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July 1, 2019

Regarding Application for: WesternGeco
Application Number: HNN-BMBP-FT3KS

I am writing to ask SCDHEC to determine that seismic airgun exploration is inconsistent with South Carolina's Coastal Management Program due to its deleterious impact on sea turtles and on commercial and recreational fisheries.

As you are undoubtedly aware, *every* mayor in every South Carolina coastal city and town as well as Columbia and Greenville oppose seismic testing and drilling. Governor McMaster, Attorney General Alan Wilson, Congressmen Rice, Wilson, Cunningham and Clyburn as well as scores of SC Senators and Representatives also oppose seismic surveys and drilling.

More pertinent to WesternGeco's request are the following resolutions from Atlantic fishing groups which oppose seismic surveys:

- **[NC Catch](#)**: Resolution expressing opposition to offshore oil and gas activities in North Carolina 2/07/2018 (offshore drilling and seismic blasting)
- **[Outer Banks Catch](#)**: Resolution opposing offshore drilling in the Atlantic Ocean off the coast of North Carolina 2/03/2018 (offshore drilling and seismic blasting)
- **[Northwest Marine Alliance](#)**: Sent letter to NOAA 7/21/2017 (seismic blasting)
- **[New England Fishery Management Council](#)**: (6/29/2017), **[Mid-Atlantic Fishery Management Council](#)** (4/25/2017) and **[South Atlantic Fishery Management Council](#)** (4/25/2017): Sent letters to Interior Secretary Zinke expressing concerns with the risks posed by seismic surveys and oil and gas development to managed resources, fisheries and coastal communities along the Atlantic coast.
- **[Maryland Saltwater Sportfishing Association](#)**: Sent letter to President opposing offshore oil exploration and development in the Atlantic 11/10/2016 (offshore drilling and seismic blasting)
- **[Snook and Gamefish Foundation](#)**: Sent letter to BOEM opposing offshore oil exploration in the Atlantic 8/30/2016 (seismic blasting)
- **[Southern Shrimp Alliance](#)**: Sent letter to BOEM opposing offshore oil exploration in the Atlantic 6/24/2016 (seismic blasting)
- **[36 commercial and recreational fishing interests in the Mid-Atlantic](#)**: Sent letter to the governors of Delaware, Maryland and Virginia, expressing their concerns with offshore drilling and proposed seismic airgun blasting 3/29/2016 (offshore drilling and seismic blasting)
- **[Mid-Atlantic Fishery Management Council](#)**: Updated and strengthened its policies to increase protection for fisheries and fish habitat from energy exploration and



development activities for the species and areas the Council is charged with managing 2/17/2016 ([Read the full policy](#))

- [South Atlantic Fishery Management Council](#): Updated and strengthened its policies to increase protection for fisheries and fish habitat from energy exploration and development activities for the species and areas the Council is charged with managing 12/14/2015
- [Fisheries Survival Fund](#): Sent letter to the Mid-Atlantic Fishery Management Council expressing concern 8/7/2015 (offshore drilling and seismic blasting)
- [South Atlantic Fishery Management Council](#): Sent letter to BOEM 4/30/2015 (seismic blasting)
- [Gullah/Geechee Fishing Association](#): Submitted comments to BOEM 3/30/2015 (offshore drilling and seismic blasting)
- [Southeastern Fisheries Association](#): Sent letter to President Obama 12/3/2014 (seismic blasting)
- [Billfish Foundation](#): Sent letter to BOEM 5/7/2014 (seismic blasting)
- [International Game Fish Association](#): Sent letter to BOEM 5/1/2014 (seismic blasting); sent [letter to BOEM and DOC](#) 8/3/2017 (seismic blasting and offshore drilling)
- [Mid-Atlantic Fishery Management Council](#): Sent letter to BOEM 5/2/2014 (seismic blasting)

The actual resolution/letters are available by clicking on the blue organization name or can be found at: <https://usa.oceana.org/climate-and-energy/grassroots-opposition-offshore-drilling-and-exploration-atlantic-ocean-and>

As you know, seismic airgun exploration is an extremely loud and dangerous process used to search for potential oil and gas deposits miles below the seafloor. The airgun blasts -- one of the loudest manmade noises in the ocean -- are discharged every 10-12 seconds, 24 hrs/day for months at a time. The noise can be heard more than 2,500 miles from the source, approximately the distance from New York to Las Vegas. Five companies, some of which are internationally based, have received Incidental Harassment Authorizations (IHAs) from NOAA. The standard they must meet to obtain the IHA is that the number of takings would:

- be of small numbers,
- have no more than a "[negligible impact](#)" on those marine mammal species or stocks, and
- not have an "[unmitigable adverse impact](#)" on the availability of the species or stock or "[subsistence](#)" uses."

I contend that WesternGeco and the other four companies did **not** meet this standard.

The seismic companies will be running over 90,000 miles of seismic lines across all the Mid- and South Atlantic Planning Areas, roughly 170 million acres. Combined, they will run a total of 849 days of seismic within a one-year permit period. This is an unprecedented amount of noise. When comparing this amount of seismic to all the seismic run from 1968 through 1997, there is no other year in any federal OCS area that ran this much seismic.¹

Dates and Duration

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Seismic Company	Dates	Duration (days)
Spectrum	February-July	108
TGS	Year-long	308
ION	July-December	70
Western	Year-long	208
CGG	July-December	155

- Seismic operations typically occur 24 hours per day.

Takes of Marine Mammals Incidental to Specified Activities; A Notice by the National Oceanic and Atmospheric Administration on 12/07/2018

<https://www.federalregister.gov/documents/2018/12/07/2018-26460/takes-of-marine-mammals-incident-to-specified-activities-taking-marine-mammals-incident-to>

The five companies collectively have received permission for more than 375,000 individual Level B whale and dolphin “takes,” and the proposed mitigation only compresses the time frame during which the airgun blasts occur. There is nothing “small” or “negligible” about that impact, given that the airgun sound travels thousands of miles. There is nowhere for the impacted mammals like whales, dolphins and sea turtles to escape the noise, and we know the noise negatively affects mammals’ ability to communicate, navigate, feed and mate. **For small populations of mammals, such as the fewer than 500 North Atlantic Right Whales, this amount of noise will certainly cause population-level adverse impact.**

On January 5, 2017, in one of her last acts as BOEM Director, Abigail Hopper stated: “I believe the mitigation measures in the ROD contribute substantially to preventing hearing damage and biologically significant disruption of sea animal behavior. **However, there is no certainty that in all cases those mitigation measures will avoid all potential impacts.** I am particularly persuaded by the continually emerging science regarding the North Atlantic right whale (NARW). BOEM’s PEIS estimates that between zero and two individual NARWs would potentially experience Level A take (hearing damage) annually and that between zero and 224 individual NARWs would potentially experience Level B take (behavioral disruption) annually if seismic surveys proceed within the parameters established by the PEIS. The assumptions made in these estimates are “conservative,” tending to err in overestimating takes. Furthermore, mitigation measures outlined in BOEM’s PEIS and included in its ROD should contribute substantially to preventing hearing damage and biologically significant disruption of NARW behavior. However, some NARWs would doubtless be disturbed by seismic activity in the Atlantic. Given that next Five-Year Program excludes the Atlantic from leasing from 2017-2022, and **the potential for less intrusive seismic technologies in the near future, the potential disadvantage to this small, critically endangered, and declining population is not worth the risk.**”ⁱⁱ

Authorized Incidental Takes

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Takes	Level A	Level B
Whales	49	59,759
Dolphins	20	316,205

Table 8. Number of Incidental Takes Authorized by Harassment

Common name	Spectrum		TGS		ION		Western		CGG	
	Level A	Level B	Level A	Level B	Level A	Level B	Level A	Level B	Level A	Level B
North Atlantic right whale	0	2	0	9	0	2	0	4	0	2
Humpback whale	2	19	4	56	2	5	0	49	2	5
Manx whale	2	252	4	208	2	10	0	100	4	124
Bryde's whale	0	2	0	2	0	2	0	2	0	2
Sea whale	0	2	0	2	0	2	0	2	0	2
Fin whale	2	163	4	1,140	2	3	0	537	4	45
Blue whale	0	1	0	1	0	1	0	1	0	1
Sperm whale	0	684	0	3,579	0	16	0	1,941	0	1,304
Logan spp.	3	125	11	1,210	2 ¹	28	10	562	2 ¹	238
Balised whales	0	2,291	0	12,072	0	490	0	4,960	0	3,511
Northern bottlenose whale	0	4	0	4	0	4	0	4	0	4
Rough-toothed dolphin	0	117	0	261	0	14 ¹	0	123	0	177
Common bottlenose dolphin	0	14,938	0	40,595	0	2,599	0	23,600	0	9,063
Clymene dolphin	0	4,045	0	821	0	252	0	391	0	6,382
Atlantic spotted dolphin	0	8,466	0	41,222	0	568	0	18,724	0	6,596
Pan-tropical spotted dolphin	0	1,017	0	1,470	0	78	0	690	0	1,566
Spinner dolphin	0	91	0	91	0	91	0	91	0	91
Striped dolphin	0	5,144	0	23,418	0	162	0	8,845	0	6,328
Common dolphin	0	6,008	0	52,728	0	372	0	20,683	0	6,026
Fraser's dolphin	0	204	0	204	0	204	0	204	0	204
Atlantic white-sided dolphin	0	48	0	48	0	48	0	48	0	48
Pinnac dolphin	0	414	0	3,241	0	90	0	1,608	0	809
Melon-headed whale	0	50	0	50	0	50	0	50	0	50
Pygmy killer whale	0	6	0	6	0	6	0	6	0	6
False killer whale	0	28	0	28	0	28	0	28	0	28
Killer whale	0	7	0	7	0	7	0	7	0	7
Pilot whales	0	1,591	0	8,902	0	199	0	4,682	0	1,964
Harbor porpoise	8	355	3	322	3 ¹	18	3	152	3 ¹	27

Environmental Assessment, pp. 62-63 and 72-73

Note also that the BOEM Biological Opinion identifies that **more than 128,000 sea turtles** will be harmed by seismic surveys [(Behavior) 106,391 + (TTS) 22,065 = 128,456]. As a member of SCUTE (South Carolina United Turtle Enthusiasts), I am shocked that this much harm will be wrought upon our endangered sea turtles. **There is no level of mitigation that will definitively protect these sea turtles.**

+Whales and Sea Turtles > 30 cm dia.

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Table 18. Estimated amount of incidental take of Endangered Species Act-listed cetaceans and sea turtles (excluding sea turtles less than 30 centimeters) authorized by this incidental take statement. For sea turtles, our analysis allows for further delineation of the estimated incidental takes by harassment into behavioral harassment and temporary hearing threshold shifts (TTS). Such delineation was not possible for marine mammals based on our exposure analysis. Only fin whales are estimated to be taken by harm due to permanent threshold shifts (PTS).

Species/Order	ION		Spectrum		TGS		WesternGeo		CGG		Total	
	Harm (PTS)	Harassment (TTS/Behavior)	Harm (PTS)	Harassment (TTS/Behavior)	Harm (PTS)	Harassment (TTS/Behavior)	Harm (PTS)	Harassment (TTS/Behavior)	Harm (PTS)	Harassment (TTS/Behavior)	Harm (PTS)	Harassment (TTS/Behavior)
Cetaceans												
North Atlantic right whale	-	2	-	2	-	9	-	4	-	2	-	19
Sea whale	-	2	-	2	-	2	-	2	-	2	-	10
Fin whale	2	3	2	163	4	1,140	-	537	4	45	12	1,888
Blue whale	-	1	-	1	-	1	-	1	-	1	-	5
Sperm whale	-	16	-	684	-	3,579	-	1,941	-	1,304	-	7,524
Sea Turtles												
Hardshell (loggerhead, green, or Kemp's ridley)	1,717	7,823	915	3,139	2,460	12,840	-	2,388	1,265	4,338	6,347	30,537
Kemp's ridley	159	735	93	324	215	1,128	-	473	80	204	527	2,894
Leatherback	1,035	4,712	1,014	3,467	1,678	8,770	-	3,272	2,193	7,529	5,920	27,750
Loggerhead (Northwest Atlantic DPS)	2,522	11,533	1,167	4,007	3,594	18,901	-	3,680	1,988	6,819	9,271	45,240

30 cm = 11.8 inches

Biological Opinion on the Bureau of Ocean Energy Management's Issuance of Five Oil and Gas Permits for Geological and Geophysical Seismic Surveys off the Atlantic Coast of the United States, and the National Marine Fisheries Services' Issuance of Associated Incidental Harassment Authorizations

+Sea Turtles <30 cm in diameter

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Table 19. Estimated amount of take by harassment (measures as ensonified area) of Endangered Species Act-listed sea turtles less than 30 centimeters in diameter authorized by this incidental take statement.

Company	TTS Ensonified Area (km ²)	Behavioral Harassment Ensonified Area (km ²)
ION	18,508	84,485
Spectrum	14,846	50,902
TGS	32,035	167,912
WesternGeco	-	52,758
CGG	32,243	110,609
Total	97,632	466,666

Biological Opinion on the Bureau of Ocean Energy Management's Issuance of Five Oil and Gas Permits for Geological and Geophysical Seismic Surveys off the Atlantic Coast of the United States, and the National Marine Fisheries Services' Issuance of Associated Incidental Harassment Authorizations

Numerous studies show the detrimental impact seismic airguns have on fisheries and marine mammals, thereby affecting the catch that anglers bring dockside and the revenues generated by associated businesses. A 2014 study conducted off North Carolina's coast by the University of North Carolina Chapel Hill, Duke University and NOAA, found that during seismic surveying the abundance of reef-fish declined by 78 percent. A 2017 study published in Nature Ecology and Evolution found that noise from seismic airguns can also kill zooplankton from a distance of almost three-quarters of a mile away, further than previously thought.ⁱⁱⁱ Zooplankton is the foundation of our marine food web. The resultant effects of this impact also damage commercial fishing, restaurants and the recreational fishing businesses in our coastal communities. **This is why every major commercial fishing association has opposed seismic surveys and offshore drilling.**

Some in government are saying, "We should know what's out there. Let's at least run the seismic." But we are now acutely aware of the damage airgun blasts wreak on our marine life – from our largest marine mammals down to the tiniest zooplankton. And it is very important to note that **seismic surveys alone do NOT definitively tell us what is out there.** Five applications for permits are currently under review to run 2D seismic in the Atlantic. Historically, 2D seismic alone is only successful in finding oil and gas approximately 20-25% of the time. After the requested 2D surveys, seismic companies will be back here asking for permits to run 3D seismic, a second blast of non-stop airgun noise in our ocean. And 3D seismic only increases the odds of finding oil and gas to 40-50% of the time, in true "wildcat" exploration. If seismic surveys were able to definitively find oil and gas, Royal Dutch Shell would not have spent \$7 billion on a dry hole in the Arctic two years ago. **In order to find oil and gas, you will not "know what's out there" until you drill.**



Some proponents of opening drilling in the Atlantic make the argument that seismic airgun surveys for oil and gas deposits would allow local communities to learn more about what resources might be available. The reality is that, by law, the seismic surveys are proprietary for 25 years and only available to BOEM and to the oil and gas companies which purchase them. The public, local government officials and even Members of Congress would not have access to the survey data. This inability to access information leaves coastal communities without the opportunity to perform substantive cost-benefit analyses for extracting oil and gas reserves off their coasts. Local stakeholders would be left taking on significant risk without being involved in future development decisions.

In conclusion, the Atlantic coast economy, **nearly 1.4 million jobs and over \$95 billion in gross domestic product rely on a healthy coast and ocean ecosystems, mainly through fishing, tourism and recreation.** To expose the Atlantic to seismic airgun surveys and offshore drilling is, as South Carolina Governor McMaster says, “killing the goose that laid the golden egg.”

I request that SC DHEC determine that seismic airgun exploration is inconsistent with South Carolina’s Coastal Management Program, and denies the WesternGeco certification. In addition, I request that SC DHEC overturn the other 3 certifications you provided in 2015.

Sincerely,

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843-485-2285

Cc: Richard K. Toomey – Director – DHCE
Jennifer Read – Chief of Staff – DHEC
Myra Reece – Director of Environmental Affairs - DHEC
W. Marshall Taylor, Jr. – General Counsel - DHEC
Rep. Lee Hewitt – South Carolina House
Sen. Stephen Goldfinch – South Carolina Senate

ⁱ Geological & Geophysical Data Acquisition, Outer Continental Shelf Through 1997, George Dellagiarino, Patricia Fulton, Keith Meekins and David Zinzer, US DOI MMS, OCS Statistical Report MMS 98-0027

ⁱⁱ Letter from Abigail Ross Hopper, Director, BOEM to Michael Celata re: Airgun Seismic Suvey Permit Applications, January 5, 2017

ⁱⁱⁱ <https://www.nature.com/articles/s41559-017-0195>