Letter of Authorization Application

BOEM Control Number:
L25-014

Requested Period of Effectiveness:
Start Date: December 1, 2025
End Date: April 19, 2026

Type of Survey:

Please indicate which type of survey will be used in the proposed activity

_X_ Deep Penetration Seismic (greater than 1,500 in^3 total airgun array volume)
- 2D Seismic-towed Streamer
- 2D Seismic-Seafloor Cable or Nodes
- 3D Seismic-towed Streamer
- 3D Seismic-Seafloor Cable or Nodes
- 4D (Time Lapse) - Towed Streamer
- 4D (Time Lapse) - Seafloor Cable or Nodes
- NAZ
- WAZ
- Vertical Cable
- Borehole Seismic (VSP)

___ Shallow Penetration Seismic (less than 1,500 in^3 total airgun array volume)
- Surface Vessel
- Surface Vessel and AUV/ROV
- Borehole Seismic (VSP)

___ HRG Surveys (no airguns used)
- Surface vessel
- AUV/ROV
- Both

___ Other
Describe (if Other):

Survey Area and Operational Plan:

Question:	Response
Location: (Lease Block(s), Facility or Prospect Name, Lat/Lon, etc.)	Lease Blocks: Centered on Lease Blocks Walker Ridge 634, 677, and 678. Lat: 26° 17' 21" N Lon: 91° 05' 07"
Overall Duration of the Activity (days):	Up to 160 days
Areal extent of the survey area: (in OCS lease blocks or km^2) (Attach GIS file(s) of survey lines and/or survey area perimeter)	Lease Blocks: All or portions of 435 Lease Blocks centered on Lease Block Walker Ridge 678 ~9,660 km^2
G&G ITR/PEIS Modeling Zone(s) in which the activity will occur (1-7):	Zone 7
Number of days during the overall activity period on which the sound source(s) listed in Section C will operate: (If the activity will occur in more than one Modeling Zone, provide the number of operating days within each modeling zone.)	60 days Months during which the survey may take place: January-April

Sound Sources:

- List the same sound sources provided in response to question #3 in "Section D Proprietary Information Attachment" to the BOEM G&G Permit Application and indicate their duration of use.

Energy Source	**Manu-facturer**	**Model**	**Total Array Volume & Number of Elements** (cubic inches or Liters.)	**Source Level (SL) in dB re 1µPa@1m in water** (RMS)	**Source Level (SL) in dB re 1µPa@1m in water** (Peak to Peak)	**Operating Frequency** (Hz, kHz, range)	**Pulse Duration** (seconds, milli-seconds)	**Pulse Rate (or Cycle)** (Pulses per second or minute)	**Towing Depth of the Source** (ft or m)	**Towing Depth of the Receiver(s)** (ft or m)	**Duration of Use** (Number of Days or Percent of Active Sound Source Days)
*Air Gun array previously used by CVX	Bolt	1900LLXT	5220 cu in 42 elements	241	267	6-70Hz	200 ms	10.8 pulses/sec for 4.5 knot Vessel speed	12 m	Not applicable to OBN	60 days of shooting
PIES (Pressure Inverted Echo Sounder)	Sonardyne	8302-3116	N/A	190-202 dB	80-120 dB	14-20 kHz	N/A	1 pulse every 30 seconds	Placed on seabed	Placed on seabed	160

Take Estimate:

Since Level B takes are based on the number of individuals exposed above SPL_{rms} thresholds (see Wood et al. 2012; NMFS 2018) over a 24-hour period, regardless of the duration of an exposure, the area covered (in square kilometers) by a source vessel (or source vessels) within 24-hrs is directly related to the number of Level B takes that may occur. Thus, comparing the area covered over a 24-hour period by the source vessel(s) in the different Survey Types simulated in the exposure modelling (Zeddies et al. 2015) to the area expected to be covered during a planned survey provides a means to select the Survey Type most appropriate for the planned survey.

In the exposure modelling conducted by Zeddies et al. (2015; pg. D-157), the Coil survey type assumed four source vessels sailing at 4.9 knots (2.5 m/s) along a series of overlapping circles 12.5 km in diameter. This circular pattern concentrated survey activities in a smaller area relative to the patterns used to simulate 2D, 3D NAZ, and 3D WAZ Survey Types. The survey area in which the Coil survey pattern was simulated was 58 km x 58 km, or 3,364 km^2. Over the course of the 7-day simulation, 30% of the area was covered (1,009 km^2) or 144 km^2 per day.

The other Survey Types were simulated in a different sized survey area (145 km x 48 km) using 2 to 4 survey vessels sailing at 4.5 or 4.9 kts along various patterns resulting in the following estimated areas covered:

2D – 5,568 km^2 in 7 days or 795 km^2 per day;
3D NAZ – 1,392 km^2 in 7 days or 199 km^2 per day;
3D WAZ – 5,916 km^2 in 7 days or 845 km^2 per day.

The planned 3D OBN survey will involve one or two source vessels sailing along closely spaced survey lines that are approximately 100–150 m apart and approximately ~40 km in length. The source vessel(s) will optimize line turns using a “racetrack” or “teardrop” pattern to sail on adjacent or nearby lines 100–1,000 m apart. With this relatively tight line spacing and at a survey speed of 4.0–4.5 knots (7.3–8.3 km/hr), the area covered by this single source vessel will be about 72.4 km^2 per week, or 10.3 km^2 per day. Therefore, the Coil Survey Type was selected in the take calculator because the area covered during that simulated survey most closely matches that of the area to be covered by the single source vessel operating during the planned 3D OBN survey.

Zeddies, D., S. Denes, C. Pyc. 2017. Gulf of Mexico Acoustic Exposure Model Variable Analysis. Prepared by JASCO Applied Sciences (USA) Inc. for International Association of Geophysical Contractors and American Petroleum Institute. 171 pp.

Take Estimate Table:

Chevron used the "Gulf of Mexico Seismic Survey Exposure Calculator" dated 5/25/2022 to evaluate the number of potential takes from 60 days of survey activity in months January through April 19, 2026 by iteratively starting with each successive month and entering the maximum number of survey days possible into that month and each subsequent month until the total 60 survey days was reached. Since the survey will not occur after April 19, 2026, the latest start date would be February 18, 2026. This start date was used to calculate the potential takes associated with starting the survey in "March." This exercise showed that there was no time during this period when 60 survey days in this location would potentially cause more than small numbers of takes for any species or stock. The greatest number of total takes were calculated when assuming the survey would start in January month, and the highest percentage of any one species (or species guild) was also found if the survey were to start in January months (striped dolphin, 24.2%; see table below).

User Selections

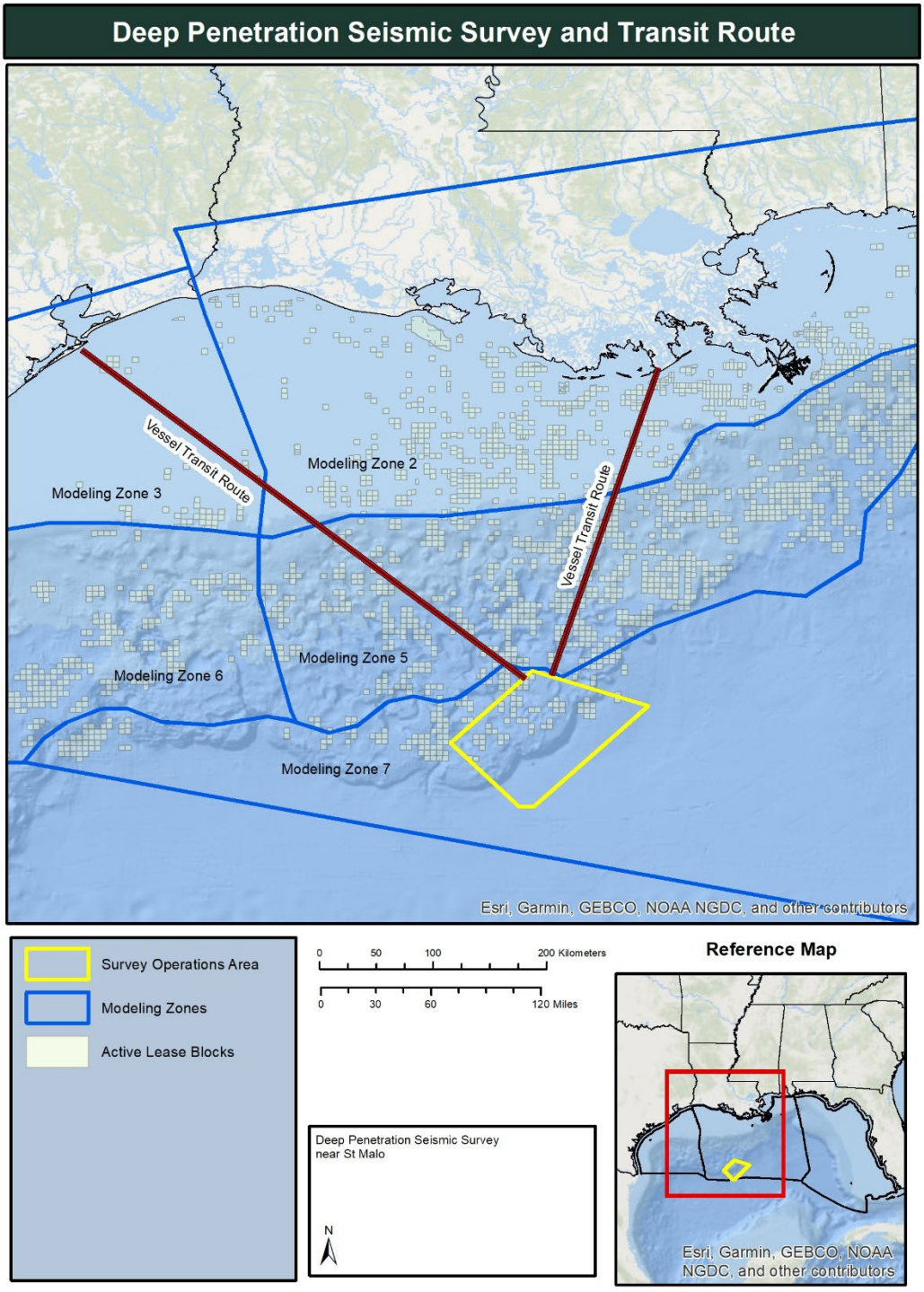
Parameters	
Survey Type	*COIL*
Zone Number	*7*
Array	*5110cuin*

# of Days per Month					
jan	31	may		sep	
feb	28	jun		oct	
mar	1	jul		nov	
apr		aug		dec	

Exposures by Metric

F.H.G	Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total (No Level B Scaling)	Level A Colour Legend / Total (Including Level B Scaling)
Level A															Level A SEL > Level A Peak
LF	Rice's whale	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**< 0.01**	Level A Peak > Level A SEL
HF	Kogia spp.[a]	9.87	8.92	0.32	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**19.11**	Total (Including Level B Scaling)
Level B															
LF	Rice's whale	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**< 0.01**	**< 0.01**
MF	Atlantic spotted dolphin	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**0.02**	**< 0.01**
	Bottlenose dolphin	1.90	2.48	0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**4.48**	**1.29**
	Clymene dolphin	949.89	720.34	14.80	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**1,685.04**	**483.61**
	Beaked whales[b]	38.73	33.44	1.23	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**73.40**	**7.41**
	Fraser's dolphin[d]	195.90	176.94	6.32	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**379.15**	**108.82**
	Blackfish[c]	1,578.97	1,454.78	40.18	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**3,073.92**	**906.81**
	Pantropical spotted dolphin	6,382.68	6,189.63	153.34	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**12,725.65**	**3,652.26**
	Risso's dolphin	29.83	23.52	0.88	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**54.23**	**16.00**
	Rough-toothed dolphin[d]	423.43	382.45	13.66	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**819.54**	**235.21**
	Short-finned pilot whale	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**< 0.01**	**< 0.01**
	Sperm whale	95.95	85.97	3.23	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**185.15**	**78.32**
	Spinner dolphin	46.81	42.61	1.55	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**90.97**	**26.11**
	Striped dolphin	2,774.82	1,927.02	40.30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**4,742.13**	**1,360.99**
HF	Kogia spp.[a]	134.01	121.04	4.32	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	**259.38**	**83.26**

Mitigation and Monitoring:

All monitoring and mitigation measures in the ITRs applicable to Airgun Surveys with a total volume >1,500 in^3 (Deep Penetration) will be followed.

Map showing the Survey Area and Transit Route