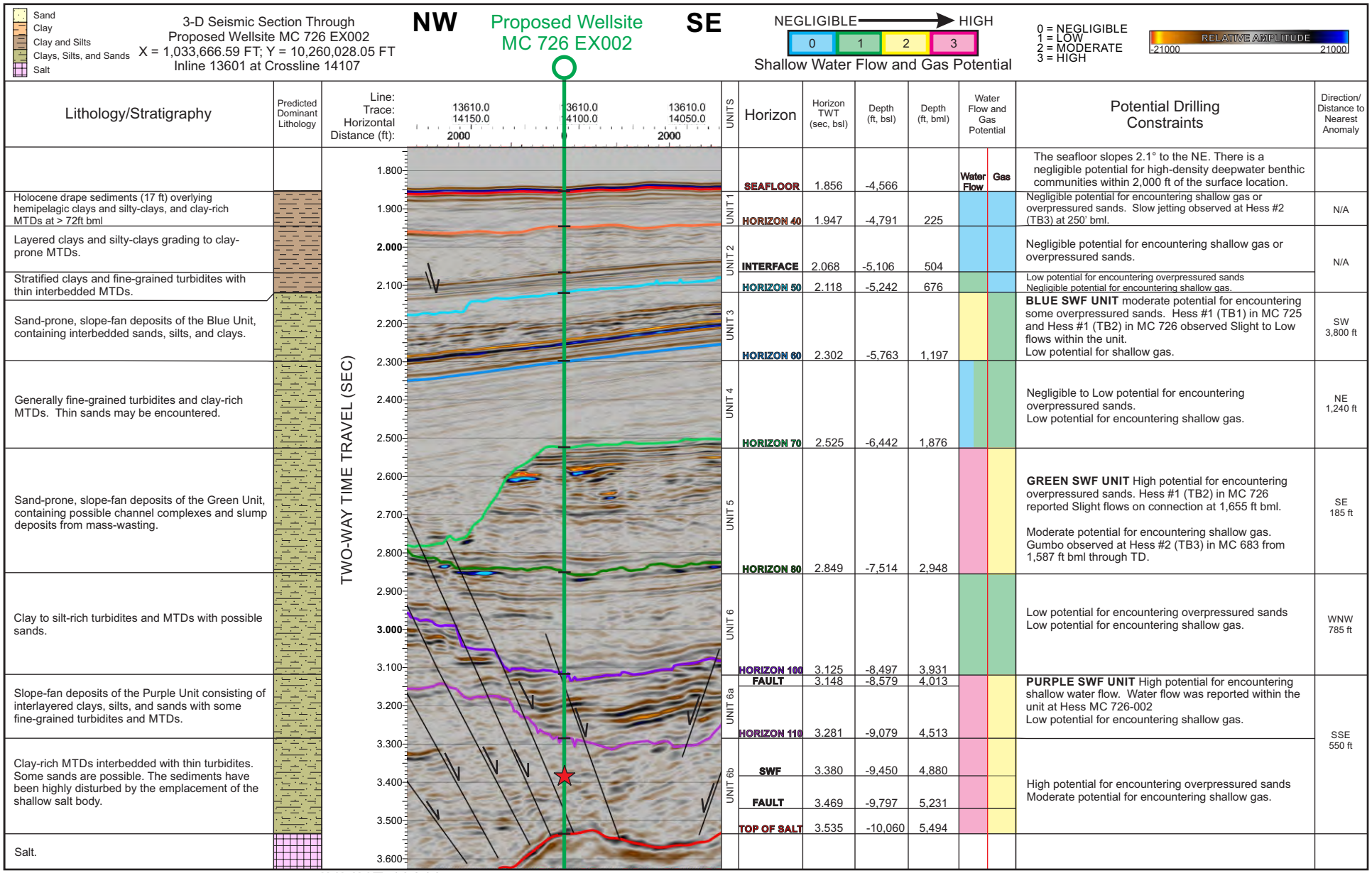


Illustration MC 726 EX002-3. Tophole Prognosis Chart, Proposed Wellsite MC 726 EX002. Surface Location in Mississippi Canyon Area, Block 726.

SECTION 4
HYDROGEN SULFIDE INFORMATION

4.1 CONCENTRATION

Hess anticipates encountering zero ppm H_2S during the proposed operations.

4.2 CLASSIFICATION

In accordance with Title 30 CFR 250.490(c), Hess requests that the area of proposed operations be classified by the BOEM as H_2S absent.

4.3 H2S CONTINGENCY PLAN

An H_2S Contingency Plan is not required for the activities proposed in this plan.

4.4 MODELING REPORT

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

SECTION 5
BIOLOGICAL, PHYSICAL AND SOCIOECONOMIC INFORMATION

5.1 DEEPWATER BENTHIC COMMUNITIES

The seafloor disturbing activities proposed in this plan are in water depths greater than 300 meters (984'). GEMS was contracted to provide an assessment of the shallow conditions at the proposed surface locations. The purpose of the assessment was to address seafloor conditions that may impact exploratory drilling operations within 2,000 feet of the proposed well sites. Hess will avoid all high-density deepwater benthic communities by 2,000 feet from each proposed mud and cuttings discharge location and 250 feet from the location of all other seafloor disturbances. As per NTL No. 2009-G40, "Deepwater Benthic Communities," a map showing the 2,000 foot radius around the well site is included as **Attachment 3-D**.

5.2 TOPOGRAPHIC FEATURES (BANKS)

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

5.3 TOPOGRAPHIC FEATURES STATEMENT (SHUNTING)

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

5.4 LIVE BOTTOMS (PINNACLE TREND FEATURES)

MC Block 726 is not located within 61 meters (200 feet) of any pinnacle trend feature; therefore, a separate bathymetric map is not required per NTL No. 2009-G39, "Biologically Sensitive Underwater Features and Areas."

5.5 LIVE BOTTOMS (LOW RELIEF)

MC Block 726 is not located within 30 meters (100 feet) of any live bottom (low relief) feature with vertical relief equal to or greater than 8 feet; therefore, live bottom (low relief) maps are not required per NTL No. 2009-G39, "Biologically Sensitive Underwater Features and Areas."

5.6 POTENTIALLY SENSITIVE BIOLOGICAL FEATURES MAP

MC Block 726 is not located within 30 meters (100 feet) of potentially sensitive biological features. In accordance with NTL No. 2009-G39, "Biologically Sensitive Underwater Features and Areas," biologically sensitive area maps are not required.

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

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

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico
			Lease Area	Coastal	
Marine Mammals					
Manatee, West Indian	*Trichechus manatus latirostris*	T	--	X	Florida (peninsular)
Whale, Blue	*Balaenoptera masculus*	E	X[1]	--	None
Whale, Bryde's[4]	*Balaenoptera brydei/edeni*	E	X	--	None
Whale, Fin	*Balaenoptera physalus*	E	X[1]	--	None
Whale, Humpback	*Megaptera novaeangliae*	E	X[1]	--	None
Whale, North Atlantic Right	*Eubalaena glacialis*	E	X[1]	--	None
Whale, Rice's[4]	*Balaenoptera ricei*	E	X	--	None
Whale, Sei	*Balaenopiera borealis*	E	X[1]	--	None
Whale, Sperm	*Physeter catodon (=macrocephalus)*	E	X	--	None
Terrestrial Mammals					
Mouse, Beach (Alabama, Choctawatchee, Perdido Key, St. Andrew)	*Peromyscus polionotus*	E	-	X	Alabama, Florida (panhandle) beaches
Birds					
Plover, Piping	*Charadrius melodus*	T	-	X	Coastal Texas, Louisiana, Mississippi, Alabama and Florida (panhandle)
Crane, Whooping	*Grus Americana*	E	-	X	Coastal Texas
Crane, Mississippi sandhill	*Grus canadensis pulla*	E	-	X	Coastal Mississippi
Curlew, Eskimo	*Numenius borealis*	E	-	X	none
Falcon, Northern Aplomado	*Falco femoralis septentrionalis*	E	-	X	none
Knot, Red	*Calidris canutus rufa*	T	-	X	None
Stork, Wood	*Mycteria americana*	T	-	X	None
Reptiles					
Sea Turtle, Green	*Chelonia mydas*	T/E[3]	X	X	None
Sea Turtle, Hawksbill	*Eretmochelys imbricata*	E	X	X	None
Sea Turtle, Kemp's Ridley	*Lepidochelys kempli*	E	X	X	None
Sea Turtle, Leatherback	*Dermochelys coriacea*	E	X	X	None
Sea Turtle, Loggerhead	*Caretta caretta*	T	X	X	Texas, Louisiana, Mississippi, Alabama, Florida
Fish					
Sturgeon, Gulf	*Acipenser oxyrinchus (=oxyrhynchus) desotoi*	T	X	X	Coastal Louisiana, Mississippi, Alabama and Florida (panhandle)
Shark, Oceanic Whitetip	Carcharhinus longimanus	E	X	_	None

Species	Scientific Name	Status	Potential Presence		Critical Habitat Designated in the Gulf of Mexico
			Lease Area	Coastal	
Sawfish, Smalltooth	Pristis pectinate	E	-	X	None
Grouper, Nassau	Epinephelus striatus	T	-	X	None
Ray, Giant Manta	Manta birostris	E	X	--	None
Corals					
Coral, Elkhorn	*Acopora palmate*	T	X[2]	X	Florida Keys and Dry Tortugas
Coral, Staghorn	*Acopora cervicornis*	T	X	X	Florida
Coral, Boulder Star	*Orbicella franksi*	T	X	X	none
Coral, Lobed Star	*Orbicella annularis*	T	X	X	None
Coral, Mountainous Star	*Orbicella faveolate*	T	X	X	None
Coral, Rough Cactus	*Mycetophyllia ferox*	T	-	X	None

Abbreviations: E = Endangered; T = Threatened

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

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

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

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

5.8 ARCHAEOLOGICAL REPORT

MC Block 726 is not located in an area determined to have any historic or prehistoric cultural resources; therefore, an archaeological resource survey report is not provided.

5.9 AIR AND WATER QUALITY INFORMATION

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

5.10 SOCIOECONOMIC INFORMATION

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

SECTION 6
WASTES AND DISCHARGES INFORMATION

6.1 PROJECTED GENERATED WASTES

"Wastes You Will Generate, Treat and Downhole Dispose or Discharge to the Gulf of Mexico" is included as **Attachment 6-A.**

6.2 MODELING REPORT

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

ATTACHMENT 6-A

WASTES YOU WILL GENERATE, TREAT AND DOWNHOLE DISPOSE OR DISCHARGE TO THE GoM					
Projected Generated Waste			**Projected Ocean Discharges**		**Projected**
Type of Waste	**Composition**	**Projected Amount (bbls or lbs/well)**	**Discharge Rate (bbls or lbs/well/day)**	**Discharge Method**	**Answer yes or no**
Will drilling occur? If yes, you should list muds and cuttings					
Water Based Drilling Fluid	Water, NaCl (salt), PHPA polymer and Barium Sulfate (Barite)	71,168 bbl/well	23723 bbl/day/well	Discharge at the mudline prior to the riser installation. Nominal amount of unused fluid may be discharged at the surface. Based on 3 days of drilling with WBM.	No
Cuttings wetted with water-based fluid	Cuttings coated while drilling with WBM	1,750 bbl/well	583 bbl/day/well	Discharged to mudline prior to riser installation. Based on 3 days of drilling with WBM.	No
Synthetic Based Drilling Fluid	Water, Olefin Synthetic Base Fluid, Polymer, Calcium Chloride Salt, Fatty Acid Ester, Barite	5,000 bbl/well	28 bbls/day/well	Mud consumption as drilling, downhole losses and mud volume left behind casing after cementing are estimated volumes based on key offset wells.	Yes
Cuttings wetted with synthetic-based fluid	Cuttings coated with Synthetic drilling fluids, including drill out cement.	7,867 bbls/well	71 bbls/day/well	Discharged to surface. Treated cuttings will be discharged overboard during drilling of the SBM intervals. Cuttings will be processed through a cuttings dryer, substantially reducing the ROC percentage.	No
Will humans be there? If yes, expect conventional waste					
Domestic waste	Gray water from living quarters	38,571 bbls/well	142 bbls/day/well	Chlorinate and discharge overboard thru US Coast Guard (USCG) approved Marine Sanitary Device.	No
Sanitary	Sanitary waste from living quarters, control	25,714 bbls/well	95 bbls/day/well	USCG approved Marine Sanitary Device with chlorination.	No
Is there a deck? If yes, there will be deck drainage					
Deck Drainage	Deck drainage from drilling floor rig washing and rain water.	25,400 bbls/well	94 bbls/day/well	All deck drainage is settle separated and static sheen tested before being discharged into the GoM.	No
Well completion fluids					
Well treatment fluids	Crosslinked guar gel mixed in 7% potassium chloride	3500 bbls/well	300 bbls/well	Fluid is pre-qualified to have passed oil & grease limit, LC-50, and static sheen. Static sheen confirmed before discharging overboard from pit system.	No
Well treatment fluids	10% hydrochloric + 10% Acetic acid	350 bbls/well	0 bbls/well	Fluid will be spent and disposed of downhole across formations as part of completion stimulation for the well.	Yes
Well treatment fluids	7% potassium chloride	200 bbls/well	0 bbls/well	Fluid will be spent and disposed of downhole across formations as part of completion stimulation for the well.	Yes
Well treatment fluids	15% hydrochloric acid	95 bbls	48 bbls/well/day	Acid neutralized with soda ash or equivalent buffer, checked for static sheen, then discharged overboard.	No
Well completion fluids	11 ppg calcium chloride	1000 bbs/well	25 bbls/well/day	Fluid is checked for static sheen, and if passes limit test, will be discharged overboard from the pit system.	No
Workover fluids	N/A			N/A	
Miscellaneous discharges. If yes, only fill in those associated with your activity.					
Desalinization unit discharge	Rejected water from the watermaker.	4,561,920 bbls/well	25,344 bbls/well/day	Hull discharge overboard	No
Blowout prevent fluid	Potable Water with 3% Erifon	100 bbl/well	1.00 bbl/day/well	Discharge at the seafloor or with deck drainage when tested at surface.	No
Ballast water	Uncontaminated seawater used to	945,000 bbl/well	3500 bbls/day/well	Hull discharge overboard as per MARPOL regulations.	No
Bilge water	N/A	N/A	N/A	N/A	
Excess cement at seafloor	Cement Slurry	N/A	N/A	N/A	No
Fire water	Sea Water with no additional chemicals	35,262,000 bbl/well	130,600 bbls/day/well	Hull discharge overboard	No
Cooling water	Sea Water with no additional chemicals	35,262,000 bbl/well	130,600 bbls/day/well	Hull discharge overboard	No
Will you produce hydrocarbons? If yes fill in for produced water.					
N/A	N/A	N/A	N/A	N/A	No
Please enter individual or general to indicate which type of NPDES permit you will be covered by:					
		General NPDES Permit #: GMG290003			

SECTION 7
AIR EMISSIONS INFORMATION

7.1 EMISSIONS WORKSHEETS AND SCREENING QUESTIONS

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

7.2 SUMMARY INFORMATION

There are no existing facilities or activities co-located with the currently proposed activities; therefore, the Complex Total Emissions are the same as the Plan Emissions and are provided in **Attachment 7-A.**

This information was calculated by:

Kelley Pisciola
281-698-8519
kelley.pisciola@jccteam.com

COMPANY	Hess Corporation
AREA	Mississippi Canyon
BLOCK	726
LEASE	G-24101
FACILITY	NA
WELL	EX002
COMPANY CONTACT	Kelley Pisciola
TELEPHONE NO.	281.698.8519
REMARKS	Drill and Complete Well Location EX002 from a surface location in MC 726 ***(Air Emissions calculated using MODU T.O. Deepwater Asgard actual fuel usage data. Hess will use a Rig equal to or similar to a T.O. Deepwater Asgard Rig).***

AIR EMISSIONS COMPUTATION FACTORS

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

Equipment/Emission Factors	units	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	REF.	DATE	Reference Links
Natural Gas Turbine	g/hp-hr		0.0086	0.0086	0.0026	1.4515	0.0095	N/A	0.3719	N/A	AP42 3.1-1& 3.1-2a	4/00	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s01.pdf
RECIP. 2 Cycle Lean Natural Gas	g/hp-hr		0.1293	0.1293	0.0020	6.5998	0.4082	N/A	1.2009	N/A	AP42 3.2-1	7/00	https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s02.pdf
RECIP. 4 Cycle Lean Natural Gas	g/hp-hr		0.0002	0.0002	0.0020	2.8814	0.4014	N/A	1.8949	N/A	AP42 3.2-2	7/00	https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s02.pdf
RECIP. 4 Cycle Rich Natural Gas	g/hp-hr		0.0323	0.0323	0.0020	7.7224	0.1021	N/A	11.9408	N/A	AP42 3.2-3	7/00	https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s02.pdf
Diesel Recip. < 600 hp	g/hp-hr	1	1	1	0.0279	14.1	1.04	N/A	3.03	N/A	AP42 3.3-1	10/96	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s03.pdf
Diesel Recip. > 600 hp	g/hp-hr	0.32	0.182	0.178	0.0055	10.9	0.29	N/A	2.5	N/A	AP42 3.4-1 & 3.4-2	10/96	https://www3.epa.gov/ttn/chief/ap42/ch03/final/c03s04.pdf
Diesel Boiler	lbs/bbl	0.0840	0.0420	0.0105	0.0089	1.0080	0.0084	5.14E-05	0.2100	0.0336	AP42 1.3-6; Pb and NH3: WebFIRE (08/2018)	9/98 and 5/10	https://cfpub.epa.gov/webfire/
Diesel Turbine	g/hp-hr	0.0381	0.0137	0.0137	0.0048	2.7941	0.0013	4.45E-05	0.0105	N/A	AP42 3.1-1 & 3.1-2a	4/00	https://www3.epa.gov/ttnchie1/ap42/ch03/final/c03s01.pdf
Dual Fuel Turbine	g/hp-hr	0.0381	0.0137	0.0137	0.0048	2.7941	0.0095	4.45E-05	0.3719	0.0000	AP42 3.1-1& 3.1-2a; AP42 3.1-1 & 3.1-2a	4/00	https://cfpub.epa.gov/webfire/
Vessels – Propulsion	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	
Vessels – Drilling Prime Engine, Auxiliary	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
Vessels – Diesel Boiler	g/hp-hr	0.0466	0.1491	0.1417	0.4400	1.4914	0.0820	3.73E-05	0.1491	0.0003	USEPA 2017 NEI;TSP (units converted) refer to Diesel Boiler Reference	3/19	
Vessels – Well Stimulation	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	
Natural Gas Heater/Boiler/Burner	lbs/MMscf	7.60	1.90	1.90	0.60	190.00	5.50	5.00E-04	84.00	3.2	AP42 1.4-1 & 1.4-2; Pb and NH3: WebFIRE (08/2018)	7/98 and 8/18	https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf
Combustion Flare (no smoke)	lbs/MMscf	0.00	0.00	0.00	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	https://cfpub.epa.gov/webfire/
Combustion Flare (light smoke)	lbs/MMscf	2.10	2.10	2.10	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Combustion Flare (medium smoke)	lbs/MMscf	10.50	10.50	10.50	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	https://www3.epa.gov/ttn/chief/ap42/ch13/final/C13S05_02-05-18.pdf
Combustion Flare (heavy smoke)	lbs/MMscf	21.00	21.00	21.00	0.57	71.40	35.93	N/A	325.5	N/A	AP42 13.5-1, 13.5-2	2/18	
Liquid Flaring	lbs/bbl	0.42	0.0966	0.0651	5.964	0.84	0.01428	5.14E-05	0.21	0.0336	AP42 1.3-1 through 1.3-3 and 1.3-5	5/10	https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s03.pdf
Storage Tank	tons/yr/tank						4.300				2014 Gulfwide Inventory; Avg emiss (upper bound of 95% CI)	2017	https://www.boem.gov/environment/environmental-studies/2014-gulfwide-emission-inventory
Fugitives	lbs/hr/component						0.0005				API Study	12/93	https://www.api.org/
Glycol Dehydrator	tons/yr/dehydrator						19.240				2011 Gulfwide Inventory; Avg emiss (upper bound of 95% CI)	2014	https://www.boem.gov/environment/environmental-studies/2011-gulfwide-emission-inventory
Cold Vent	tons/yr/vent						44.747				2014 Gulfwide Inventory; Avg emiss (upper bound of 95% CI)	2017	https://www.boem.gov/environment/environmental-studies/2014-gulfwide-emission-inventory .
Waste Incinerator	lb/ton		15.0	15.0	2.5	2.0	N/A	N/A	20.0	N/A	AP 42 2.1-12	10/96	https://www3.epa.gov/ttnchie1/ap42/ch02/final/c02s01.pdf
On-Ice – Loader	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Other Construction Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Other Survey Equipment	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Tractor	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	https://www.epa.gov/moves/nonroad2008a-installation-and-updates
On-Ice – Truck (for gravel island)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
On-Ice – Truck (for surveys)	lbs/gal	0.043	0.043	0.043	0.040	0.604	0.049	N/A	0.130	0.003	USEPA NONROAD2008 model; TSP (units converted) refer to Diesel Recip. <600 reference	2009	
Man Camp - Operation (max people/day)	tons/person/day		0.0004	0.0004	0.0004	0.006	0.001	N/A	0.001	N/A	BOEM 2014-1001	2014	https://www.boem.gov/sites/default/files/uploadedFiles/BOEM/BOEM_Newsroom/Library/Publications/2014-1001.pdf
Vessels - Ice Management Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
Vessels - Hovercraft Diesel	g/hp-hr	0.320	0.1931	0.1873	0.0047	7.6669	0.2204	2.24E-05	1.2025	0.0022	USEPA 2017 NEI;TSP refer to Diesel Recip. > 600 hp reference	3/19	https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data

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

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

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

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

AIR EMISSIONS CALCULATIONS - 1ST YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL					CONTACT	PHONE	REMARKS
Hess Corporation	Mississippi Canyon		726	G-24101	NA	EX002					Kelley Pisciola	281.698.8519	Drill and Complete Well Location EX002 from a surface location in MC 726 (Air Emissions calculated using MODU T.O. Deepwater Asgard actual fuel usage data. Hess will use a Rig equal to or similar to a T.O. Deepwater Asgard Rig).

OPERATIONS	EQUIPMENT	EQUIPMENT ID	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR									ESTIMATED TONS								
	Diesel Engines		HP	GAL/HR	GAL/D																				
	Nat. Gas Engines		HP	SCF/HR	SCF/D																				
	Burners		MMBTU/HR	SCF/HR	SCF/D	HR/D	D/YR	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	12549.60	24	153	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	13.17	7.94	7.70	0.19	315.42	9.07	0.00	49.47	0.09
	VESSELS- Drilling - Propulsion Engine - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS- Drilling - Propulsion Engine - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS- Drilling - Propulsion Engine - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Diesel Boiler		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels – Drilling Prime Engine, Auxiliary		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/Derrick Barge Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			BPD																						
DRILLING	Liquid Flaring		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	COMBUSTION FLARE - no smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - light smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - medium smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - heavy smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		**kW**			**HR/D**	**D/YR**																		
	VESSELS - Ice Management Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
2024	**Facility Total Emissions**							**43.60**	**26.30**	**25.51**	**0.63**	**1,044.59**	**30.03**	**0.00**	**163.84**	**0.30**	**13.17**	**7.94**	**7.70**	**0.19**	**315.42**	**9.07**	**0.00**	**49.47**	**0.09**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**1,831.50**			**1,831.50**	**1,831.50**	**1,831.50**		**49,172.32**	
	55.0																								
DRILLING	VESSELS- Crew Diesel		7200	370.411201	8889.87	24	87	5.08	3.06	2.97	0.07	121.70	3.50	0.00	19.09	0.04	5.30	3.20	3.10	0.08	127.05	3.65	0.00	19.93	0.04
	VESSELS - Supply Diesel		9468	487.090729	11690.18	24	27	6.68	4.03	3.91	0.10	160.03	4.60	0.00	25.10	0.05	2.16	1.31	1.27	0.03	51.85	1.49	0.00	8.13	0.02
	VESSELS - Tugs Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY	VESSELS - Material Tug Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	VESSELS - Crew Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	VESSELS - Support Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			**GAL/HR**	**GAL/D**																				
	Man Camp - Operation (maximum people per day)		**PEOPLE/DAY**																						
	VESSELS		**kW**			**HR/D**	**D/YR**																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	**Non-Facility Total Emissions**							**11.76**	**7.09**	**6.88**	**0.17**	**281.73**	**8.10**	**0.00**	**44.19**	**0.08**	**7.47**	**4.51**	**4.37**	**0.11**	**178.91**	**5.14**	**0.00**	**28.06**	**0.05**

AIR EMISSIONS CALCULATIONS - 2ND YEAR

COMPANY	AREA		BLOCK	LEASE	FACILITY	WELL						CONTACT		PHONE		REMARKS									
Hess Corporation	Mississippi Canyon		726	G-24101	NA	EX002						Kelley Pisciola		281.698.8519		Drill and Complete Well Location EX002 from a surface location in MC 726 (Air Emissions calculated using MODU T.O. Deepwater Asgard actual fuel usage data. Hess will use a Rig equal to or similar to a T.O. Deepwater Asgard Rig).									
OPERATIONS	**EQUIPMENT**	**EQUIPMENT ID**	**RATING**	**MAX. FUEL**	**ACT. FUEL**	**RUN TIME**		**MAXIMUM POUNDS PER HOUR**									**ESTIMATED TONS**								
	Diesel Engines		**HP**	**GAL/HR**	**GAL/D**																				
	Nat. Gas Engines		**HP**	**SCF/HR**	**SCF/D**																				
	Burners		**MMBTU/HR**	**SCF/HR**	**SCF/D**	**HR/D**	**D/YR**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**	**TSP**	**PM10**	**PM2.5**	**SOx**	**NOx**	**VOC**	**Pb**	**CO**	**NH3**
DRILLING	VESSELS- Drilling - Propulsion Engine - Diesel		61800	3179.3628	12549.60	24	47	43.60	26.30	25.51	0.63	1044.59	30.03	0.00	163.84	0.30	4.04	2.44	2.37	0.06	96.90	2.79	0.00	15.20	0.03
	VESSELS- Drilling - Propulsion Engine - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS- Drilling - Propulsion Engine - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS- Drilling - Propulsion Engine - Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels - Diesel Boiler		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Vessels – Drilling Prime Engine, Auxiliary		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY INSTALLATION	VESSELS - Heavy Lift Vessel/Derrick Barge Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			BPD																						
DRILLING	Liquid Flaring		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	COMBUSTION FLARE - no smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - light smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - medium smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
	COMBUSTION FLARE - heavy smoke			0		0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--
ALASKA-SPECIFIC SOURCES	**VESSELS**		**kW**			**HR/D**	**D/YR**																		
	VESSELS - Ice Management Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
2025	**Facility Total Emissions**							**43.60**	**26.30**	**25.51**	**0.63**	**1,044.59**	**30.03**	**0.00**	**163.84**	**0.30**	**4.04**	**2.44**	**2.37**	**0.06**	**96.90**	**2.79**	**0.00**	**15.20**	**0.03**
EXEMPTION CALCULATION	**DISTANCE FROM LAND IN MILES**																**1,831.50**			**1,831.50**	**1,831.50**	**1,831.50**		**49,172.32**	
	55.0																								
DRILLING	VESSELS- Crew Diesel		7200	370.411201	8889.87	24	27	5.08	3.06	2.97	0.07	121.70	3.50	0.00	19.09	0.04	1.65	0.99	0.96	0.02	39.43	1.13	0.00	6.18	0.01
	VESSELS - Supply Diesel		9468	487.090729	11690.18	24	7	6.68	4.03	3.91	0.10	160.03	4.60	0.00	25.10	0.05	0.56	0.34	0.33	0.01	13.44	0.39	0.00	2.11	0.00
	VESSELS - Tugs Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY INSTALLATION	VESSELS - Material Tug Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Crew Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS - Supply Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRODUCTION	VESSELS - Support Diesel		0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALASKA-SPECIFIC SOURCES	**On-Ice Equipment**			**GAL/HR**	**GAL/D**																				
	Man Camp - Operation (maximum people per day)		**PEOPLE/DAY**																						
	VESSELS		**kW**			**HR/D**	**D/YR**																		
	On-Ice – Loader			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Construction Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Other Survey Equipment			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Tractor			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for gravel island)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	On-Ice – Truck (for surveys)			0	0.0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00
	Man Camp - Operation		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	
	VESSELS - Hovercraft Diesel		0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	**Non-Facility Total Emissions**							**11.76**	**7.09**	**6.88**	**0.17**	**281.73**	**8.10**	**0.00**	**44.19**	**0.08**	**2.21**	**1.33**	**1.29**	**0.03**	**52.87**	**1.52**	**0.00**	**8.29**	**0.02**

AIR EMISSIONS CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	FACILITY	WELL	
Hess Corporation	MC	726	G24101	NA	EX002	

Year	Facility Emitted Substance								
	TSP	PM10	PM2.5	SOx	NOx	VOC	Pb	CO	NH3
2024	13.17	7.94	7.70	0.19	315.42	9.07	0.00	49.47	0.09
2025	4.04	2.44	2.37	0.06	96.90	2.79	0.00	15.20	0.03
Allowable	1831.50			1831.50	1831.50	1831.50		49172.32	

ACTUAL FUEL USAGE FACTORS ASSUMED FOR AQR EMISSION CALCULATIONS

T.O. Deepwater Asgard	February 1, 2022 – June 22, 2022
Total Fuel Usage (bbls)	35,361 bbls

35,361 bbls / 142 days = 249 bbls/day + 20% contingency = 298.8

298.8 bbls/day = 12,549.6 gals/day

T.O. Deepwater Asgard Fuel Consumed (02/01/22 – 06/22/22)

February 2022 – 7,208 bbls
March 2022 – 8,750 bbls
April 2022 – 8,743 bbls
May 2022 – 7,767 bbls
June 2022 – 2,891 bbls

SECTION 8
OIL SPILL INFORMATION

8.1 OIL SPILL RESPONSE PLANNING

All the proposed activities and facilities in this EP will be covered by the Oil Spill Response Plan (OSRP) filed by Hess Corporation (Company No. 00059) approved December 13, 2021, and latest submittal of OSRP Non-Regulatory Update found in compliance January 20, 2023, in accordance with 30 CFR 254.

8.2 SPILL RESPONSE SITES

Primary Response Equipment Location	Preplanned Staging Location
Harvey, LA	Fourchon, LA
Leeville, LA	

8.3 OIL SPILL RESPONSE ORGANIZATION (OSRO) INFORMATION

Hess is a member of the Marine Preservation Association (MPA) which allows for access and citation rights to the Marine Spill Response Corporation (MSRC). Hess is a member of Oil Spill Response Limited (OSRL) which provides access to additional equipment in the event of a Tier III incident. Hess is also a member of the Clean Gulf Associates (CGA) cooperative.

Additionally, Hess Corporation is a charter member of the Marine Well Containment Company (MWCC).

8.4 WORST CASE SCENARIO DETERMINATION

Category	Regional OSRP WCD - Drilling	EP WCD - Drilling
Type of activity	Drilling	Drilling
Facility location (area/block)	GC 468	MC 726
Facility designation	004 (Black Pearl 1)	EX002
Distance to nearest shoreline (miles)	107 miles	55
Storage tanks (bbl)		
Uncontrolled blowout (bbl)	492,550	347,003
Total volume (bbl)	**492,550**	**347,003**
Type of oil(s) (crude, condensate, diesel)	Crude	Crude/Condensate
API gravity	30°-39°	37-39°

Hess has determined that the worst-case scenario from the activities proposed in this EP does not supersede the worst-case scenario from our approved Regional, The WCD volume of 347,003 barrels of oil per day was approved under Revised DOCD, Control No. R-6739.

All the proposed activities and facilities in this EP will be covered by the Oil Spill Response Plan (OSRP) filed by Hess Corporation (Company No. 00059) approved December 13, 2021. and latest submittal of OSRP Non-Regulatory Update found in compliance January 20, 2023, in accordance with 30 CFR 254.

8.5 OIL SPILL RESPONSE DISCUSSION

The Oil Spill Response Discussion is included as **Attachment 8-A.**

8.6 MODELING REPORT

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

ATTACHMENT 8-A

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 347,003 barrels of crude oil with an API gravity of 37.5°.

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 BSEE Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the BSEE website. The results are shown in **Figure 1.** The BSEE OSRAM identifies an 11% probability of impact to the shorelines of Plaquemines Parish, Louisiana within 30 days. Plaquemines Parish includes Barataria Bay, the Mississippi River Delta, Breton Sound and the affiliated islands and bays. This region is an extremely sensitive habitat and serves as a migratory, breeding, feeding and nursery habitat for numerous species of wildlife. Beaches in this area vary in grain particle size and can be classified as fine sand, shell or perched shell beaches. Sandy and muddy tidal flats are also abundant.

Response

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

Using the estimated chemical and physical characteristics of crude oil, an ADIOS weathering model was run on a similar product from the ADIOS oil database. The results indicate 14% would be evaporated/dispersed within 24 hours.

Natural Weathering: MC 726, EX002 (Esox West)	**Barrels of Oil**
WCD Volume	347,003
Less 14% natural evaporation/dispersion	48,580
Remaining volume	298,423

Figure 2 outlines equipment, personnel, materials, and support vessels as well as temporary storage equipment available to respond to a spill of approximately 354,636 barrels. The volume accounts for the amount remaining after evaporation/dispersion at 24 hours. The list estimates individual times needed for procurement, load out, travel time to the site and deployment. **Figure 2** also indicates how operations will be supported. Please note that **Figure 2** is a list of contractually available equipment, which may be called out in the event of an exercise or spill. However, operations and specific equipment are situationally dependent and may change according to product specifications, weather, and environmental conditions, etc.

Hess's Oil Spill Response Plan includes alternative response technologies such as dispersants and in-situ burn. Strategies will be decided by Unified Command based on the size of the spill,

weather, and potential impacts. If aerial dispersants are utilized, 8 sorties (9,600 gallons) from the DC-3 aircraft and 4 sorties (8,000 gallons) from the Basler aircraft would provide a daily dispersant capability of 7,540 barrels. If the conditions are favorable for in-situ burning, the proper approvals have been obtained and the proper planning is in place, in-situ burning of oil may be attempted. Slick containment boom would be immediately called out and on-scene as soon as possible. Offshore response strategies may include attempting to skim utilizing CGA's and MSRC's spill response equipment with a total derated skimming capacity of 1,216,248 barrels. Temporary storage associated with skimming equipment equals 411,796 barrels. If additional storage is needed, various tank barges with a total of 878,000 barrels of storage capacity 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 may include the use of CGA's and MSRC's shoreline, near shore, and shallow water skimmers with a totaled derated skimming capacity of 291,303 barrels. Temporary storage associated with skimming equipment equals 9,037 barrels. If additional storage is needed, various tank barges with a total of 294,000 barrels of storage capacity 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. Through the CGA PROs network, Hess would have access to 75,100 feet of 18" shoreline protection boom from E3 OMI. **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. Hess's contract Incident Management Team has access to the applicable ACP(s) and GRP(s).

Based on the anticipated worst case discharge scenario, Hess 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 78 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 which include but are not limited to:

- 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

Hess 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, but in coordination to complete a common objective, in a small area and 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 spill management team (SMT) 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 will be 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

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.

Offshore Response Actions

Equipment Deployment
Surveillance

- Surveillance Aircraft will be deployed within two hours of Qualified Individual (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 Airborne Support Inc. (ASI) on standby
- With the Federal On-Scene Coordinator (FOSC), conduct analysis to determine appropriateness of dispersant application
- 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

Dedicated offshore skimming systems
General

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

CGA HOSS Barge

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

CGA FRUs

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

MSRC Oil Spill Response Vessels (OSRV)

- Use in areas with heaviest oil concentrations
- Use as far offshore as allowed

MSRC Responders

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

Storage Vessels

- Establish availability of CGA contracted assets
- 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 Hess's contracted resources as applicable
- Industry vessels 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

In-situ Burn assets

- Determine appropriateness of in-situ burn operation in coordination with the FOSC and affected State On-Scene Coordinator (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 if required
- Determine assets to perform on water operation
- Build operations into safety plan
- Conduct operations in accordance with an approved plan

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. 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.

Near Shore Response Actions

Timing

- Place near shore assets on standby and deploy 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

Equipment Deployment
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)

Vessel Deployment
Dedicated Near Shore skimming systems

- Fast Response Vessels (FRV)
- Egmopol and Marco Shallow Water Skimmer (SWS)
- Operate with aerial spotter directing systems to observed oil slicks

VOO

- Use Hess's contracted resources as applicable
- Industry vessels 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

- Environmental risk assessments (ERA) to determine priorities for area protection
- Time to acquire personnel and equipment and their availability
- Previous contingency planning contained in the appropriate Area Contingency Plan, and currently for Louisiana, The State of Louisiana Initial Oil Spill Response Plan, Deep Water Horizon, dated 2 May 2010

Actions

Placement of boom

- Position boom in accordance with the ERA based on the actual situation or the appropriate ACP
- Assess timing of booming operations to ensure it is where it needs to be at time of impact. 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
- Shoreline Cleanup and Assessment Team 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
- 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 redeployment as necessary
- In-situ burn may be considered when marshes have been impacted
- Passive clean up of marshes should be considered and appropriate stocks of sorbent boom and/or sweep obtained
- Earthen berms and shoreline protection boom may be considered to protect sensitive inland areas

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 Hess's WCD and information in the BSEE Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the BSEE website using 30 day impact. The results are tabulated below.

Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	Conditional Probability (%) within 30 days
Drill and complete 1 well **MC 726, EX002 (Esox West)** *55 miles from shore*	G24101	C59	Cameron, LA Vermilion, LA Terrebonne, LA Lafourche, LA Jefferson, LA **Plaquemines, LA** St. Bernard, LA Walton, FL Bay, FL	1 1 2 2 1 **11** 2 1 1

WCD Scenario– <u>BASED ON WELL BLOWOUT DURING DRILLING OPERATIONS</u> (55 miles from shore)
298,423 bbls of crude oil (Volume considering natural weathering)
API Gravity 37.5°

FIGURE 2 – Equipment Response Time to MC 726, EX002 (Esox West)

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
Aero Commander	NA	2	Houma	2	2	0.8	4.8
MSRC							
737-500	4,125	3	Weyers Cave, VA	2	0.5	1.8	4.3
737-500	4,125	3	Moses Lake, WA	2	0.5	4.3	6.8

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	12	Harvey	6	0	12	9	2	29
95' FRV	22885	249	NA	6	Leeville	2	0	2	6	1	11
95' FRV	22885	249	NA	6	Venice	2	0	3	3.5	1	9.5
95' FRV	22885	249	NA	6	Galveston	2	0	2	20	1	25
95' FRV	22885	249	NA	6	Vermilion	2	0	3	13	1	18
Boom Barge (CGA-300) 42" Auto Boom (25000')	NA	NA	1 Tug 50 Crew	4 (Barge) 2 (Per Crew)	Leeville	8	0	4	17	2	31

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
Genesis Marine (available through CGA)											
GM 11103	NA	111000	1 Tug	6	New Orleans	24	12	0	23	0	59
GM 11104	NA	111000	1 Tug	6	New Orleans	24	12	0	23	0	59
GM 11105	NA	111000	1 Tug	6	New Orleans	24	12	0	23	0	59
GM 13501	NA	135000	1 Tug	6	New Orleans	24	12	0	23	0	59
GM 13502	NA	135000	1 Tug	6	New Orleans	24	12	0	23	0	59
GM 6506	NA	65000	1 Tug	6	New Orleans	24	12	0	23	0	59
GM 6507	NA	65000	1 Tug	6	New Orleans	24	12	0	23	0	59
GM 6508	NA	65000	1 Tug	6	New Orleans	24	12	0	23	0	59
GM 8001	NA	80000	1 Tug	6	New Orleans	24	12	0	23	0	59

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
MSRC											
Louisiana Responder 1 Transrec 350 *2,640' 67" Curtain Pressure Boom*	10567	4000	NA	10	Fort Jackson, LA	2	1	4	6.5	1	14.5
MSRC 401 Offshore Barge 1 Crucial Disk 88/30 *2,640' 67" Curtain Pressure Boom*	11122	40000	3 Tugs	9	Fort Jackson, LA	4	1	6	11	1	23
Mississippi Responder 1 Transrec 350 *2,640' 67" Curtain Pressure Boom*	10567	4000	NA	10	Pascagoula, MS	2	1	2	8.5	1	14.5
MSRC 402 Offshore Barge 1 Crucial Disk 88/30 *2,640' 67" Curtain Pressure Boom*	11122	40300	3 Tugs	9	Pascagoula, MS	4	1	3	15	1	24
S.T. Benz Responder 1 LFF 100 Brush *2,640' 67" Curtain Pressure Boom*	18086	4000	NA	10	Grand Isle, LA	3	1	1	8.5	1	14.5
Gulf Coast Responder 1 Transrec 350 *2,640' 67" Curtain Pressure Boom*	10567	4000	NA	10	Lake Charles, LA	2	1	4	23	1	31
Texas Responder 1 Transrec 350 *2,640' 67" Curtain Pressure Boom*	10567	4000	NA	10	Galveston, TX	2	1	1	28.5	1	33.5
MSRC 570 Offshore Barge 1 Crucial Disk 88/30 *2,640' 67" Curtain Pressure Boom*	11122	56900	3 Tugs	9	Galveston, TX	4	1	2	50	1	58
Southern Responder 1 Transrec 350 *2,640' 67" Curtain Pressure Boom*	10567	4000	NA	10	Ingleside, TX	2	1	2	39	1	45
MSRC 403 Offshore Barge 1 Crucial Disk 88/30 *2,640' 67" Curtain Pressure Boom*	11122	40300	3 Tugs	9	Ingleside, TX	4	1	3	69	1	78
Florida Responder 1 Transrec 350 *2,640' 67" Curtain Pressure Boom*	10567	4000	NA	10	Miami, FL	2	1	1	43	1	48
MSRC 360 Offshore Barge 1 Crucial Disk 88/30 *1,320' 67" Curtain Pressure Boom*	11122	36000	3 Tugs	9	Tampa, FL	4	1	3	44	1	53

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
T&T Marine (available through direct contract with CGA)											
Aqua Guard Triton RBS (1)	22323	2000	1 Utility	6	Galveston	4	12	13	6	2	37
Aqua Guard Triton RBS (1)	22323	2000	1 Utility	6	Harvey	4	12	2	6	2	26
Koseq Skimming Arms (10) Lamor brush	228850	60000	10 OSV	60	Galveston	24	24	13	6	2	69
Koseq Skimming Arms (6) Lamor brush	137310	36000	6 OSV	36	Harvey	24	24	2	6	2	58
Koseq Skimming Arms (6) MariFlex 150 HF	108978	36000	6 OSV	36	Harvey	24	24	2	6	2	58
CGA											
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Vermilion	2	6	6	6	1	21
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Galveston	2	6	13	6	1	28
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Aransas Pass	2	6	18	6	1	33
FRU (1) + 100 bbl Tank (2)	4251	200	1 Utility	6	Lake Charles	2	6	8	6	1	23
FRU (3) + 100 bbl Tank (6)	12753	600	3 Utility	18	Leeville	2	6	5	6	1	20
FRU (2) + 100 bbl Tank (4)	8502	400	2 Utility	12	Venice	2	6	2	6	1	17

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											
Crucial Disk 56/30 Skimmer (1)	5671	500	1 Utility	5	Ingleside	1	2	18	6	1	28
GT-185 Skimmer w Adaptor (1)	1371	500	1 Utility	5	Ingleside	1	2	18	6	1	28
Foilex 250 Skimmer (1)	3977	500	1 Utility	5	Ingleside	1	2	18	6	1	28
Stress I Skimmer (1)	15840	500	1 Utility	5	Ingleside	1	2	18	6	1	28
Walosep W4 Skimmer (1)	3017	500	1 Utility	5	Ingleside	1	2	18	6	1	28
Crucial Disk 88/30 Skimmer (1)	11122	1000	1 PSV	9	Galveston	1	2	13	6	1	23
GT-185 Skimmer w Adaptor (2)	2742	1000	2 Utility	10	Galveston	1	2	13	6	1	23
Walosep W4 Skimmer (1)	3017	500	1 Utility	5	Galveston	1	2	13	6	1	23
Foilex 250 Skimmer (1)	3977	500	1 Utility	5	Galveston	1	2	13	6	1	23
Stress I Skimmer (1)	15840	500	1 Utility	5	Galveston	1	2	13	6	1	23
GT-185 Skimmer w Adaptor (1)	1371	500	1 Utility	5	Port Arthur	1	2	10	6	1	20
Desmi Skimmer (1)	3017	500	1 Utility	5	Lake Charles	1	2	8	6	1	18
Foilex 250 Skimmer (1)	3977	500	1 Utility	5	Lake Charles	1	2	8	6	1	18
GT-185 Skimmer w Adaptor (2)	2742	1000	2 Utility	10	Lake Charles	1	2	8	6	1	18
Stress I Skimmer (2)	31680	1000	2 Utility	10	Lake Charles	1	2	8	6	1	18
LFF 100 Brush Skimmer (1) *1,320' 67" Curtain Pressure Boom*	18086	1000	1 PSV	9	Lake Charles	1	2	8	6	1	18
LFF 100 Brush Skimmer (1) *1,320' 67" Curtain Pressure Boom*	18086	1000	1 PSV	9	Lake Charles	1	2	8	6	1	18
LFF 100 Brush Skimmer (1) *1,320' 67" Curtain Pressure Boom*	18086	1000	1 PSV	9	Lake Charles	1	2	8	6	1	18
Transrec 350 Skimmer (1) *1,320' 67" Curtain Pressure Boom*	10567	1000	1 PSV	9	Lake Charles	1	2	8	6	1	18
Transrec 350 Skimmer (1) *1,320' 67" Curtain Pressure Boom*	10567	1000	1 PSV	9	Lake Charles	1	2	8	6	1	18

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											
Stress I Skimmer (1)	15840	500	1 Utility	5	Grand Isle	1	2	5	6	1	15
LFF 100 Brush Skimmer (1) *1,320' 67" Curtain Pressure Boom*	18086	1000	1 PSV	9	Houma	1	2	3.5	6	1	13.5
Foilex 250 Skimmer (1)	3977	500	1 Utility	5	Belle Chasse	1	2	2	6	1	12
Foilex 200 Skimmer (1)	1989	500	1 Utility	5	Belle Chasse	1	2	2	6	1	12
Crucial Disk 56/30 Skimmer (1)	5671	500	1 Utility	5	Belle Chasse	1	2	2	6	1	12
GT-185 Skimmer w Adaptor (1)	1371	500	1 Utility	5	Fort Jackson	1	2	0.5	6	1	10.5
Walosep W4 Skimmer (1)	3017	500	1 Utility	5	Fort Jackson	1	2	0.5	6	1	10.5
Desmi Skimmer (1)	3017	500	1 Utility	5	Fort Jackson	1	2	0.5	6	1	10.5
Stress I Skimmer (1)	15840	500	1 Utility	5	Fort Jackson	1	2	0.5	6	1	10.5
Crucial Disk 88/30 Skimmer (1) *1,320' 67" Curtain Pressure Boom*	11122	1000	1 PSV	9	Fort Jackson	1	2	0.5	6	1	10.5
Crucial Disk 88/30 Skimmer (1) *1,320' 67" Curtain Pressure Boom*	11122	1000	1 PSV	9	Fort Jackson	1	2	0.5	6	1	10.5
GT-185 Skimmer (1)	1371	500	1 Utility	5	Pascagoula	1	2	5.5	6	1	15.5
Crucial Disk 88/30 Skimmer (1)	11122	1000	1 PSV	9	Pascagoula	1	2	5.5	6	1	15.5
Stress I Skimmer (1)	15840	500	1 Utility	5	Pascagoula	1	2	5.5	6	1	15.5
Stress II Skimmer (1)	3017	500	1 Utility	5	Pascagoula	1	2	5.5	6	1	15.5
Stress I Skimmer (1)	15840	500	1 Utility	5	Tampa	1	2	21	6	1	31
Crucial Disk 56/30 Skimmer (1)	5671	500	1 Utility	5	Tampa	1	2	21	6	1	31
GT-185 Skimmer w Adaptor (1)	1371	500	1 Utility	5	Tampa	1	2	21	6	1	31
GT-185 Skimmer w Adaptor (1)	1371	500	1 Utility	5	Miami	1	2	27	6	1	37
Walosep W4 Skimmer (1)	3017	500	1 Utility	5	Miami	1	2	27	6	1	37
Desmi Skimmer (1)	3017	500	1 Utility	5	Miami	1	2	27	6	1	37
Stress I Skimmer (1)	15840	500	1 Utility	5	Miami	1	2	27	6	1	37

Staging Area: Venice

Offshore Equipment Preferred Staging	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Site	Hrs to Deploy	Total Hrs
CGA											
Hydro-Fire Boom	NA	NA	8 Utility	40	Harvey	0	24	2	6	6	38
MSRC											
67" Curtain Pressure Boom (53570')	NA	NA	80*	160	Houston	1	2	12	6	1	22
1000' Fire Resistant Boom	NA	NA	3*	6	Galveston	1	4	13	6	6	30
16000' Fire Resistant Boom	NA	NA	3*	6	Houston	1	4	12	6	6	29
2000' Hydro Fire Boom	NA	NA	8*	8	Lake Charles	1	4	8	6	6	25

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

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											
Mid-Ship SWS	22885	249	NA	4	Leeville	2	0	N/A	48	1	51
Mid-Ship SWS	22885	249	NA	4	Venice	2	0	N/A	48	1	51
Mid-Ship SWS	22885	249	NA	4	Galveston	2	0	N/A	48	1	51
Trinity SWS	21500	249	NA	4	Leeville	2	0	N/A	48	1	51
Trinity SWS	21500	249	NA	4	Venice	2	0	N/A	48	1	51
Trinity SWS	21500	249	NA	4	Vermilion	2	0	N/A	48	1	51
Trinity SWS	21500	249	NA	4	Galveston	2	0	N/A	48	1	51
46' FRV	15257	65	NA	4	Aransas Pass	2	0	2	25	1	30
46' FRV	15257	65	NA	4	Leeville	2	0	2	2.5	1	7.5
46' FRV	15257	65	NA	4	Vermilion	2	0	2	10	1	15
46' FRV	15257	65	NA	4	Venice	2	0	2	2.5	1	7.5
MSRC											
MSRC Lightning 2 LORI Brush Pack	5000	50	NA	6	Tampa	2	0	1	20	1	24
MSRC Quick Strike 2 LORI Brush Pack	5000	50	NA	6	Lake Charles	2	0	1	10	1	14
Golding Barge Line (Available through contract with CGA)											
GBL 1030	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	48
GBL 1130	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	48
GBL 1230	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	48
GBL 1330	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	48
GBL 1930	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	48
GBL 2030	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	48
GBL 2130	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	48
GBL 2230	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	48
GBL 2330	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	48
GBL 2430	NA	29400	1 Tug	6	New Orleans	24	12	0	12	0	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	Vermilion	2	2	8	2	1	15
SWS Marco	3588	34	NA	3	Leeville	2	2	4.5	2	1	11.5
SWS Marco	3588	34	NA	3	Venice	2	2	2	2	1	9
Foilex Skim Package (TDS 150)	1131	50	1 Utility	3	Vermilion	4	12	8	2	2	28
Foilex Skim Package (TDS 150)	1131	50	1 Utility	3	Galveston	4	12	13	2	2	33
Foilex Skim Package (TDS 150)	1131	50	1 Utility	3	Harvey	4	12	2	2	2	22
4 Drum Skimmer (Magnum 100)	680	100	1 Crew	3	Vermilion	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	Vermilion	2	2	8	2	1	15
2 Drum Skimmer (TDS 118)	240	100	1 Crew	3	Harvey	2	2	2	2	1	9
MSRC											
30 ft. Kvichak *Marco I Skimmer*	3588	24	NA	2	Ingleside	1	1	18	2	1	23
30 ft. Kvichak *Marco I Skimmer*	3588	24	NA	2	Galveston	1	1	13	2	1	18
30 ft. Kvichak *Marco I Skimmer*	3588	24	NA	2	Belle Chasse	1	1	2	2	1	7
30 ft. Kvichak *Marco I Skimmer*	3588	24	NA	2	Pascagoula	1	1	5.5	2	1	10.5
AardVac Skimmer (1)	3840	400	1 Utility	4	Lake Charles	1	1	8	2	1	13
AardVac Skimmer (1)	3840	400	1 Utility	4	Pascagoula	1	1	5.5	2	1	10.5
AardVac Skimmer (2)	7680	800	2 Utility	8	Miami	1	1	27	2	1	32
Queensboro Skimmer (1)	905	400	1 Utility	4	Galveston	1	1	13	2	1	18
Queensboro Skimmer (5)	4525	2000	5 Utility	20	Lake Charles	1	1	8	2	1	13
Queensboro Skimmer (1)	905	400	1 Utility	4	Belle Chasse	1	1	2	2	1	7
Queensboro Skimmer (1)	905	400	1 Utility	4	Pascagoula	1	1	5.5	2	1	10.5
WP 1 Skimmer (1)	3017	400	1 Utility	4	Pascagoula	1	1	5.5	2	1	10.5
WP 1 Skimmer (1)	3017	400	1 Utility	4	Tampa	1	1	21	2	1	26
WP 1 Skimmer (1)	3017	400	1 Utility	4	Miami	1	1	27	2	1	32

Staging Area: Venice

Shoreline Protection Boom	VOO	Persons Req.	Storage/Warehouse Location	Hrs to Procure	Hrs to Loadout	Travel to Venice	Travel to Deployment Site	Hrs to Deploy	Total Hrs
E3 OMI (Available through CGA PROs Network)									
13,500' 18" Boom	6 Crew	12	Belle Chasse, LA	1	1	2	2	3	9
4,400' 18" Boom	2 Crew	4	Gonzalez, LA	1	1	4	2	3	11
10,000' 18" Boom	5 Crew	10	Lake Charles, LA	1	1	8	2	3	15
3,500' 18" Boom	2 Crew	4	Cut Off, LA	1	1	4	2	3	11
2,000' 18" Boom	1 Crew	2	Morgan City, LA	1	1	5	2	3	12
9,700' 18" Boom	5 Crew	10	New Iberia, LA	1	1	6	2	3	13
4,000' 18" Boom	2 Crew	4	Venice, LA	1	1	0	2	3	7
6,000' 18" Boom	3 Crew	6	Deer Park, TX	1	1	12	2	3	19
10,000' 18" Boom	5 Crew	10	La Marque, TX	1	1	13	2	3	20
12,000' 18" Boom	6 Crew	12	Port Arthur, TX	1	1	10	2	3	17

Wildlife Response	EDRC	Storage Capacity	VOO	Persons Req.	From	Hrs to Procure	Hrs to Loadout	Travel to Staging	Travel to Deployment	Hrs to Deploy	Total Hrs
					CGA						
Wildlife Support Trailer	NA	NA	NA	2	Harvey	2	2	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 (24)	NA	NA	NA	2	Vermilion	2	2	8	1	2	15
Bird Scare Guns (24)	NA	NA	NA	2	Leeville	2	2	4.4	1	2	11.4

Response Asset	Total (bbls)
Offshore EDRC	1,216,248
Offshore Recovered Oil Storage	1,289,796
Nearshore / Shallow Water EDRC	291,303
Nearshore / Shallow Water Recovered Oil Storage	303,037

SECTION 9
ENVIRONMENTAL MONITORING INFORMATION

9.1 MONITORING SYSTEMS

Hess will monitor loop currents per the requirements set forth in NTL No. 2018-G01, "Ocean Current Monitoring."

At the time of this submission, the MODU contractor is not yet selected. Hess will utilize a DP drillship, which will have a typical moon pool utilized in all deepwater DP drillships. Accordingly, Hess will comply with the Reasonable and Prudent Measures Implementing Terms and Conditions of the Biological Opinion issued by the National Marine Fisheries Service (NMFS) on March 13, 2020 and the amendment issued on April 26, 2021.

The moon pool will be regularly monitored while open to the water column and when the vessel is not underway. If water conditions are such that observers are unable to see within a meter of the surface, operations requiring lowering or retrieval of equipment through the moon pool will be conducted at a rate that will minimize potential harm, if safety allows. Hess and/or its contractor representatives will attempt to keep hull doors closed when no activity is occurring within the moon pool unless the safety of the crew or vessel require otherwise. This will prevent protected species from entering the confined areas during period of non-activity.

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

If an ESA listed species is observed in the moon pool, prior to movement of the vessel, the vessel will not be moved and equipment will not be deployed or retrieved, to the extent practicable, unless the safety of the crew or vessel requires otherwise. If the observed animal leaves the moon pool, activities will commence. If the observed animal remains in the moon pool, Hess will contact BSEE prior to planned movement of the vessel according to reporting requirements.

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

Should an interaction with equipment or entanglement/entrapment of any ESA listed species occur (e.g., the animal cannot or does not leave the moon pool on its own volition), the interaction will be reported immediately. Any observation of a leatherback sea turtle within a moon pool, regardless of whether interaction with equipment or entanglement/entrapment is observed, will be reported immediately to the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov).
Further, any interaction with equipment or entanglement/entrapment of any ESA listed species (i.e., the animal cannot or does not leave the moon pool of its own volition) will be reported immediately. For assistance with marine mammals and sea turtles, the stranding network listed

at www.fisheries.noaa.gov/report and BSEE at protectedspecies@bsee.gov will be contacted for additional guidance on monitoring requirements, recovery assistance (if required), and incidental report information.

Other ESA listed species (e.g., giant manta ray) will be reported to relevant state agency wildlife lines, the ESA Section 7 biologist and BSEE at protectedspecies@bsee.gov. The vessel will not be moved and equipment will not be deployed or retrieved to/from the pool, to the extent practicable, until NMFS and BSEE are contacted and provide input on how to proceed.

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

9.2 INCIDENTAL TAKES

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

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.

Hess will adhere to the requirements as set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the ESA as a result of the operations conducted herein:

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

9.3 FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY

MC Block 726 is not located in the Flower Garden Banks National Marine Sanctuary; therefore, relevant information is not required in this EP.

SECTION 10
LEASE STIPULATIONS INFORMATION

Exploration activities are subject to the following stipulations attached to Leases OCS-G 24101 MC Block 726.

10.1 MARINE PROTECTED SPECIES

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

(a) Collect and remove flotsam resulting from activities related to exploration, development, and production of this lease;

(b) Post signs in prominent places on all vessels and platforms used as a result of activities related to exploration, development, and production of this lease detailing the reasons (legal and ecological) why release of debris must be eliminated;

(c) Observe for marine mammals and sea turtles while on vessels, reduce vessel speed to 10 knots or less when assemblages of cetaceans are observed, and maintain a distance of 90 meters or greater from whales, and a distance of 45 meters or greater from small cetaceans and sea turtles;

(d) Employ mitigation measures prescribed by BOEM/BSEE or the National Marine Fisheries Service (NMFS) for all seismic surveys, including the use of an “exclusion zone” based upon the appropriate water depth, ramp-up and shutdown procedures, visual monitoring, and reporting;

(e) Identify important habitats, including designated critical habitat, used by listed species (e.g., sea turtle nesting beaches, piping plover critical habitat), in oil spill contingency planning and require the strategic placement of spill cleanup equipment to be used only by personnel trained in less-intrusive cleanup techniques on beaches and bay shores; and

(f) Immediately report all sightings and locations of injured or dead protected species (e.g., marine mammals and sea turtles) to the appropriate stranding network. If oil and gas industry activity is responsible for the injured or dead animal (e.g., because of a vessel strike), the responsible parties should remain available to assist the stranding network. If the injury or death was caused by a collision with the lessee’s vessel, the lessee must notify BOEM within 24 hours of the strike.

BOEM and BSEE issue Notices to Lessees (NTLs), which more fully describe measures implemented in support of the above-mentioned implementing statutes and regulations, as well as measures identified by the U.S. Fish and Wildlife Service and NMFS arising from, among others, conservation recommendations, rulemakings pursuant to the MMPA, or consultation. The lessee and its operators, personnel, and subcontractors, while undertaking activities authorized under this lease, must implement and comply with the specific mitigation measures outlined in NTL No. 2016-BOEM-G01, “Vessel Strike Avoidance and Injured/Dead Protected Species Reporting;” NTL No. 2016-BOEM-G02, “Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program;” and NTL No. 2015-BSEE-G03, “Marine Trash and Debris Awareness and Elimination.” At the lessee’s option, the lessee, its operators, personnel, and contractors may comply with the most current measures to protect species in place at the time an activity is undertaken under this lease, including but not limited to new or updated versions of the NTLs identified in this paragraph. The lessee and its operators, personnel, and

subcontractors will be required to comply with the mitigation measures, identified in the above referenced NTLs, and additional measures in the conditions of approvals for their plans or permits.

SECTION 11
ENVIRONMENTAL MITIGATION MEASURES INFORMATION

11.1 MEASURES TAKEN TO AVOID, MINIMIZE, AND MITIGATE IMPACTS

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

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

11.2 INCIDENTAL TAKES

Hess will adhere to the requirements set forth in the following documents, as applicable, to avoid or minimize impacts to any of the species listed in the Endangered Species Act (ESA) as a result of the operations conducted herein:

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

See **Section 5.7** for a list of Threatened and Endangered Species, Critical Habitat and Marine Mammal Information.

SECTION 12
SUPPORT VESSELS AND AIRCRAFT INFORMATION

12.1 GENERAL

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

The drilling unit, vessels, crew boats and supply boats associated with the operations proposed in this plan will not transit the Rice's whale area.

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

Type	Maximum Fuel Tank Capacity	Maximum Number in Area at Any Time	Trip Frequency or Duration
Crew boat	500 bbl	2	4/week
Supply boat	500 bbl	5	1/week
Helicopter	560 gal	2	5/week

12.2 DIESEL OIL SUPPLY VESSELS

Information regarding vessels to be used to supply diesel oil for fuel and other purposes is provided in the table below.

Size of Fuel Supply Vessel	Capacity of Fuel Supply Vessel	Frequency of Fuel Transfers	Route Fuel Supply Vessel Will Take
220'	~2,700 bbl	3/week	Shortest route from Fourchon Shorebase to MC Blocks 726

12.3 DRILLING FLUID TRANSPORTATION

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

12.4 SOLID AND LIQUID WASTE TRANSPORTATION

A table, "Wastes You Will Transport and/or Dispose of Onshore," is included as **Attachment 12-A.**

12.5 VICINITY MAP

A vicinity map showing the location of the activities proposed herein relative to the shoreline with the distance of the proposed activities from the shoreline and the primary routes of the support vessels and aircraft that will be used when traveling between the onshore support facilities and the drilling unit is included as **Attachment 12-B.**

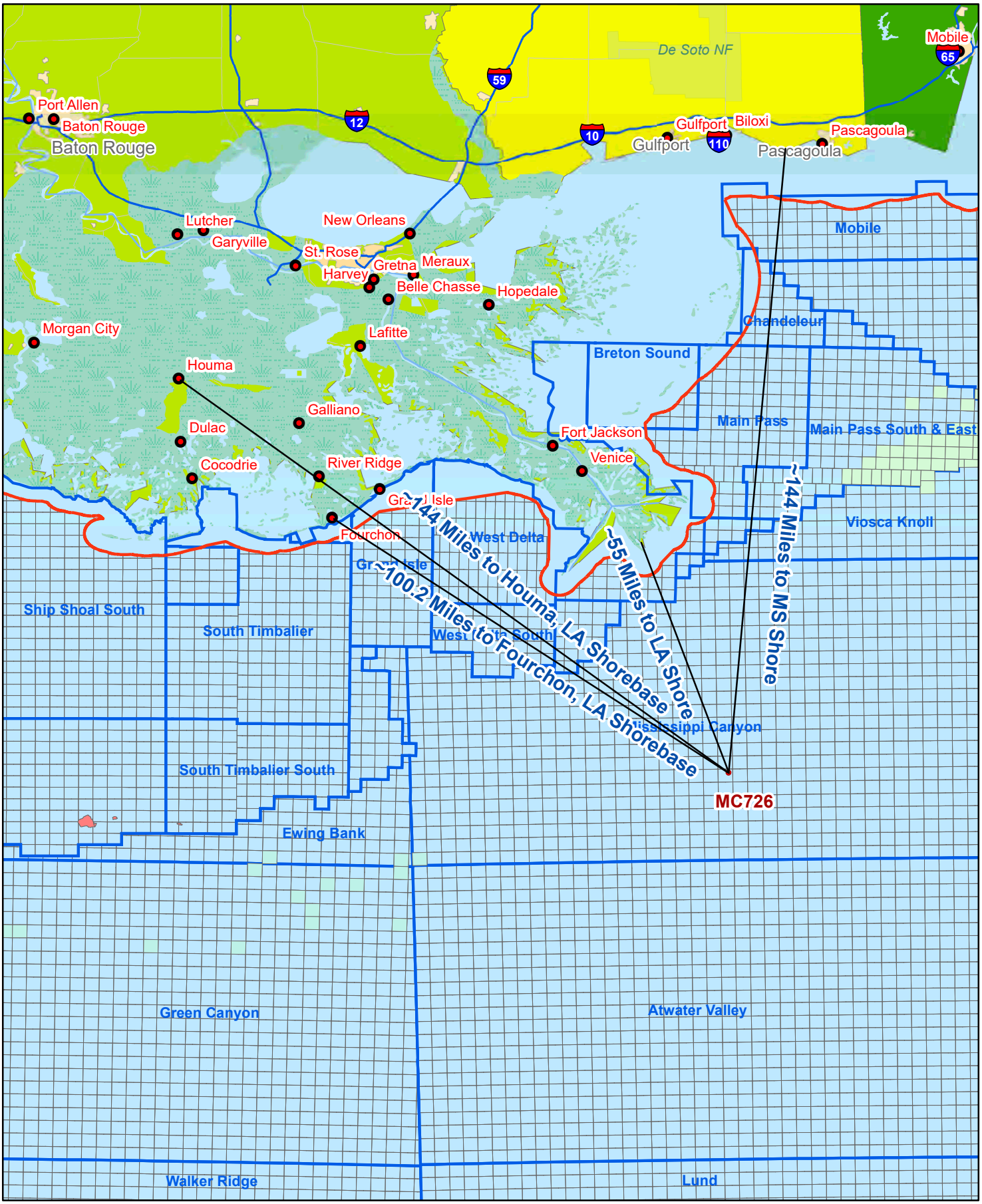
ATTACHMENT 12-A

WASTES YOU WILL TRANSPORT AND/OR DISPOSE OF ONSHORE					
	Projected Generated Wastes	**Solid and Liquid Wastes Transportation**	**Waste Disposal**		
	Composition	**Transport Method**	**Name/Location of Facility**	**Amount(bbls or lbs/well)**	**Disposal Method**
Will drilling occur? If yes, fill in the muds and cuttings.					
Oil-based drilling fluid or mud	N/A	N/A	N/A	N/A	N/A
Synthetic-based drilling fluid or mud	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with water-based fluid	N/A	N/A	N/A	N/A	N/A
Cuttings wetted with Synthetic-based drilling fluid	Internal Olefin Ester Base Mud Cuttings - Polymer - Barite	SBM Cuttings will pass through cuttings dryer to reduce ROC percentage to maintain in compliance with EPA specs and will then be shunt through downpipe below water line. Contingency disposal option will be to ship onshore during closed loop operations.	Baroid Facility in Fourchon, LA	1500 bbls / well estimated as contingency.	Recycled
Cuttings wetted with oil-based fluids	N/A	N/A	N/A	N/A	N/A
Completion Treatment Fluids to be Transported and/or Disposed of Onshore	Pipe dope remover solvent (non aromatic hydrocarbon & terpenes)	Captured in tanks, transferred to MPT's and shipped on PSV to disposal facility	TBD	100 bbls/well	Disposal well
Wll you produce hydrocarbons? If yes fill in produced sand.					
Produced sand	Wells flow to the existing host facility				
Will you have additional wastes that are not permitted for discharge? If yes, fill in the appropriate rows.					
Trash and debris	Generated during operations: paper, cardboard, plastic, glass, and aluminum	Stored in segregated bins on the rig and transported to Port Fourchon, LA via supply boat and then onto proper disposal site.	PU for Disposal as per Classification from Port "C" Terminal - Fourchon, LA by Waste Management.	378,000 lbs/well	Recycled
Used Oil, Oil Filters, Oily Rags, and Absorbent Pads	Used engine oil and products	Proper DOT containers on supply boat.	Univar - Carencro, LA	180 bbl/well	Recycled or incinerated
Wash water	N/A	N/A	N/A	N/A	N/A
Chemical product wastes	N/A	N/A	N/A	N/A	N/A

Attachment 12-B

Hess Corporation

Vicinity Map
Mississippi Canyon 726



SECTION 13
ONSHORE SUPPORT FACILITIES INFORMATION

13.1 GENERAL

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

Name	Location	Existing/New/Modified
Hess Fourchon Shore Base	Fourchon, Louisiana	Existing
ERA Heliport	Houma, Louisiana	Existing

13.2 SUPPORT BASE CONSTRUCTION OR EXPANSION

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

13.3 SUPPORT BASE CONSTRUCTION OR EXPANSION TIMETABLE

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

13.4 WASTE DISPOSAL

The Table, “Wastes You Will Transport and/or Dispose of Onshore, “is included as **Attachment 12-A.**

SECTION 14
COASTAL ZONE MANAGEMENT ACT (CZMA) INFORMATION

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

The activities proposed in this Supplemental EP do not require Coastal Zone Management certification.

SECTION 15
ENVIRONMENTAL IMPACT ANALYSIS

The Environmental Impact Analysis is included as **Attachment 15-A.**

ATTACHMENT 15-A

Hess Corporation (Hess)

Supplemental Exploration Plan
Mississippi Canyon Block 726
OCS-G 24101

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

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

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

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

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

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

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

Abbreviations: E = Endangered; T = Threatened

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

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

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

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

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

(B) Analysis

Site-Specific at Mississippi Canyon Block 726

Proposed operations consist of the drilling and completion of well location EX002.

The operations will be conducted with a drillship or dynamically-positioned MODU.

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

1. Designated Topographic Features

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

Physical disturbances to the seafloor: Mississippi Canyon Block 726 is 48.9 miles from the closest designated Topographic Features Stipulation Block (Sackett Bank); therefore, no adverse impacts are expected. Additionally, a drillship or dynamically-positioned MODU is being used for the proposed activities; therefore, only an insignificant amount of seafloor will be disturbed.

Effluents: Mississippi Canyon Block 726 is 48.9 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-meter depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on corals. Because the crests of topographic features in the Northern Gulf of Mexico are found below 10 meters, oil from a surface spill is not expected to reach their sessile biota. Oil from a subsurface spill is not applicable due to the distance of these blocks from a topographic area. The activities proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8**).

If dispersants were utilized as a response method, the fate and effects of spilled oil would be impacted. Dispersants have been utilized in previous spill response efforts and were used extensively in the response to the Deepwater Horizon oil spill, with both surface and sub-surface applications. Reports on dispersant usage on surface oil indicate that a majority of the dispersed oil remains in the top 10 meters of the water column, with 60 percent of the oil in the top two meters of water (McAuliffe et al, 1981; Lewis and Aurand, 1997; OCS Report BOEM 2017-007). Lubchenco et al. (2010) report that most chemically dispersed surface oil from the Deepwater Horizon explosion and oil spill remained in the top six meters of the water column where it mixed with surrounding waters and biodegraded (BOEM 2017-007). None of the topographic features or

potentially sensitive biological features in the GOM are shallower than 10 meters (33 feet), and only the Flower Garden Banks are shallower than 20 meters (66 feet).

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

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

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

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

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

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

unprecedented volume of dispersants applied for an extended period of time, the U.S. National Response Team has developed guidance for atypical dispersant operations to ensure that planning and response activities will be consistent with national policy (BOEM 2017-007).

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

Due to the distance of these blocks from a topographic area and the coverage of the activities proposed in this plan by Hess's Regional OSRP (refer to information submitted in **Section 8**), impacts to topographic features from surface or sub-surface oil spills are not expected.

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

2. Pinnacle Trend Area Live Bottoms

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

Physical disturbances to the seafloor: Mississippi Canyon Block 726 is 71.3 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected. Additionally, a drillship or dynamically-positioned MODU is being used for the proposed activities; therefore, only an insignificant amount of seafloor will be disturbed.

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms. Although there is little information available on sound detection and sound-mediated behaviors for marine invertebrates, the overall impacts on pinnacle and low-relief feature communities from anthropogenic noise are expected to be negligible (BOEM 2017-009). Additionally, Mississippi Canyon Block 726 is 71.3 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Effluents: Mississippi Canyon Block 726 is 71.3 miles from the closest live bottom (pinnacle trend) area; therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills have the potential to foul benthic communities and cause lethal and sublethal effects on live bottom organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10-meter depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine organisms. Oil from a subsurface spill is not expected to impact pinnacle trend area live bottoms due to the distance of these blocks from a live bottom (pinnacle trend) area and the coverage of the activities proposed in this plan by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

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

3. Eastern Gulf Live Bottoms

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

Physical disturbances to the seafloor: Mississippi Canyon Block 726 is not located in an area characterized by the existence of live bottoms, and this lease does not contain a Live-Bottom Stipulation requiring a photo documentation survey and survey report. Additionally, a drillship or dynamically-positioned MODU is being used for the proposed activities; therefore, only an insignificant amount of seafloor will be disturbed.

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms. Although there is little information available on sound detection and sound-mediated behaviors for marine invertebrates, the overall impacts on pinnacle and low-relief feature communities from anthropogenic noise are expected to be negligible (BOEM 2017-009). Additionally, Mississippi Canyon Block 726 is not located in an area characterized by the existence of live bottoms; therefore, no adverse impacts are expected.

Effluents: Mississippi Canyon Block 726 is not located in an area characterized by the existence of live bottoms; therefore, no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to live bottom organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10-meter depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on marine invertebrates. Oil from a subsurface spill is not expected to impact Eastern Gulf live bottoms due to the distance of these blocks from a live bottom area and coverage of the activities proposed in this plan by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

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

4. Deepwater Benthic Communities

Mississippi Canyon Block 726 is located in water depths 984 feet (300 meters) or greater. Potential IPFs to deepwater benthic communities from the proposed operations include physical disturbances to the seafloor and emissions (noise / sound).

Physical disturbances to the seafloor: Mississippi Canyon Block 726 is approximately 6.3 miles from a known deepwater benthic community site (Mississippi Canyon Block 640), listed in NTL 2009-G40. This Supplemental Exploration Plan submittal includes the required maps, analyses, and statement(s). The proposed activities will be conducted in accordance with NTL 2009-G40, which will ensure that features or areas that could support high-density deepwater benthic communities will not be impacted. Additionally, a drillship or dynamically-positioned MODU 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 drillship or dynamically-positioned MODU, Hess's proposed operations in Mississippi Canyon Block 726 are not likely to impact deepwater benthic communities.

Emissions (noise / sound): All routine OCS oil-and gas-related activities have some element of sound generation. Common sound sources include propeller cavitation, rotating machinery, and reciprocating machinery, which are associated with routine OCS oil-and gas-related activities such as vessel traffic, drilling, construction, and oil and gas production, processing, and transport. Sound introduced into the marine environment as a result of human activities has the potential to affect marine organisms. Although there is little information available on sound detection and sound-mediated behaviors for marine invertebrates, the overall impacts on deepwater benthic communities from anthropogenic noise are expected to be negligible (BOEM 2017-009). Additionally, the proposed activities will be conducted in accordance with NTL 2009-G40, which

will ensure that features or areas that could support high-density deepwater benthic communities will not be impacted.

There are no other IPFs (including effluents, wastes sent to shore for treatment or disposal, and accidents) from the proposed operations that are likely to impact deepwater benthic communities.

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

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

5. Water Quality

Potential IPFs that could result in water quality degradation from the proposed operations in Mississippi Canyon Block 726 include disturbances to the seafloor, effluents, and accidents.

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

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

Activities in the Gulf of Mexico (NMFS, 2020) concludes that exposures to toxicants in discharges from oil and gas activities are not likely to adversely affect ESA-listed species.

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

Drilling Fluid Spills

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

Chemical Spills

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

Oil Spills

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

barrels of oil. Additional information on unlikely scenarios and impacts from very large oil spills are discussed in the Catastrophic Spill Event Analysis white paper (BOEM 2017-007).

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

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

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

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

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

The operations proposed in this plan will be covered by Hess's Regional Oil Spill Response Plan, which discusses potential response actions in more detail (refer to information submitted in **Section 8**).

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

6. Fisheries

There are multiple species of fish in the Gulf of Mexico, including the endangered and threatened species listed in **Table 1** at the beginning of this Environmental Impact Assessment. More information regarding the endangered gulf sturgeon (**Item 20.2**), oceanic whitetip shark (**Item 20.3**), and giant manta ray (**Item 20.4**) can be found below. Potential IPFs to fisheries as a result of the proposed operations in Mississippi Canyon Block 726 include physical disturbances to the seafloor, emissions (noise / sound), effluents, and accidents.

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

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

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

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

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

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

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

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

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

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

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

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

An accidental oil spill has the potential to cause some detrimental effects on fisheries; however, it is unlikely that such an event would occur from the proposed 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 Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

7. Marine Mammals

The latest population estimates for the Gulf of Mexico revealed that cetaceans of the continental shelf and shelf-edge were almost exclusively bottlenose dolphin and Atlantic spotted dolphin. Squid eaters, including dwarf and pygmy killer whale, Risso's dolphin, rough-toothed dolphin, and Cuvier's beaked whale, occurred most frequently along the upper slope in areas outside of anticyclones. The Rice's whale (née Gulf of Mexico Bryde's whale) is the only commonly occurring baleen whale in the northern Gulf of Mexico and has been sighted off western Florida and in the De Soto Canyon region. Florida manatees have been sighted along the entire northern GOM but are mainly found in the shallow coastal waters of Florida, which are unassociated with the proposed actions. A complete list of all endangered and threatened marine mammals in the GOM may be found in **Table 1** at the beginning of this Environmental Impact Assessment. More information regarding the endangered Rice's whale can be found in **Item 20.1** below. Potential IPFs to marine mammals as a result of the proposed operations in Mississippi Canyon Block 726 include emissions (noise / sound), effluents, discarded trash and debris, and accidents.

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

Vessels are the greatest contributors to increases in low-frequency ambient sound in the sea (Andrew et al. 2011). Sound levels and tones produced are generally related to vessel size and speed. Larger vessels generally emit more sound than smaller vessels, and vessels underway with a full load, or those pushing or towing a load, are noisier than unladen vessels. Cetacean responses to aircraft depend on the animals' behavioral state at the time of exposure (e.g., resting, socializing, foraging, or traveling) as well as the altitude and lateral distance of the aircraft to the animals (Luksenburg and Parsons 2009). The underwater sound intensity from aircraft is less than produced by vessels, and visually, aircraft are more difficult for whales to locate since they are not in the water and move rapidly (Richter et al. 2006). Perhaps not surprisingly then, when aircraft are at higher altitudes, whales often exhibit no response, but lower flying aircraft (e.g., approximately 500 meters or less) have been observed to elicit short-term behavioral responses

(Luksenburg and Parsons 2009; NMFS 2017b; NMFS 2017f; Patenaude et al. 2002; Smultea et al. 2008a; Wursig et al. 1998). Thus, aircraft flying at low altitude, at close lateral distances and above shallow water elicit stronger responses than aircraft flying higher, at greater lateral distances and over deep water (Patenaude et al. 2002; Smultea et al. 2008a). Routine OCS helicopter traffic would not be expected to disturb animals for extended periods, provided pilots do not alter their flight patterns to more closely observe or photograph marine mammals. Helicopters, while flying offshore, generally maintain altitudes above 700 feet during transit to and from a working area, and at an altitude of about 500 feet between platforms. The duration of the effects resulting from a startle response is expected to be short-term during routine flights, and the potential effects will be insignificant to sperm whales and Rice's whales. Therefore, we find that any disturbance that may result from aircraft associated with the proposed action is not likely to adversely affect ESA-listed whales.

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

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

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

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

Hess will operate in accordance with the regulations, agency guidance, and Appendix B of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion

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

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

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

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

Vessel personnel must report sightings of any injured or dead protected marine mammal species immediately, regardless of whether the injury or death is caused by their vessel, to the NMFS Southeast Marine Mammal Stranding Hotline at (877) WHALE-HELP (877-942-5343). Additional information may be found at the following website: https://www.fisheries.noaa.gov/report. Any injured or dead protected species should also be reported to takereport.nmfsser@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify

BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

These proposed operations may utilize a moon pool(s) to conduct various subsea activities. Details on moon pool description, monitoring plans, and mitigation efforts are included in **Section 9**. If any marine mammal is detected in the moon pool, Hess will cease operations and contact NMFS at nmfs.psoreview@noaa.gov and BSEE at protectedspecies@bsee.gov and 985-722-7902 for additional guidance and incident report information.

Oil spills have the potential to cause sublethal oil-related injuries and spill-related deaths to marine mammals. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could impact cetacean behavior and/or distribution, thereby causing additional stress to the animals. The effect of oil dispersants on cetaceans is not known. Removing oil from the surface would reduce the likelihood of oil adhering to marine mammals. Laboratory experiments have shown that the dispersants used during the Deepwater Horizon response are cytotoxic to sperm whale cells; however, it is difficult to determine actual exposure levels in the GOM. Therefore, dispersants will only be used if approved by the Regional Response Team in coordination with the RRT Dispersant Plan and RRT Biological Assessment for Dispersants. The acute toxicity of oil dispersant chemicals included in Hess'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 Hess's OSRP (refer to information submitted in accordance with **Section 8**).

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

NMFS Protected Resources Contacts for the Gulf of Mexico:

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

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

8. Sea Turtles

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

Emissions (noise / sound): Noise from drilling activities, support vessels, and helicopters (i.e., non-impulsive anthropogenic sound) may elicit a startle reaction from sea turtles, but this is a temporary disturbance. Responses to sound exposure may include lethal or nonlethal injury, temporary hearing impairment, behavioral harassment and stress, or no apparent response. Vessels are the greatest contributors to increases in low-frequency ambient sound in the sea (Andrew et al. 2011). Sound levels and tones produced are generally related to vessel size and speed. Larger vessels generally emit more sound than smaller vessels, and vessels underway with a full load, or those pushing or towing a load, are noisier than unladen vessels. Routine OCS helicopter traffic would not be expected to disturb animals for extended periods, provided pilots do not alter their flight patterns to more closely observe or photograph marine mammals. Helicopters, while flying offshore, generally maintain altitudes above 700 feet during transit to and from a working area, and at an altitude of about 500 feet between platforms. The duration of the effects resulting from a startle response is expected to be short-term during routine flights and the potential effects will be insignificant to sea turtles. Therefore, we find that any disturbance that may result from aircraft associated with the proposed action is not likely to adversely affect sea turtles. Construction and operational sounds other than pile driving should have insignificant effects on sea turtles; effects would be limited to short-term avoidance of construction activity itself rather than the sound produced. As a result, sound sources associated with support vessel movement as part of the proposed operations are insignificant and therefore are not likely to adversely affect sea turtles.

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

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, 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).

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

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

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

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

collision with the operator's vessel, an entrapment within the operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

Details on moon pool description, monitoring plans, and mitigation efforts are included in **Section 9**. If any sea turtle is detected in the moon pool, Hess will cease operations and contact NMFS at nmfs.psoreview@noaa.gov and BSEE at protectedspecies@bsee.gov and 985-722-7902 for additional guidance and incidental report information. The procedures found in Appendix J of the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion will be employed to free entrapped or entangled marine life safely.

All sea turtle species and their life stages are vulnerable to the harmful effects of oil through direct contact or by fouling of their food. Exposure to oil can be fatal, particularly to juveniles and hatchlings. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to the possibility of collisions with sea turtles. The activities proposed in this plan will be covered by Hess's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Section 8**).

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

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

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

9. Air Quality

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

Mississippi Canyon Block 726 is located 85.3 miles from the Breton Wilderness Area and 54 miles from shore. Applicable emissions data is included in **Section 7** of the Plan.

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

which could cause the emission of air pollutants. However, these releases would not impact onshore air quality because of the prevailing atmospheric conditions, emission height, emission rates, and the distance of Mississippi Canyon Block 726 from the coastline.

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

10. Shipwreck Sites (known or potential)

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

Potential IPFs to known or unknown shipwreck sites as a result of the proposed operations in Mississippi Canyon Block 726 include physical disturbances to the seafloor and accidents.

Physical disturbances to the seafloor: A drillship or dynamically-positioned MODU 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 drillship or dynamically-positioned MODU, Hess's proposed operations in Mississippi Canyon Block 726 are not likely to impact shipwreck sites.

Additionally, Mississippi Canyon Block 726 is not located in or adjacent to an OCS block designated by BOEM as having a high probability for occurrence of shipwrecks. Should Hess discover any evidence of a shipwreck, they will immediately halt operations within a 1000-foot radius, report to BOEM within 48 hours, and make every reasonable effort to preserve and protect that cultural resource.

Accidents: An accidental oil spill has the potential to cause some detrimental effects to shipwreck sites if the release were to occur subsea. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). The activities proposed in this plan will be covered by Hess's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Section 8**).

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

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11. Prehistoric Archaeological Sites

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

Potential IPFs to prehistoric archaeological sites as a result of the proposed operations in Mississippi Canyon Block 726 are physical disturbances to the seafloor and accidents. Should Hess discover any object of prehistoric archaeological significance, they will immediately halt operations within a 1000-foot radius, report to BOEM within 48 hours, and make every reasonable effort to preserve and protect that cultural resource.

Physical Disturbances to the seafloor: Although the operations proposed will be conducted by utilizing a drillship or dynamically-positioned MODU, which would cause only an insignificant amount of seafloor to be disturbed, Mississippi Canyon Block 726 is located inside the Archaeological Prehistoric high probability lines set by earlier agency guidance. Hess 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 Hess's Regional Oil Spill Response Plan (refer to information submitted in accordance with **Section 8**).

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

Vicinity of Offshore Location

12. Essential Fish Habitat (EFH)

Potential IPFs to EFH as a result of the proposed operations in Mississippi Canyon Block 726 include physical disturbances to the seafloor, effluents, and accidents. EFH includes all estuarine and marine waters and substrates in the Gulf of Mexico.

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

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 Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

13. Marine and Pelagic Birds

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

Emissions:

Air Emissions

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

Noise / Sound Emissions

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

The use of explosives for decommissioning activities may potentially kill one or more birds from barotrauma if a bird (or several birds because birds may occur in a flock) is present at the location of the severance. For the impact of underwater sound, a threshold of 202 dB sound exposure level (SEL) for injury and 208 dB SEL for barotrauma was recommended for the Brahyramphus marmoratus, a diving seabird (USDOI, FWS, 2011). However, the use of explosive severance of

facilities for decommissioning are not included in these proposed operations, therefore these impacts are not expected.

Accidents: An oil spill would cause localized, low-level petroleum hydrocarbon contamination. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Marine and pelagic birds feeding at the spill location may experience chronic, nonfatal, physiological stress. It is expected that few, if any, coastal and marine birds would actually be affected to that extent. The activities proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

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

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

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

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

14. Public Health and Safety Due to Accidents.

There are no IPFs (including emissions, effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, and accidents, including an accidental H_2S release) from the proposed activities that are likely to impact public health and safety. In accordance with NTL No.'s 2008-G04, 2009-G27, and 2009-G31, sufficient information is included in **Section 4** to justify our request that our proposed operations be classified by BSEE as H_2S absent.

Coastal and Onshore

15. Beaches

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

Accidents: Oil spills contacting beaches would have impacts on the use of recreational beaches and associated resources. Due to the distance from shore (54 miles) and the response capabilities that would be implemented, no significant adverse impacts are expected. The operations proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

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

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

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

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

16. Wetlands

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

Accidents: It is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Due to the distance from shore (54 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

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

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

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

17. Shore Birds and Coastal Nesting Birds

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

Accidents: Oil spills could cause impacts to shore birds and coastal nesting birds. However, it is unlikely that an oil spill would occur from the proposed activities (refer to **Item 5**, Water Quality). Given the distance from shore (54 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

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

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

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

18. Coastal Wildlife Refuges

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

Accidents: An accidental oil spill from the proposed activities could cause impacts to coastal wildlife refuges. However, it is unlikely that an oil spill would occur from the proposed activities (refer to Item 5, Water Quality). Due to the distance from shore (54 miles) and the response capabilities that would be implemented, no impacts are expected. The operations proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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).

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

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

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

19. Wilderness Areas

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

Accidents: An accidental oil spill from the proposed activities could cause impacts to wilderness areas. However, it is unlikely that an oil spill would occur from the proposed operations (refer to **Item 5**, Water Quality). Due to the distance from the nearest designated Wilderness Area (85.3 miles) and the response capabilities that would be implemented, no significant adverse impacts are expected. The operations proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8).**

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).

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

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

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

20. Other Environmental Resources Identified

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

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

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

The Rice's whale (née Gulf of Mexico Bryde's whale) is the only commonly occurring baleen whale in the northern Gulf of Mexico and has been sighted off western Florida and in the De Soto Canyon region. The Rice's whale area is over 69 miles from the proposed operations. Additionally, vessel traffic associated with the proposed operations will not flow through the Rice's whale area. Therefore, there are no IPFs from the proposed operations that are likely to impact the Rice's whale. Additional information on marine mammals may be found in **Item 7**.

20.2 – Gulf Sturgeon

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

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

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

Should an ESA-listed fish (e.g., giant manta ray, oceanic whitetip shark, or Gulf sturgeon) be entrapped, entangled, or injured, personnel should contact the ESA Section 7 biologist at (301) 427-8413 (nmfs.psoreview@noaa.gov) and report all incidents to takereport.nmfsser@noaa.gov. After making the appropriate notifications, Hess may call BSEE at (985) 722-7902 for questions or additional guidance on recovery assistance needs, continued monitoring requirements, and incidental report information which at minimum is detailed below. Additional information may be found at the following website: https://www.fisheries.noaa.gov/report. Any injured or dead protected species should also be reported to takereport.nmfsser@noaa.gov. In addition, if the injury or death was caused by a collision with the operator's vessel, an entrapment within the

operator's equipment or vessel (e.g. moon pool), or an entanglement within the operator's equipment, the operator must further notify BOEM and BSEE within 24 hours of the strike or entrapment/entanglement by email to protectedspecies@boem.gov and protectedspecies@bsee.gov. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

Due to the distance from the nearest identified Gulf sturgeon critical habitat (120.3 miles) and the response capabilities that would be implemented during a spill, no significant adverse impacts are expected to the Gulf sturgeon. Considering the information from the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, the location of this critical habitat in relation to proposed operations, the likely dilution of oil reaching nearshore areas, and the on-going weathering and dispersal of oil over time, we do not anticipate the effects from oil spills will appreciably diminish the value of Gulf sturgeon designated critical habitat for the conservation of the species. The operations proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8)**.

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

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

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

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

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

20.3 – Oceanic Whitetip Shark

Oceanic whitetip sharks may be found in tropical and subtropical waters around the world, including the Gulf of Mexico (Young 2016). According to the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, Essential Fish Habitat (EFH) for the oceanic whitetip shark includes localized areas in the central Gulf of Mexico and Florida Keys. Oceanic whitetip sharks were listed as threatened under the Endangered Species Act in 2018 due to worldwide overfishing. Oceanic whitetip sharks had an abundant worldwide population, which has been threatened in recent years by inadequate regulatory measures governing fisheries; therefore, there is little research regarding the impact of oil and gas operations on oceanic whitetip sharks (NMFS, 2020). IPFs that have been determined by NMFS to be discountable to oceanic whitetip sharks include vessel strike, emissions (noise / sound), discharges, entanglement and entrapment, and marine debris. Potential IPFs to oceanic whitetip sharks as a result of the proposed operations in Mississippi Canyon Block 726 include accidents. Additional information on ESA-listed fish may be found in **Item 6**.

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

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

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

There is little information available on the impacts of oil spills or dispersants on oceanic whitetip sharks. It is expected that exposure of oil or dispersants to oceanic whitetip sharks would likely result in effects similar to other marine species, including fitness reduction and the possibility of mortality (NMFS, 2020). Due to the sparse population in the Gulf of Mexico, it is possible that a small number of oceanic whitetip sharks could be impacted by an oil spill. However, it is unlikely that such an event would occur from the proposed activities (refer to **Item 5**, Water Quality). The operations proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

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

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

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

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

20.4 – Giant Manta Ray

According to the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, the giant manta ray lives in tropical, subtropical, and temperate oceanic waters and productive coastlines throughout the Gulf of Mexico. While uncommon in the Gulf of Mexico, there is a population of approximately 70 giant manta rays in the Flower Garden Banks National Marine Sanctuary (Miller and Klimovich 2017). Giant manta rays were listed as threatened under the Endangered Species Act in 2018 due to worldwide overfishing. Giant manta rays had an abundant worldwide population, which has been threatened in recent years by inadequate regulatory measures governing fisheries; therefore, there is little research regarding the impact of oil and gas operations on giant manta rays (NMFS, 2020). IPFs that have been determined by NMFS to be discountable to giant manta rays include vessel strike, emissions (noise / sound), discharges, entanglement and entrapment, and marine debris. Potential IPFs to giant manta rays as a result of the proposed operations in Mississippi Canyon Block 726 include accidents. Additional information on ESA-listed fish may be found in **Item 6**.

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

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

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

There is little information available on the impacts of oil spills or dispersants on giant manta rays. It is expected that exposure of oil or dispersants to giant manta rays would likely result in effects similar to other marine species, including fitness reduction and the possibility of mortality (NMFS, 2020). It is possible that a small number of giant manta rays could be impacted by an oil spill in the Gulf of Mexico. However, due to the distance to the Flower Garden Banks (189.5 miles), the low population dispersed throughout the Gulf of Mexico, and the response capabilities that would be implemented during a spill, no significant adverse impacts are expected to impact giant manta rays. Additionally, it is unlikely that such an event would occur from the proposed activities (refer to **Item 5**, Water Quality). The operations proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

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

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

environmentally persistent materials such as plastic or glass. Hess will also collect and remove flotsam resulting from activities related to proposed operations.

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

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

20.5 – Loggerhead Sea Turtle

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

There are multiple IPFs that may impact loggerhead sea turtles (see **Item 8**). However, the closest loggerhead nearshore reproductive critical habitat is located 136.8 miles from Mississippi Canyon Block 726; therefore, no adverse impacts are expected. Additionally, considering the information from the National Marine Fisheries Service Endangered Species Act (ESA) Section 7 Biological Opinion, we do not expect proposed operations to affect the ability of *Sargassum* to support adequate prey abundance and cover for loggerhead turtles.

20.6 - Protected Corals

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

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

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

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed operations (refer to statistics in **Item 5**, Water Quality). Oil spills cause damage to corals only if the oil contacts the organisms. Due to the distance from the Flower Garden Banks National Marine Sanctuary (189.5 miles) and other critical coral habitats, no adverse impacts are expected. The operations proposed in this plan will be covered by Hess's Regional OSRP (refer to information submitted in **Section 8**).

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

20.7 - Endangered Beach Mice

There are four subspecies of endangered beach mouse that are found in the dune systems along parts of Alabama and northwest Florida. Due to the location of Mississippi Canyon Block 726 and the beach mouse critical habitat (above the intertidal zone), there are no IPFs that are likely to impact endangered beach mice.

20.8 - Navigation

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

(C) IMPACTS ON PROPOSED ACTIVITIES

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

(D) ENVIRONMENTAL HAZARDS

During the hurricane season, June through November, the Gulf of Mexico is impacted by an average of ten tropical storms (39-73 mph winds), of which six become hurricanes (> 74 mph winds). Due to its location in the Gulf, Mississippi Canyon Block 726 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. Structure Installation
   Operator will not conduct structure installation operations during Tropical Storm or Hurricane threat.

(E) ALTERNATIVES

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

(F) MITIGATION MEASURES

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

(G) CONSULTATION

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

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

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SECTION 16
ADMINISTRATIVE INFORMATION

16.1 EXEMPTED INFORMATION DESCRIPTION

The proposed bottomhole location of the planned well has been removed from the Public Information copy of this EP as well as any discussions of the target objectives, geologic or geophysical data, and interpreted geology.

16.2 BIBLIOGRAPHY

1. Geoscience Earth & Marine Services, Inc. (GEMS), Site Clearance Letter, Proposed Wellsite MC726 EX002, Block 726 (OCS-G 24101), Mississippi Canyon Area, Gulf of Mexico, Project No. 1123-3225.

2. Initial Exploration Plan, Control No. N-8488.

3. Supplemental Exploration Plan, Control No. S-6913.

4. Supplemental Exploration Plan, Control No. S-7558.

5. Revised Exploration Plan, Control No. R-6839.

6. Revised DOCD, Control No. R-6739.