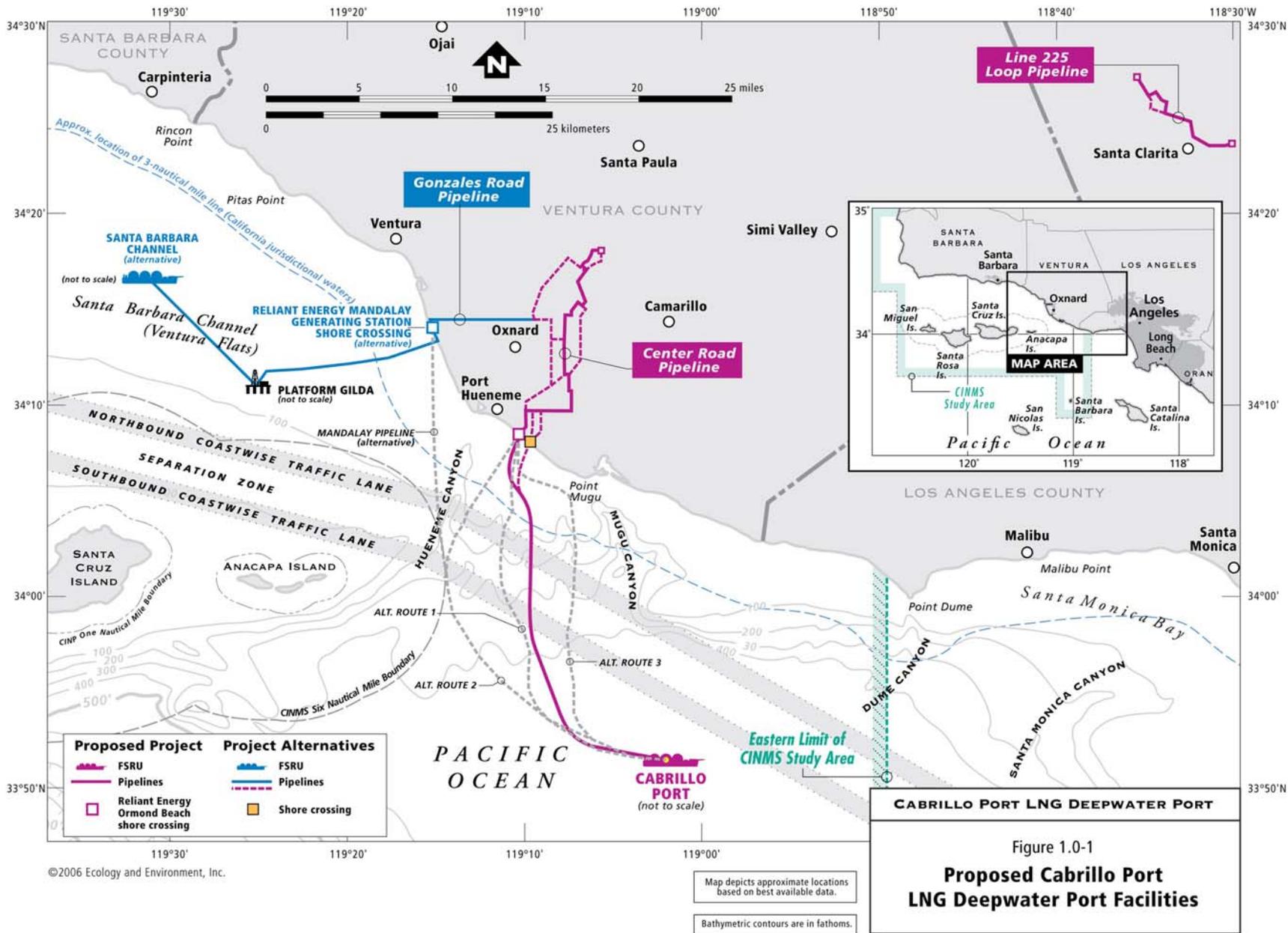


Source: Ecology and Environment, Inc.



Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. PROJ. – 1
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HEIGHT OF IMPORTANT STRUCTURES ABOVE LOADED WATERLINE AND ABOVE KEEL

LENGTH OVERALL = 296m(971ft)

LENGTH BETWEEN PERPENDICULARS = 293m(961ft)

BEAM (BREADTH) = 65m(213ft)

HULL DEPTH (KEEL TO MAIN DECK) = 31m(102ft)

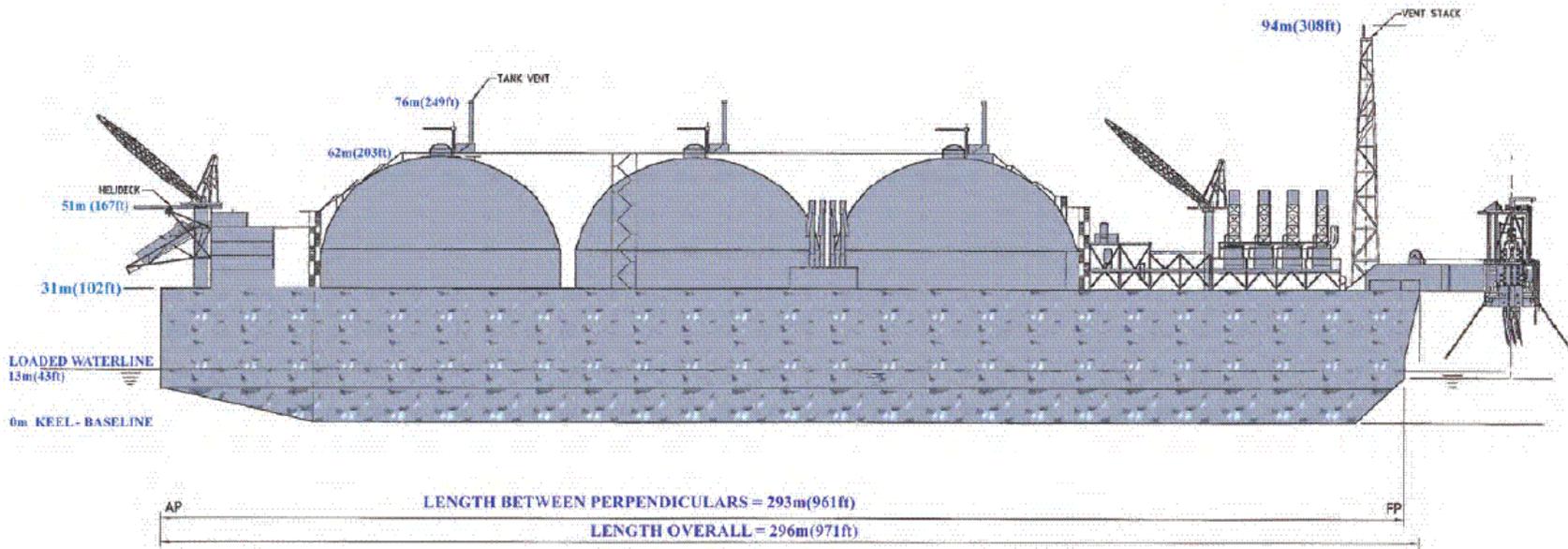
HEIGHT OF COLD STACK ABOVE LOADED WATERLINE = 81m(266ft)

HEIGHT OF TANK VENT TOP ABOVE LOADED WATERLINE = 63m(207ft)

HEIGHT OF TANK COVERS ABOVE LOADED WATERLINE = 49m(161ft)

HEIGHT OF HELIDECK ABOVE LOADED WATERLINE = 38m(125ft)

HEIGHT OF MAIN DECK ABOVE LOADED WATERLINE = 18m(59ft)



CABRILLO PORT LNG DEEPWATER PORT
 Figure 2.2-1
 Proposed FSRU Profile Schematic

Ecology and Environment, Inc.

001883.CA04.50.02.a (BHP Cabrillo Port folder) 01/03/2006

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. PROJ -2
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Figure 2.2-2

Artist's Rendering of FSRU
CABRILLO PORT LNG DEEPWATER PORT



Figure 2.2-3

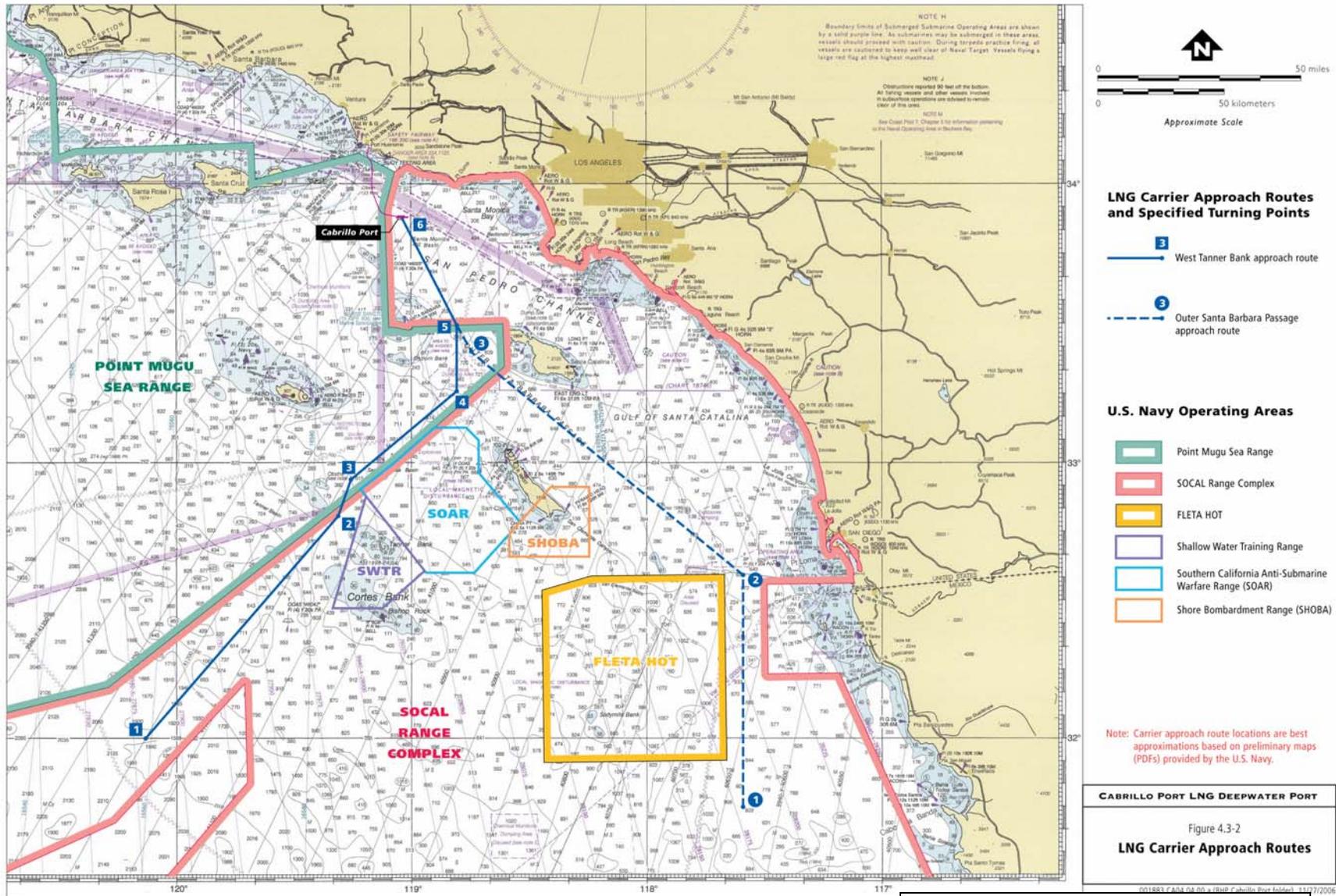
Artist's Rendering of LNG Carrier Docked at FSRU During Offloading
CABRILLO PORT LNG DEEPWATER PORT

Source: Entrix, 2004

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

001883.CA04.09.22.i (Cabrillo folder) 01/06/2006

EXHIBIT No. PROJ -3
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Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. PROJ. – 4
Consistency Certification CC-079-06
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Table 4.7-1 Average Abundance of Species (Organisms per Square Meter)

Species	Taxonomic Group	Deep Coarse	Deep Fine	Mid-Depth	Shallow
<i>Spiophanes missionensis</i>	Annelida	386.0	195.0	563.2	132.2
<i>Amphiodia digitata</i>	Ophiuroidea	236.0			
<i>Euphilomedes producta</i>	Arthropoda	215.0			
<i>Mediomastus</i> spp.	Annelida	168.0	71.6	117.8	76.2
<i>Chloeia pinnata</i>	Annelida	100.0			
<i>Amphiodia urtica</i>	Ophiuroidea	83.0	263.2	422.0	
<i>Spiophanes firmbriata</i>	Annelida	82.0	149.7		
<i>Ampelisca careyi</i>	Arthropoda	69.0	21.0		
<i>Photis lacia</i>	Arthropoda	69.0			
<i>Rhepoxynius bicuspidatus</i>	Arthropoda	59.0		43.0	
Maldanidae ^a	Annelida	51.0	91.5	105.0	127.9
<i>Pectinaria californiensis</i>	Annelida	50.0	91.1	85.3	
<i>Eudorella pacifica</i>	Arthropoda	35.0			
<i>Lumbrineris</i> spp.	Annelida	35.0	94.0	50.8	57.5
<i>Paraprionospio pinnata</i>	Annelida	33.0	47.8	45.4	108.9
<i>Euclymeninae</i> sp. A	Annelida	31.0		28.2	
<i>Decamastus gracilis</i>	Annelida	21.0			
<i>Terebellides californica</i>	Annelida		23.0	20.2	
<i>Maldane sarsi</i>	Annelida		34.0		
<i>Levinsenia</i> spp.	Annelida		30.3		
<i>Cossura</i> spp.	Annelida		26.9		
<i>Laonice appelloefi</i>	Annelida		21.8		
<i>Sthenelanelia uniformis</i>	Annelida			84.2	
<i>Phoronis</i> sp.	Phoronida			77.9	
<i>Prionospio</i> sp. A	Annelida			76.4	
<i>Ampelisca brevisimulata</i>	Arthropoda			50.2	31.6
<i>Euphilomedes carcharodonta</i>	Arthropoda			47.5	
<i>Paramage scutata</i>	Annelida			46.4	
<i>Parvilucina tenuisculpta</i>	Mollusca			44.0	
<i>Leptochelia dubia</i>	Arthropoda			42.3	
<i>Heterophoxus oculatus</i>	Arthropoda			37.6	
<i>Pholoe glabra</i>	Annelida			28.0	
<i>Glycera nana</i>	Annelida			26.7	
<i>Tellina carpenteri</i>	Mollusca			24.4	
<i>Gnathia crenulatifrons</i>	Arthropoda			24.2	
<i>Tubulanus polymorphus</i>	Nemertea			23.2	

Table 4.7-1 Average Abundance of Species (Organisms per Square Meter)

Species	Taxonomic Group	Deep Coarse	Deep Fine	Mid-Depth	Shallow
<i>Ampelisca pugetica</i>	Arthropoda			22.2	
<i>Amphideutopus oculatus</i>	Arthropoda				132.9
<i>Glottidia albida</i>	Brachiopoda				90.3
<i>Spiophanes bombyx</i>	Annelida				82.6
<i>Ampelisca cristata</i>	Arthropoda				65.1
<i>Macoma yoldiformis</i>	Mollusca				54.8
<i>Tellina modesta</i>	Mollusca				50.8
<i>Apoprionospio pygmaea</i>	Annelida				50.0
<i>Owenia collaris</i>	Annelida				44.7
<i>Amphicteis scaphobranchiata</i>	Annelida				24.8
<i>Carinoma mutabilis</i>	Nemertea				24.3
<i>Ampharete labrops</i>	Annelida				23.4
<i>Rhepoxynius menziesi</i>	Arthropoda				22.2
Lineidae	Nemertea				20.3

Source: Bergen et al. 1998b.

Note :

^aAll Maldanids except 11 identified species.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

Table 4.7-2 Fish Species Common to the Project Vicinity

Common Name	Scientific Name	Soft Bottom 0 to 82 feet (0 to 25 m)	Soft Bottom > 82 feet (> 25 m)	Hard Bottom 0 to 82 feet (0 to 25 m) ^a	Hard Bottom > 82 feet (> 25 m) ^a
Bass, barred sand	<i>Paralabrax nebulifer</i>	X	X		
Bass, kelp	<i>Paralabrax clathratus</i>			X	X
Bass, spotted bay	<i>Paralabrax maculatofasciatus</i>	X	X	X	X
California corbina	<i>Menticirrhus undulatus</i>	X			
Cowcod	<i>Sebastes levis</i>		X		X
Croaker, yellowfin	<i>Umbrina roncador</i>	X	X		
Croaker, white	<i>Genyonemus lineatus</i>	X	X		
Garibaldi	<i>Hypsypops rubicundus</i>			X	
Grunion, California	<i>Leuresthes tenuis</i>	X			
Guitarfish, shovelnose	<i>Rhinobatos Productus</i>	X			
Halibut, California	<i>Paralichthys californicus</i>	X	X		
Halfmoon	<i>Medialuna californicus</i>			X	X
Opaleye	<i>Girella nigricans</i>			X	X
Ray, bat	<i>Myliobatis californica</i>	X	X		
Rockfish, black	<i>Sebastes melanops</i>	X	X	X	X
Rockfish, blue	<i>Sebastes mystinus</i>			X	X
Rockfish, bocaccio	<i>Sebastes paucispinus</i>	X	X	X	X
Rockfish, calico	<i>Sebastes dalli</i>		X		X
Rockfish, kelp	<i>Sebastes atrovirens</i>			X	X
Sanddab, Pacific	<i>Citharichthys sordidus</i>		X		
Sanddab, speckled	<i>Citharichthys stigmaeus</i>	X	X		
Scorpion fish, California	<i>Scorpaena guttata</i>	X	X	X	X
Seabass, white	<i>Atractoscion nobilis</i>	X	X	X	X
Shark, leopard	<i>Triakis semifasciata</i>	X			
Sheepshead, California	<i>Semicossyphus pulcher</i>			X	X
Sole, Dover	<i>Microstomus pacificus</i>		X		
Sole, petrale	<i>Eopsetta jordani</i>		X		
Surfperch spp.	<i>Embiotocidae</i>	X			
Thornyhead spp.	<i>Sebastolobus spp.</i>		X		X

Source: Leet et al. 2001.

Note:

^a Hard bottom substrates and habitats are not known to exist in the Project site.

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Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

Table 4.7-3 Occurrence of Protected Species of Cetaceans in or near the Project Site

Species	Federal Protected Status other than under MMPA	Population or Stock Size	Occurrence in Southern California Bight	Potential Occurrence in Project Area
Mysticeti				
Sei whale	Federal endangered	56	Extremely rare; not reported near Project site	Extremely remote
Blue whale	Federal endangered	1,744	Seasonally abundant along escarpments; not reported near FSRU, but may occur near LNG carrier approach routes	Unlikely at FSRU, but may occur near LNG carrier approach routes
Fin whale	Federal endangered	3,279	Uncommon; reported near Project site	Unlikely at FSRU, but may occur near LNG carrier approach routes
Humpback whale	Federal endangered	1,391	Seasonally abundant along escarpments; reported near Project site	Unlikely at FSRU, but may occur near LNG carrier approach routes
North Pacific right whale	Federal endangered	Not available	Extremely rare; not reported near Project site	Extremely remote
Bryde's whale	None	12	Extremely rare; not reported near Project site	Extremely remote
Minke whale	None	1,015	Uncommon; reported near Project site	Unlikely; very low numbers
California gray whale	None	18,178	Common seasonally; reported near Project site	Likely December through May
Odontocetes				
Sperm whale	Federal endangered	1,233	Rare; not reported near Project site	Extremely remote
Short-beaked common dolphin ^a	None	449,846	Abundant; reported near Project site	Likely
Long-beaked common dolphin ^a	None	43,360	Abundant; reported near Project site	Likely

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

Table 4.7-3 Occurrence of Protected Species of Cetaceans in or near the Project Site

Species	Federal Protected Status other than under MMPA	Population or Stock Size	Occurrence in Southern California Bight	Potential Occurrence in Project Area
Bottlenose dolphin: coastal stock	None	206	Common; low numbers; reported near Project site	Likely within 0.6 mile (1 km) of shore; small numbers and sporadic
Bottlenose dolphin offshore stock	None	5,065	Locally abundant; not reported near Project site	Unlikely
Pacific white-sided dolphin	None	59,274	Sporadically abundant; cold water; reported near Project site	Unlikely
Northern right whale dolphin	None	20,362	Sporadically abundant; cold water; not reported near Project site	Unlikely
Risso's dolphin	None	16,066	Locally abundant; reported near Project site	Possible
Killer whale (both stocks)	None	346 (transient); 466 (offshore)	Uncommon; reported near Project site	Unlikely
Short-finned pilot whale	None	304	Uncommon; not reported near Project site	Extremely remote
False killer whale	None	Not available for Southern California Bight	Rare; not reported near Project site	Extremely remote
Spotted dolphin	None	Not available for Southern California Bight	Rare; not reported near Project site	Extremely remote
Striped dolphin	None	Not available for Southern California Bight	Rare; not reported near Project site	Extremely remote
Long-snouted spinner dolphin	None	Not available for Southern California Bight	Rare; not reported near Project site	Extremely remote
Rough-toothed dolphin	None	Not available for Southern California Bight	Rare; not reported near Project site	Extremely remote
Dall's porpoise	None	99,517	Sporadically abundant; cold water; reported near Project site	Possible
Harbor porpoise	None	1,656	Rare; not reported near Project site	Remote
Baird's beaked whale	None	228	Rare; not reported near Project site	Extremely remote
Cuvier's beaked whale	None	1,884	Uncommon; not reported near Project site	Extremely remote
Hubb's beaked whale	None	1,247 combined with others	Rare; not reported near Project site	Extremely remote

Table 4.7-3 Occurrence of Protected Species of Cetaceans in or near the Project Site

Species	Federal Protected Status other than under MMPA	Population or Stock Size	Occurrence in Southern California Bight	Potential Occurrence in Project Area
Blainville's beaked whale	None	1,247	Rare; not reported near Project site	Extremely remote
Ginkgo-toothed whale	None	1,247 combined with others	Rare; not reported near Project site	Extremely remote
Perrin's beaked whale ^b	None	1,247 combined with others	Rare; not reported near Project site	Extremely remote
Stejneger's beaked whale	None	1,247 combined with others	Rare; not reported near Project site	Extremely remote
Pygmy sperm whale	None	247	Rare; not reported near Project site	Extremely remote
Dwarf sperm whale	None	Not available	Rare; not reported near Project site	Extremely remote

Sources: Carretta et al. 2005; Angliss and Outlaw 2005.

Notes:

^a The short- and long-beaked common dolphins were once considered a single species; thus, earlier surveys may have reported only *Delphinus delphis* near the area.

^b Formerly reported as Hector's beaked whale (*Mesoplodon hectori*).

Table 4.7-4 Occurrence of Pinnipeds and Mustelids in or near the Project Site

Species	Protected Status Other than Under MMPA	Stock Size	Occurrence in the Southern California Bight	Reported near Project Site	Potential Occurrence in Proposed Project Site
Pinnipeds					
Steller sea lion	Federal threatened	44,996	Extremely rare	No	Extremely remote
Guadalupe fur seal	Federal and State threatened	7,408	Rare	No	Extremely remote
California sea lion	None	237,000-244,000	Common	Yes	Likely
Northern fur seal	None	7,784	Uncommon	No	Extremely remote
Northern elephant seal	None	101,000	Common	No	Unlikely at FSRU site
Pacific harbor seal	None	34,233	Common	Yes	Likely
Ribbon seal	None	Not applicable to area	Extremely rare	No	Extremely remote
Mustelids					
Southern sea otter	Federal threatened	2,735	Rare	No	Remote

Sources: Carretta et al. 2005; Angliss and Outlaw 2005; USGS 2005 ; Carretta et al. 2000; Woodhouse 1995.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

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Table 4.7-5 Occurrence of Federally Listed Threatened or Endangered Cetacean, Pinniped, and Mustelid Species Potentially Occurring in or near the Project Site

Species	Protected Status Other than Under MMPA	Stock Size	Occurrence in Southern California Bight	Potential Occurrence in Project Area	Section 7 Assessment ^a
Cetaceans					
Sei whale	Federal endangered	Not available	Extremely rare; not reported near Project site	Extremely remote	May affect, but not likely to adversely affect
Blue whale	Federal endangered	1,744	Seasonally abundant along escarpments; not reported near Project site	Unlikely at FSRU, but may occur near LNG carrier approach routes	Likely to adversely affect; see Impact BioMar-5, Section 4.7.4
Fin whale	Federal endangered	3,279	Uncommon; reported near Project site	Unlikely at FSRU, but may occur near LNG carrier approach routes	Likely to adversely affect; see Impact BioMar-5, Section 4.7.4
Humpback whale	Federal endangered	856	Seasonally abundant along escarpments; reported near Project site	Unlikely at FSRU, but may occur near LNG carrier approach routes	Likely to adversely affect; see Impact BioMar-5, Section 4.7.4
North Pacific right whale	Federal endangered	Not available	Extremely rare; not reported near Project site	Extremely remote	May affect, but not likely to adversely affect
Sperm whale	Federal endangered	1,233	Rare; not reported near Project Site	Extremely remote	May affect, but not likely to adversely affect
Pinnipeds					
Steller sea lion	Federal threatened	44,996	Extremely rare; not reported near Project site	Extremely remote	May affect, but not likely to adversely affect
Guadalupe fur seal	Federal and State threatened	7,408	Rare; not reported near Project site	Extremely remote	May affect, but not likely to adversely affect
Mustelids					
Southern sea otter	Federal threatened	2,735	Rare; not reported near Project site	Remote	May affect, but not likely to adversely affect

Sources: Carretta et al. 2001, 2002, 2005; Angliss and Outlaw 2005.

^aThese Federal Endangered Species Act (ESA) assessments reflect the current status of consultations with National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS); see the January 31, 2007, ESA and Marine Mammal Protection Act consultation letter from Rodney McInnis of NMFS to Mark Prescott of the USCG in Appendix I.

Table 4.7-5a Occurrence of Threatened or Endangered Seabird Species Potentially Occurring in or near the Project site

Species	Protected Status	Species Density	Occurrence in Southern California Bight	Potential Occurrence in Project Area	Section 7 Assessment ^b
California brown pelican ^a	State and Federal Endangered	0.3 pelican per km ²	Common	Likely	May affect, but not likely to adversely affect
Marbled murrelet	State Threatened and Federal Endangered	Not available	Uncommon	Unlikely during winter and extremely unlikely during breeding season	Not applicable; species not identified during Section 7 consultation
Xantus's murrelet	State Threatened and Federal Candidate	Up to 0.1 murrelet per km ²	Uncommon	Unlikely during breeding season	Not applicable; species not identified during Section 7 consultation

Sources : Mills et al. 2005; McShane et al. 2004.

Notes:

^a Brown pelican is also discussed in Section 4.8.

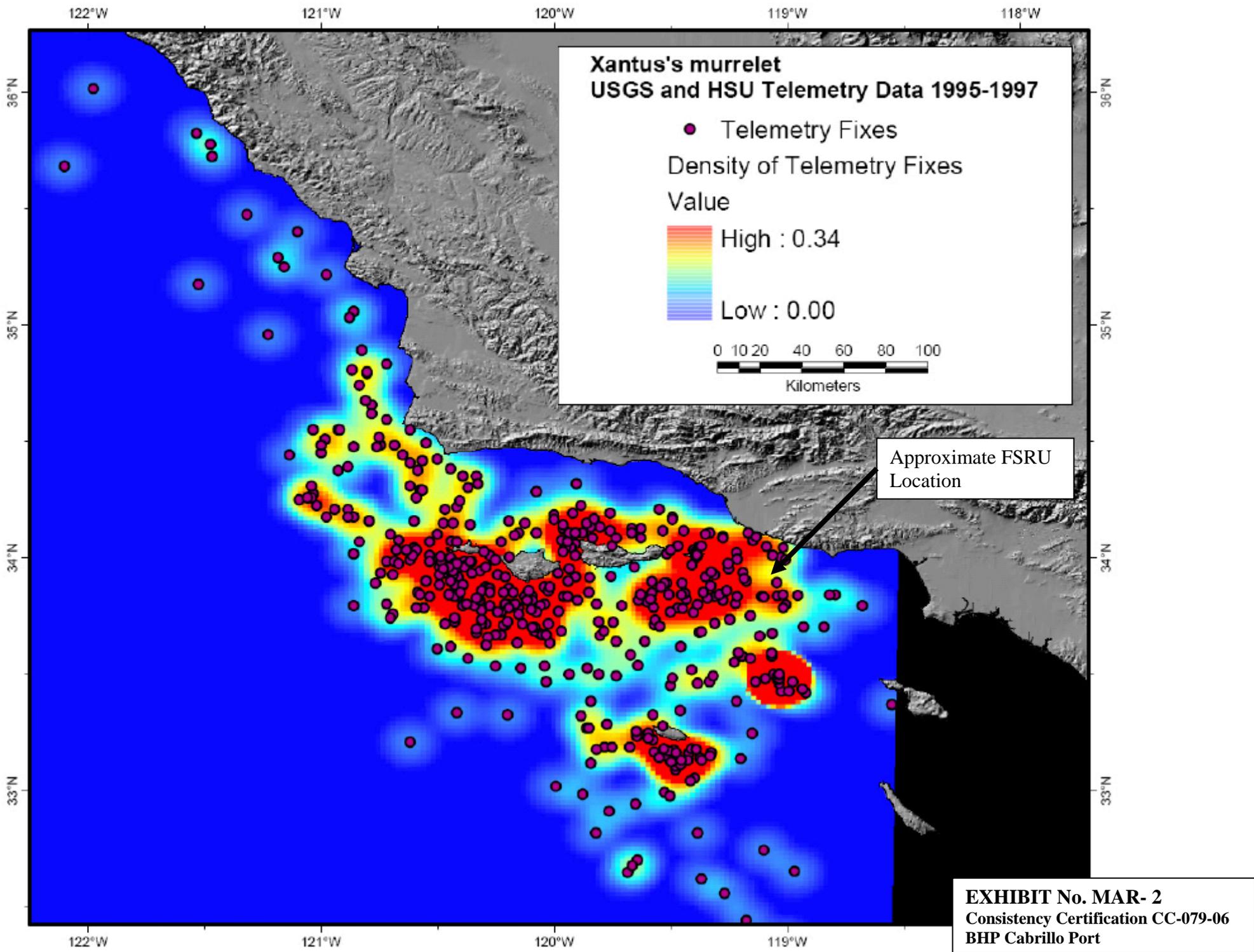
^b These Federal Environmental Species Act assessments reflect the current status of consultations with NOAA's National Marine Fisheries Service; see Appendix I.

Table 4.7-6 Occurrence of Federally Listed Threatened and Endangered Species of Sea Turtles in or near the Project Site

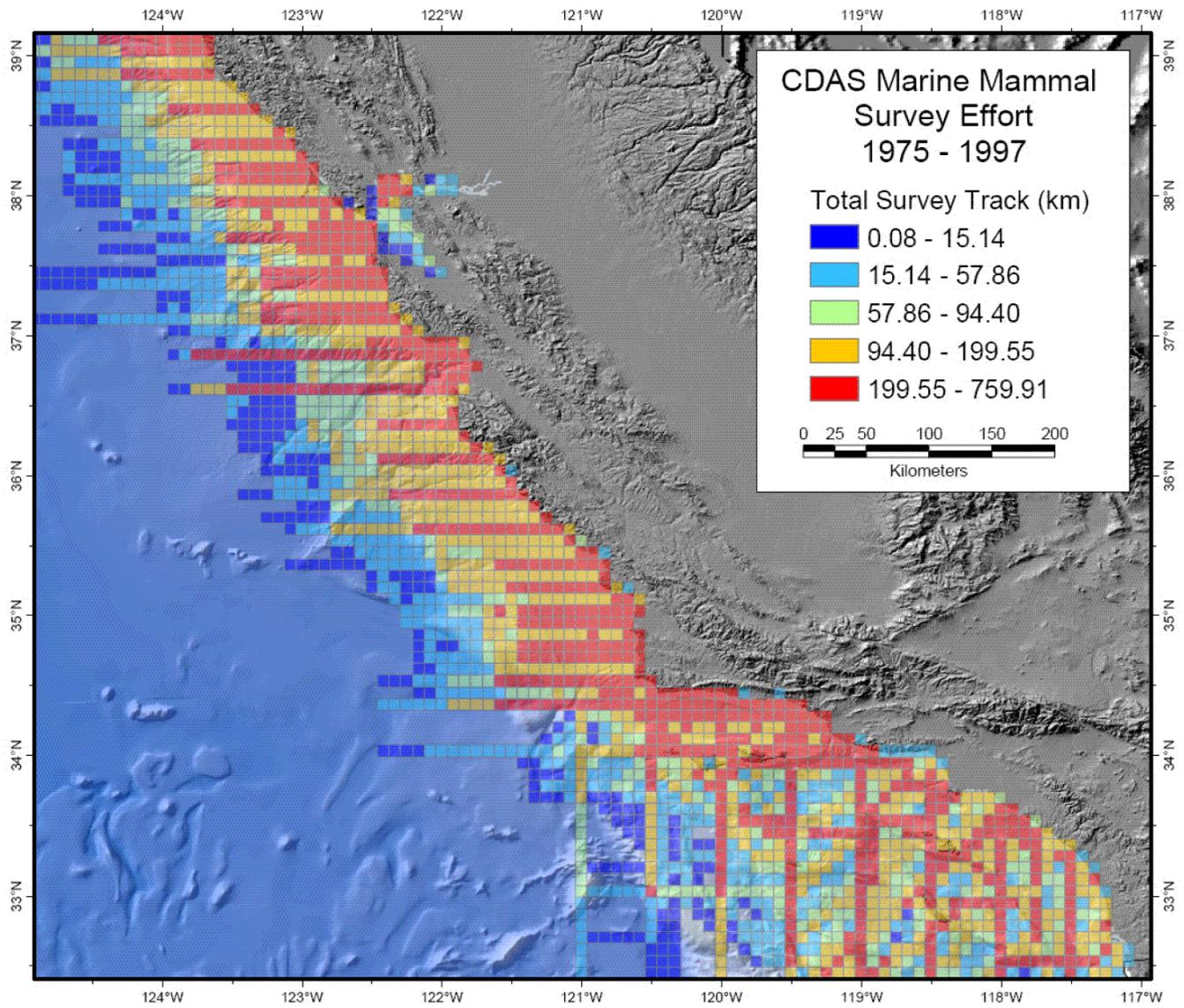
Species	Federal Protected Status	Stock size	Occurrence in Southern California Bight	Potential Occurrence in Project Area	Section 7 Assessment ^a
Green sea turtle	Threatened	Not available	Rare; not reported near Project site	Very unlikely	Likely to adversely affect; see Impact BioMar-5, Section 4.7.4
Loggerhead sea turtle	Threatened	Not available	Rare; not reported near Project site	Very unlikely	Likely to adversely affect; see Impact BioMar-5, Section 4.7.4
Olive Ridley sea turtle	Threatened	Not available	Rare; not reported near Project site	Very unlikely	Likely to adversely affect; see Impact BioMar-5, Section 4.7.4
Leatherback sea turtle	Endangered	Not available	Uncommon but offshore; not reported near Project site	Very unlikely	Likely to adversely affect; see Impact BioMar-5, Section 4.7.4

Sources: NMFS and USFWS 1998a–d; NOAA 2000b.

^aThese Federal Endangered Species Act assessments reflect the current status of consultations with NOAA's National Marine Fisheries Service (NMFS); see the Jan 31, 2007, ESA and Marine Mamma Protection Act consultation letter from Rodney McInnis of NMFS to Mark Prescott of the USCG in Appendix I.

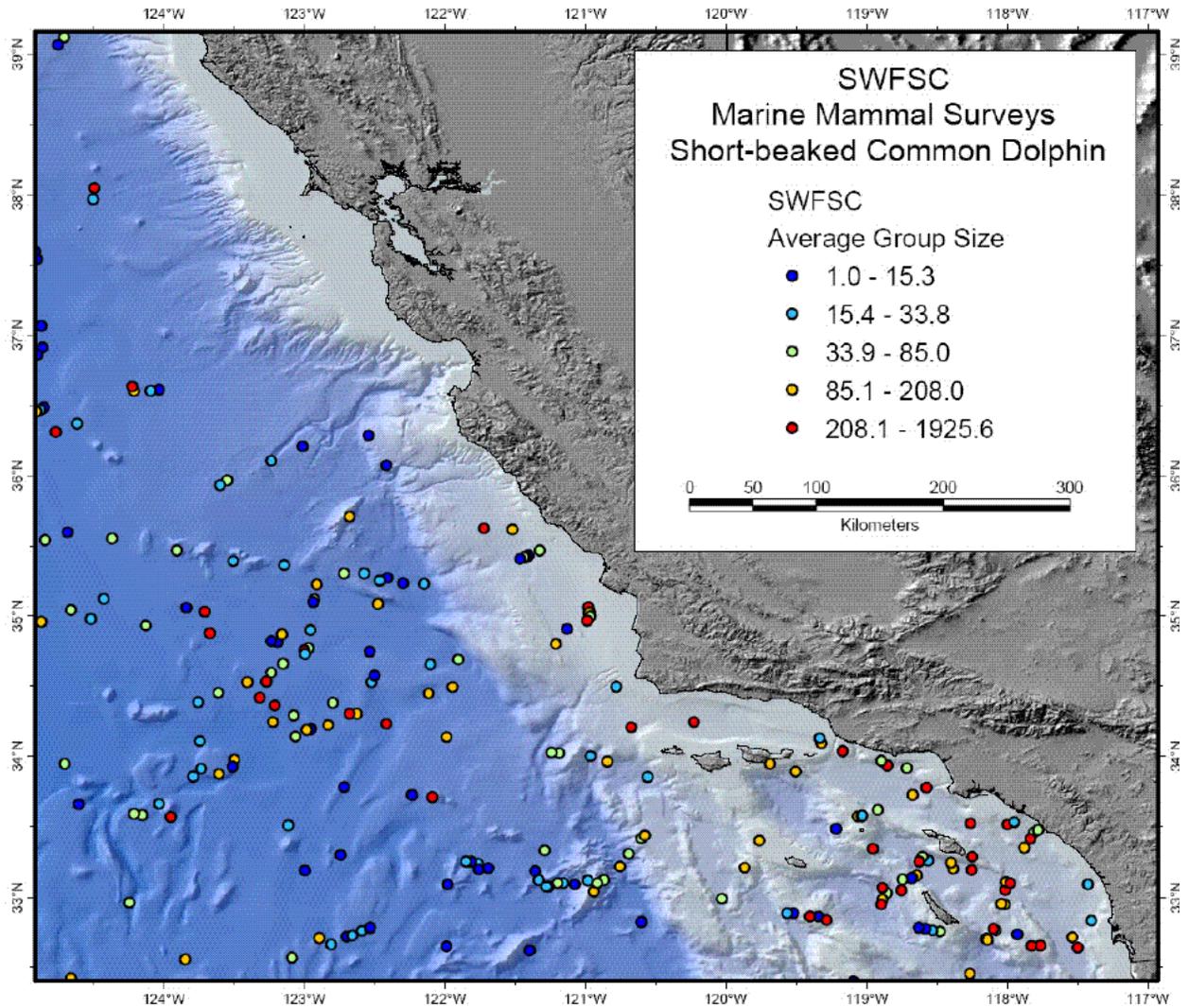


Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*



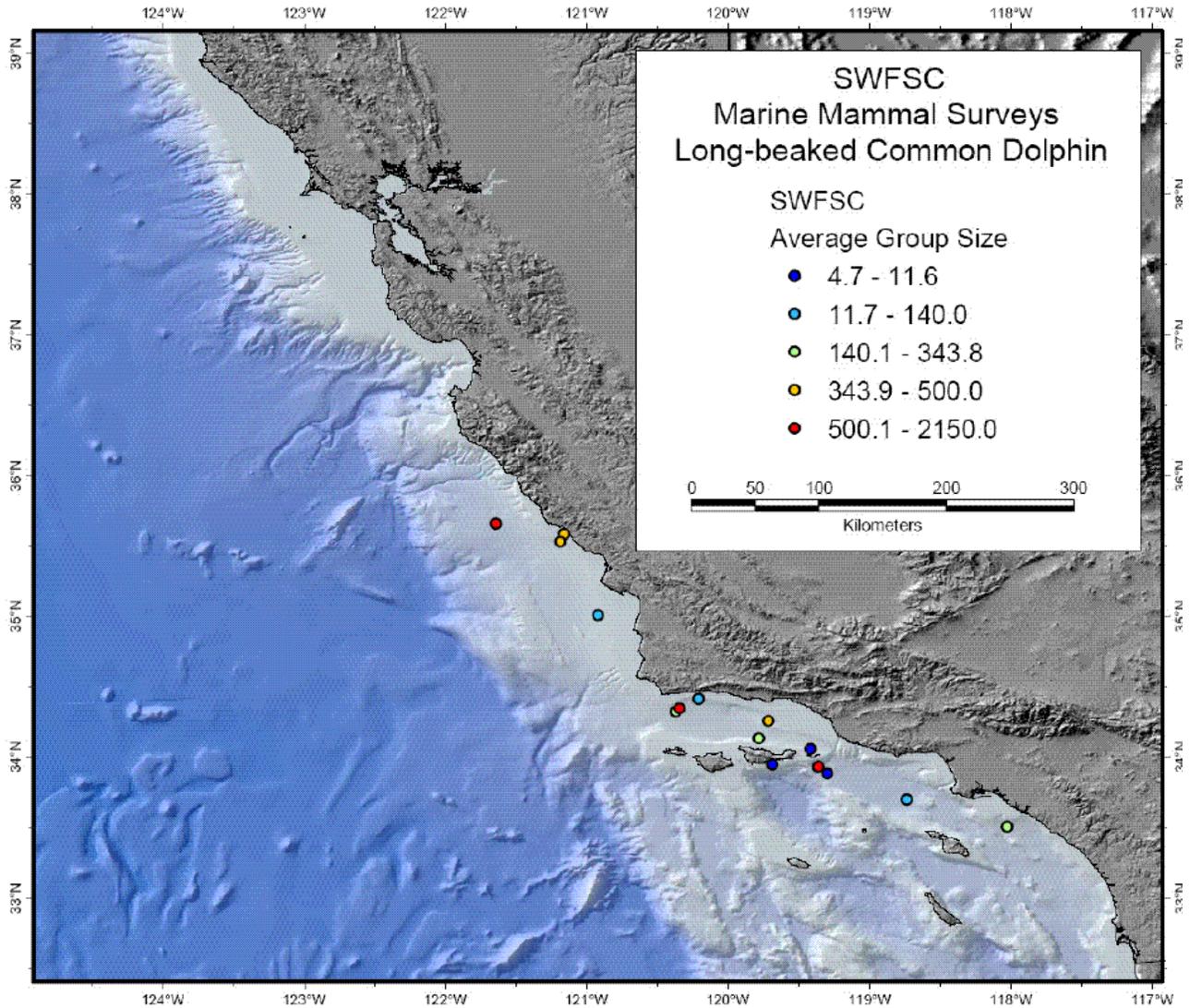
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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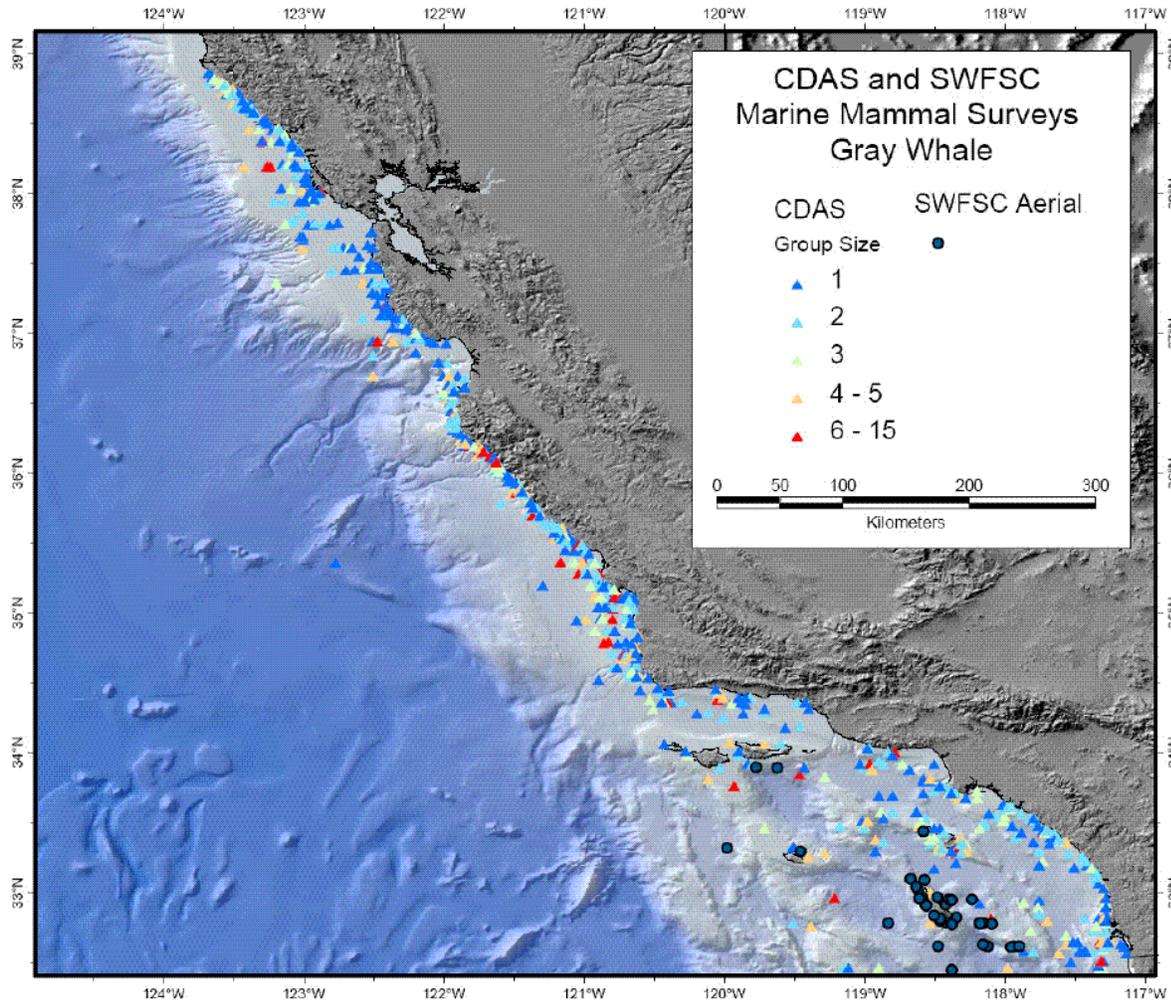
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EXHIBIT No. MAR – 3 (2 of 14)
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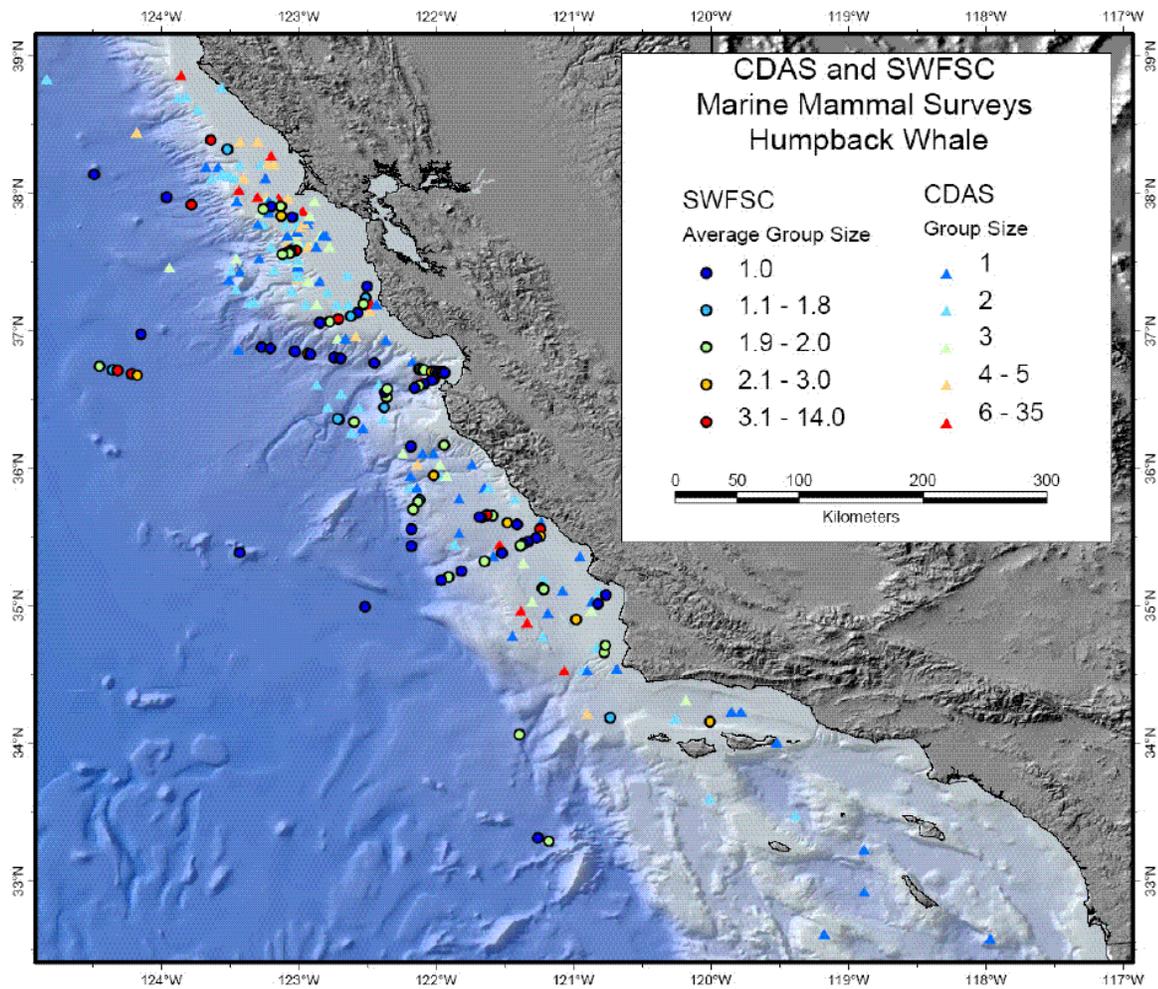
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EXHIBIT No. MAR – 3 (3 of 14)
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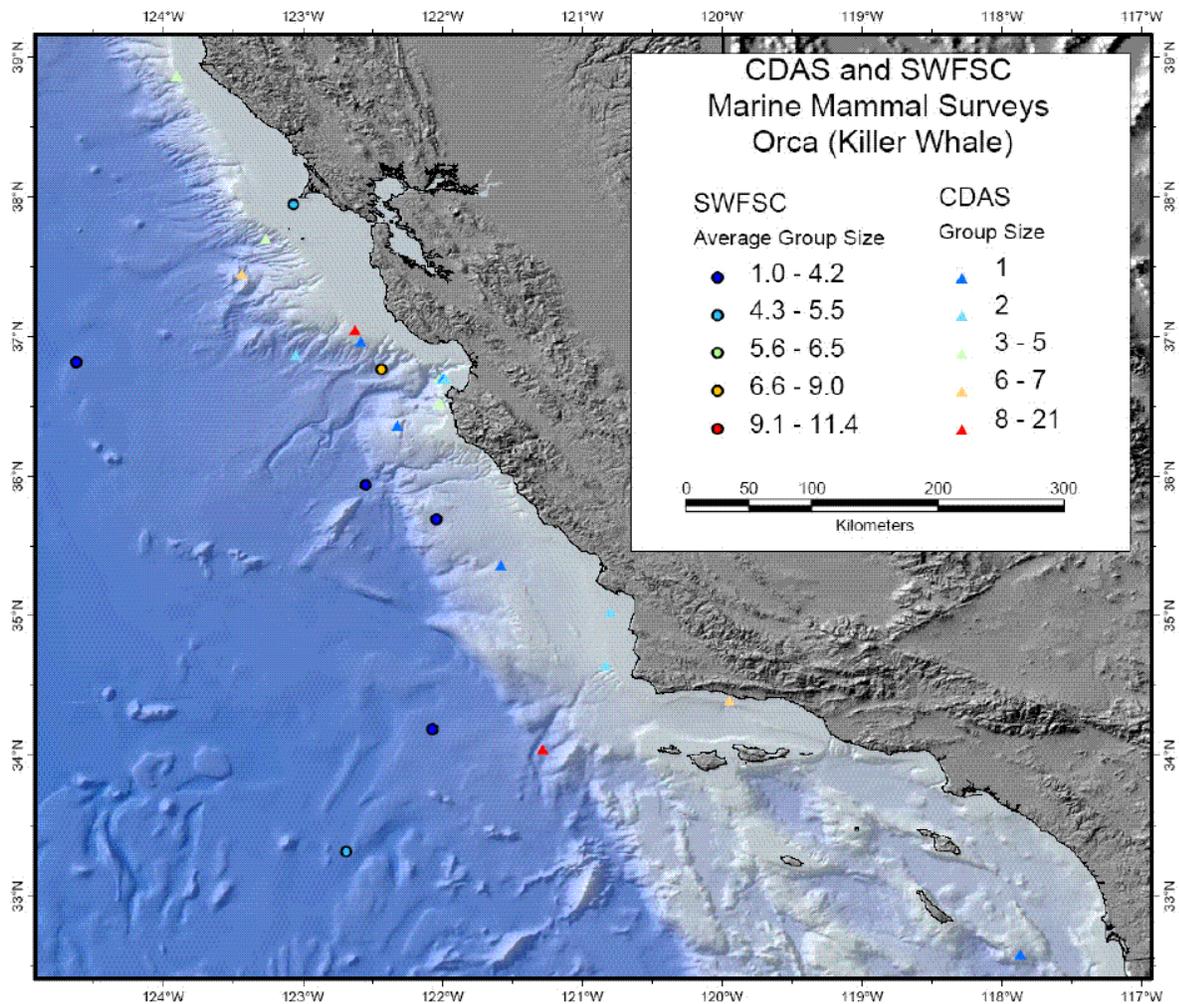
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

EXHIBIT No. MAR – 3 (4 of 14)
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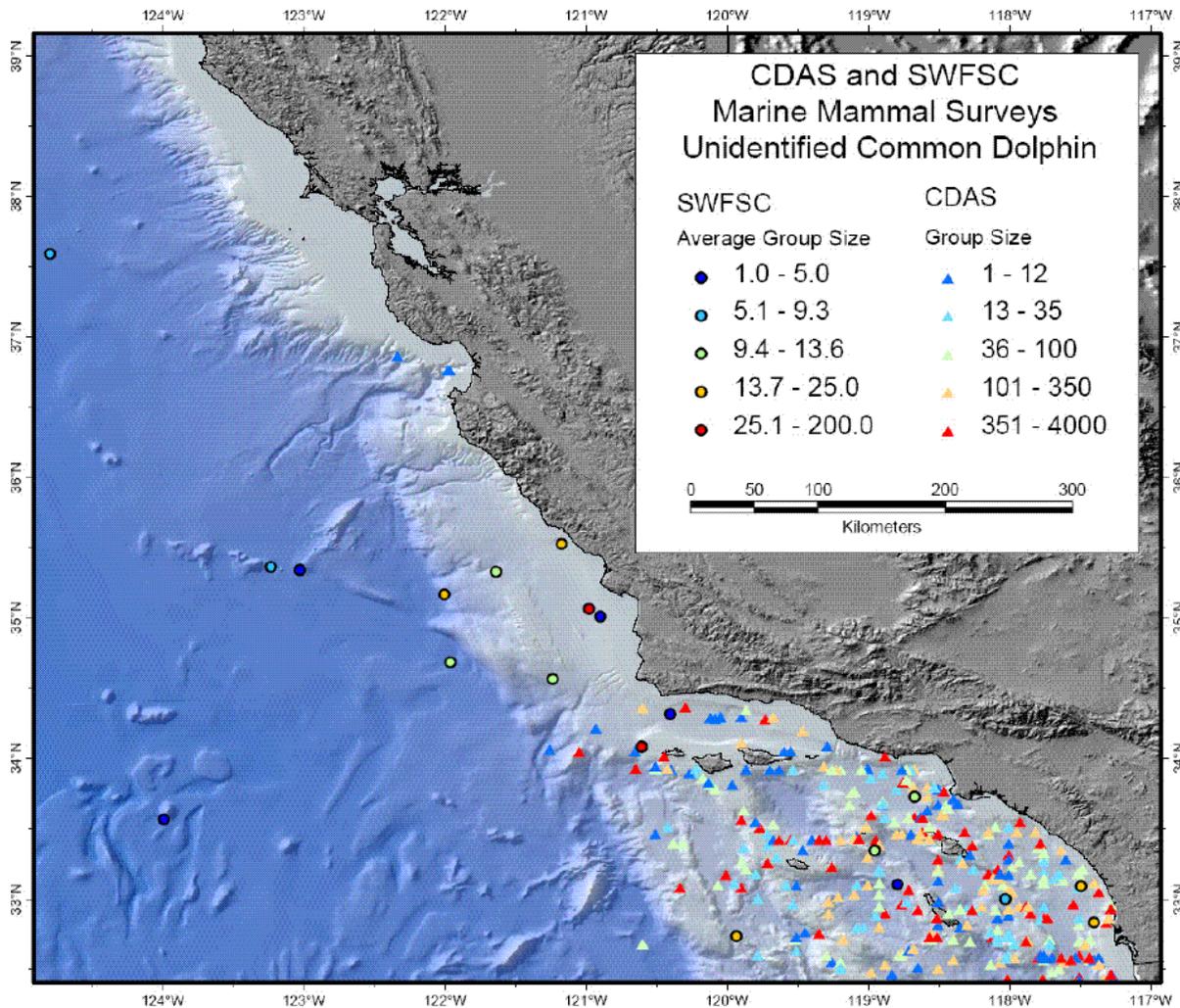
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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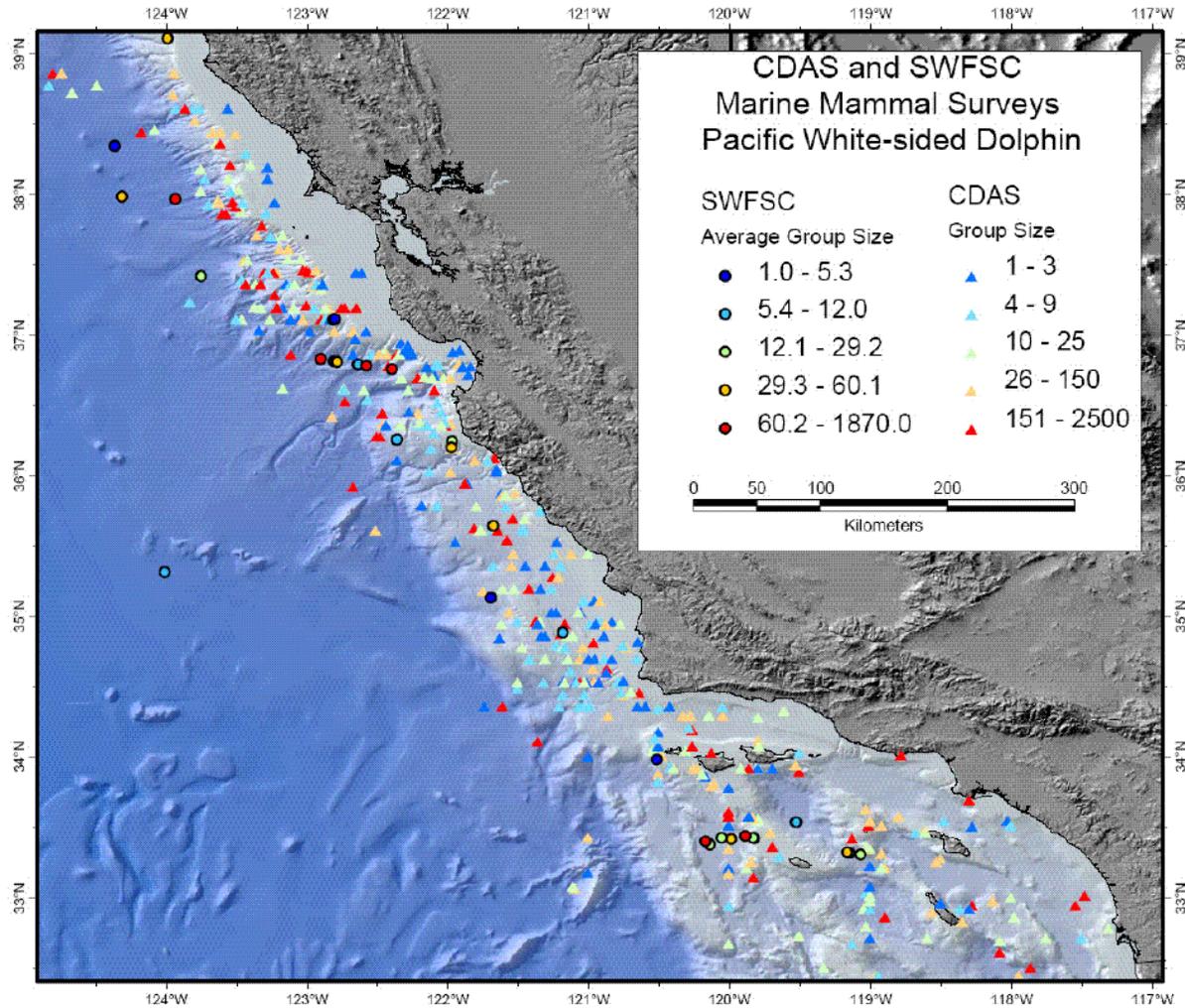
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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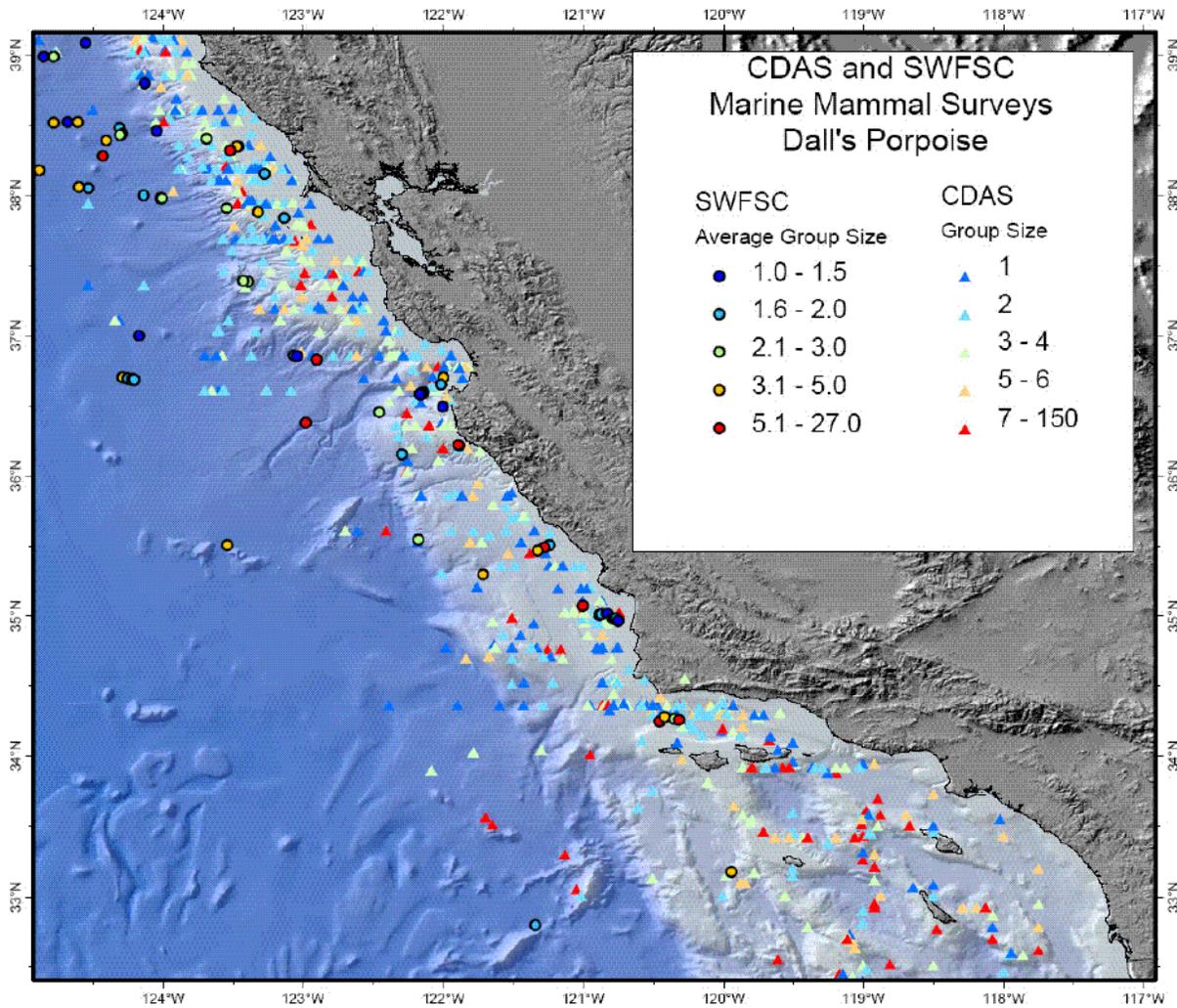
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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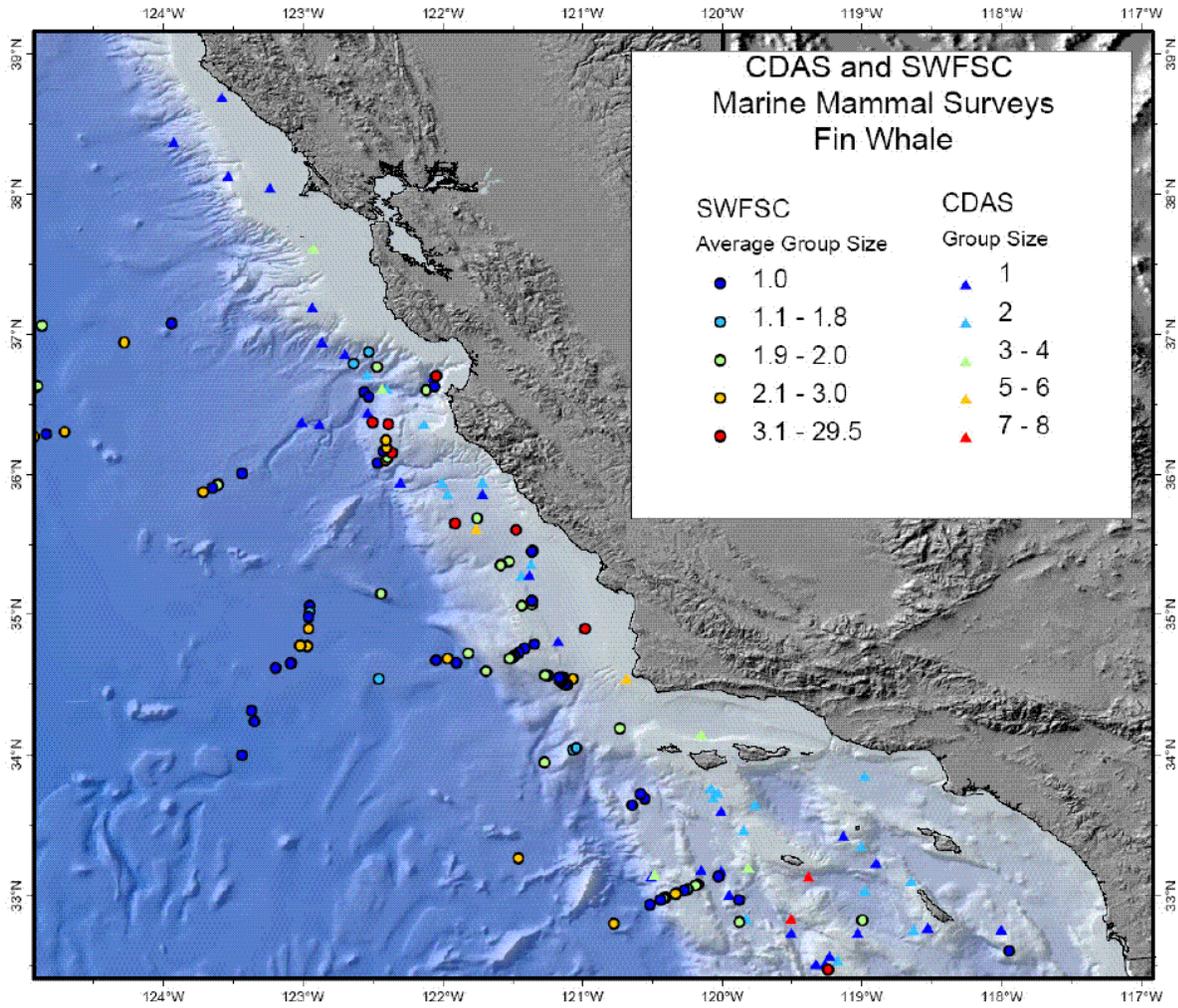
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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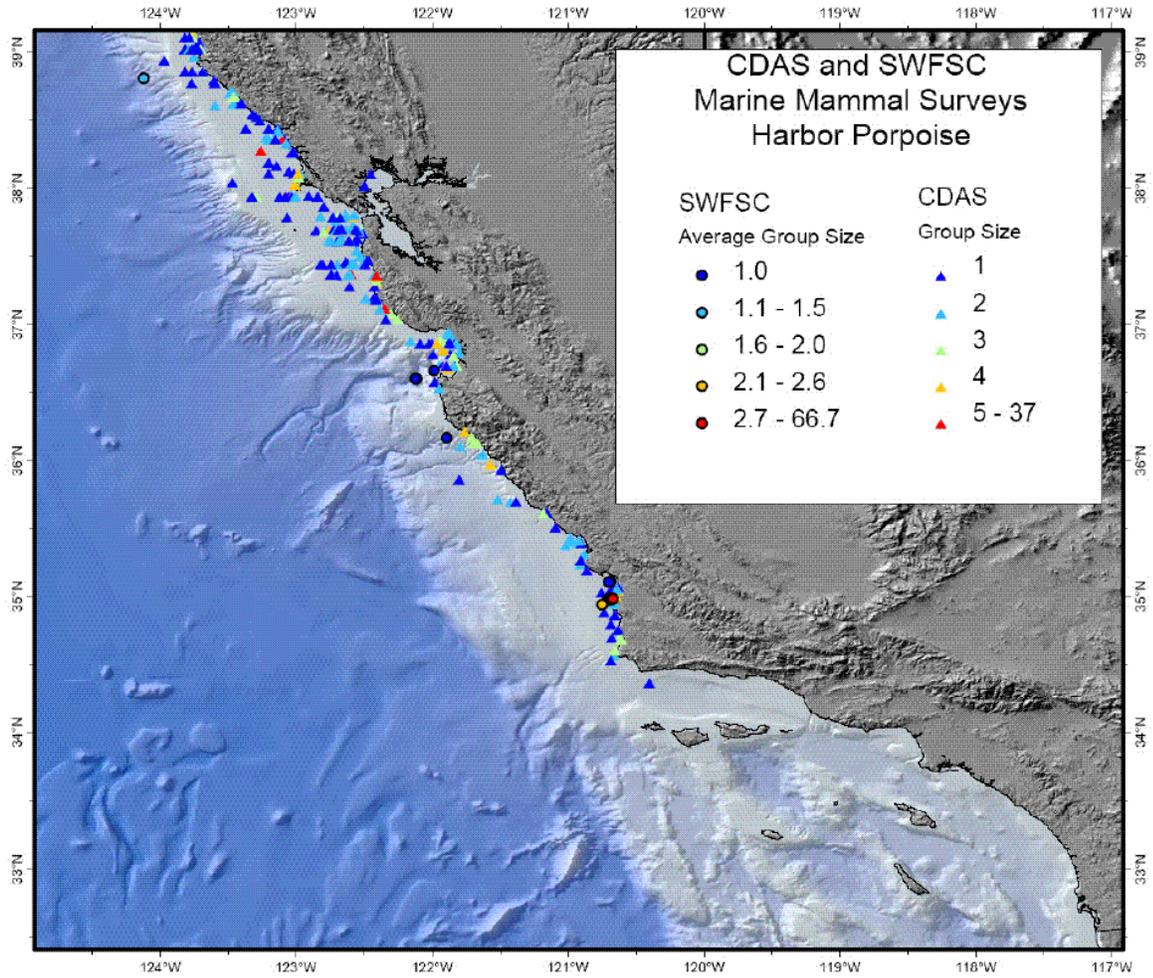
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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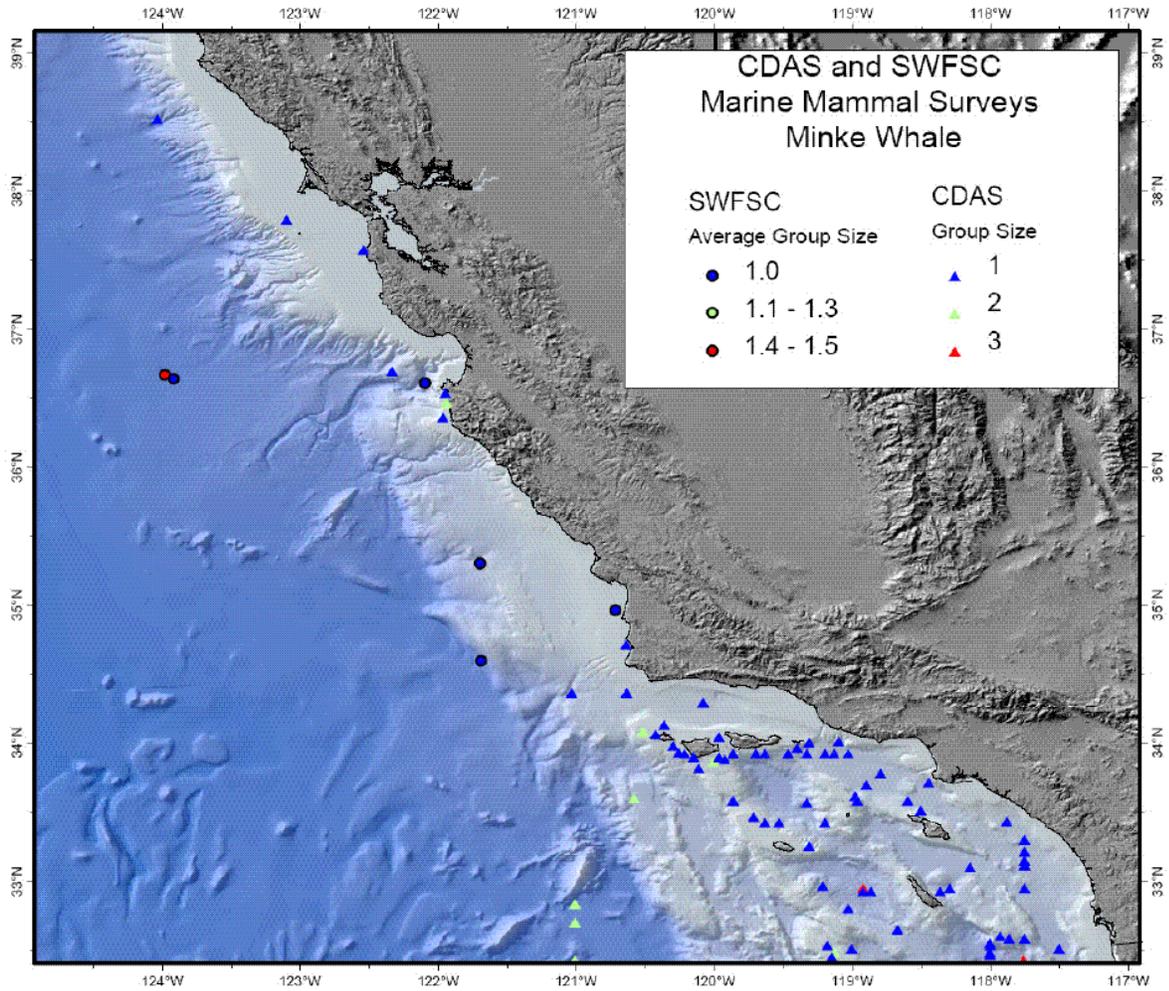
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

EXHIBIT No. MAR – 3 (10 of 14)
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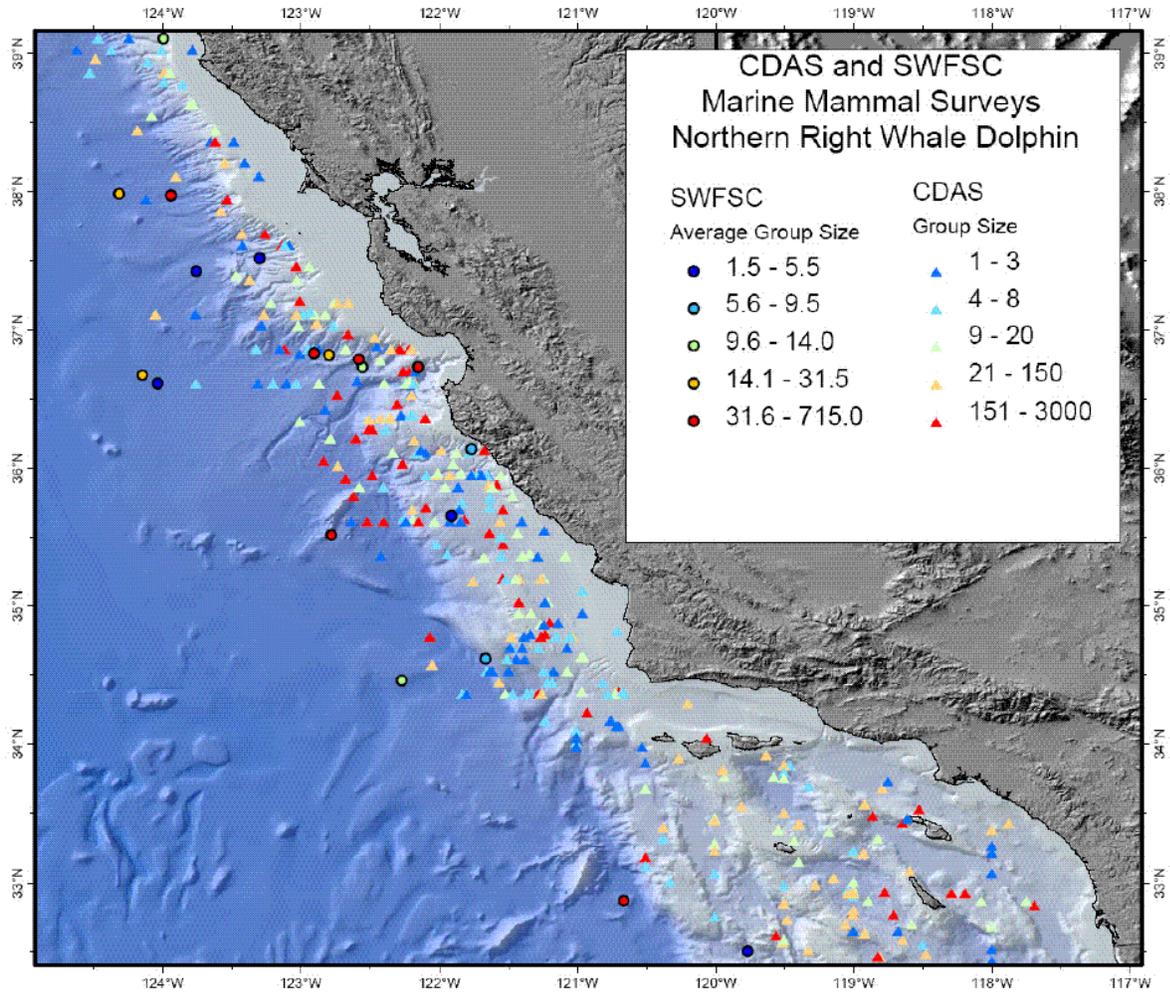
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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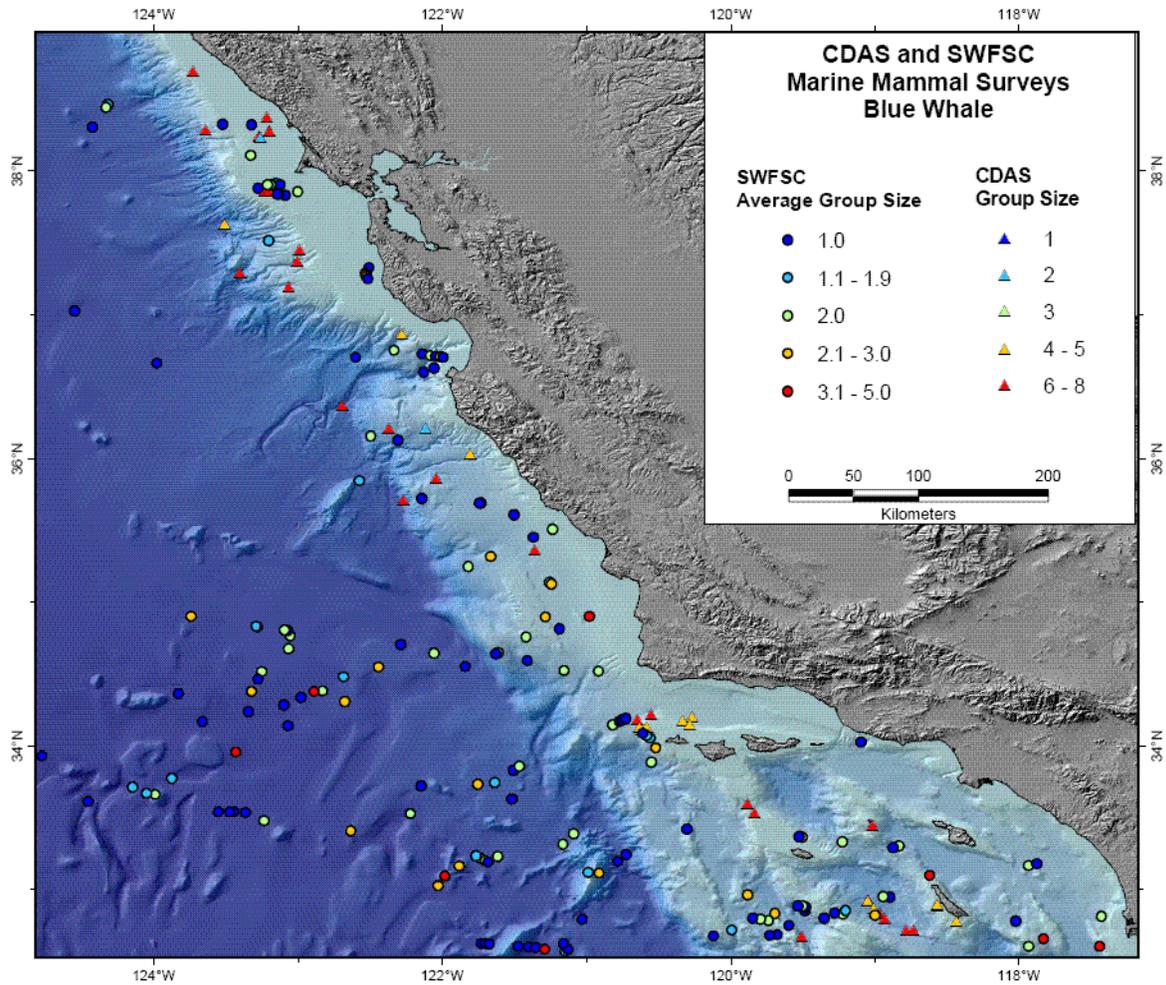
Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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Source: NOAA National Centers for Coastal Ocean Science (NCCOS). 2005. *A Biogeographic Assessment of the Channel Islands National Marine Sanctuary.*

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Table 4.1-1 Construction Noise from Offshore Marine Spread for the Pipelines – Underwater

Equipment Type	Reference dB	Number of Devices	Average Load	Estimated Noise Level, dB ref, 1 μ PA (RMS)					
				1 m	10 m	100 m	1 km	5 km	10 km
Small Drilling Rig (offshore)	174	1	40%	170	150	130	110	96	90
Exit Hole Barge Tug	171	1	20%	164	144	124	104	90	84
Supply Boat	181	1	20%	174	154	134	114	100	94
Lorelay Pipe Ship	172	1	100%	172	152	132	112	98	92
Supply Boat	181	1	35%	176	156	136	116	102	96
Large Crane (100 ton)	156	1	50%	153	133	113	93	79	73
Small Crane (35 ton)	156	1	50%	153	133	113	93	79	73
Tugboats	171	2	20%	167	147	127	107	93	87
Survey Vessel	159	1	35%	154	134	114	94	80	74
Helicopter	162	1	100%	162	142	122	102	88	82
Worst Case Results (RMS)				180	160	140	120	106	100

References

- 1) Malmé, C. I., P.I. Miles, et al. 1984. Investigations of the potential effects of underwater noise from petroleum industry activities on migrating gray whale behavior – Phase 2. MMS, Anchorage, AK. NTIS-PB-86-218377.
- 2) Simmonds, M., S. Dolman, and L. Wellgart, eds. 2003. Oceans of noise. A WDCS Science report, Chapter 3 Sources of marine noise. Whale and Dolphin Conservation Society (WDCS), United Kingdom, May 2003. Available at <http://www.wdcs.org>
- 3) NOAA. 2002. Understanding Ocean Acoustics. Acoustic Monitoring Project, NOAA Pacific Marine Environmental Laboratory. <http://oceanexplorer.noaa.gov/explorations/sound01/background/acoustics/acoustics.html>
- 4) U.S. Navy. Principals of Underwater Sound, <http://www.fas.org/man/dod-101/navy/docs/fun/part08.htm>

Source: Noise Analysis of Onshore and Offshore Construction Phase, BHP Billiton LNG Cabrillo Port Project, Oxnard And Santa Clarita, California. Prepared By: ENTRIX, Inc. REVISED August 2004.

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Table 4.1-4 Construction Noise from Offshore Marine Spread for the FSRU, Mooring and Riser Systems – Underwater

Equipment Type	Reference DB	Number of Devices	Average Load	Estimated Noise Level, dB ref, 1 μ PA (RMS)					
				1 m	10 m	100 m	1 km	5 km	10 km
AHTS	181	2	35%	179	159	139	119	105	99
Work Boat	159	1	35%	154	134	114	94	80	74
Tugboats	171	2	20%	167	147	127	107	93	87
Survey Vessel	159	1	35%	154	134	114	94	80	74
Helicopter	162	1	100%	162	142	122	102	88	82
Worst Case Results (RMS)				180	160	140	120	106	100

References

- 1) Maime, C. I., P.I. Miles, et al. 1984. Investigations of the potential effects of underwater noise from petroleum industry activities on migrating gray whale behavior – Phase 2. MMS, Anchorage, AK. NTIS-PB-86-218377
- 2) Simmonds, M., S. Dolman, and L. Weilgart, eds. 2003. Oceans of noise. A WDCS Science report., Chapter 3, Sources of marine noise. Whale and Dolphin Conservation Society (WDCS), United Kingdom, May 2003. Available at <http://www.wdcs.org>
- 3) NOAA. 2002. Understanding Ocean Acoustics. Acoustic Monitoring Project, NOAA Pacific Marine Environmental Laboratory. <http://oceanexplorer.noaa.gov/explorations/sound01/background/acoustics/acoustics.html>
- 4) US Navy. Principals of Underwater Sound, <http://www.fas.org/man/dod-101/navy/docs/fun/part08.htm>

Source: Noise Analysis of Onshore and Offshore Construction Phase, BHP Billiton LNG Cabrillo Port Project, Oxnard And Santa Clarita, California. Prepared By: ENTRIX, Inc. REVISED August 2004.

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BHP Cabrillo Port

Table 4.7-13 Total Broadband Noise Generated under Different Operation Scenarios with Attenuation at 1 m from Source and Distance to Take Thresholds and Background Level

Operation Scenario	Expected Duration of Operation Scenario	Broadband (22 Hz to 11300 Hz) total (rms) at 1 m from source (dB re 1 µPa)	Potential Level A take = 190 dB re 1 µPa – rms	Potential Area Affected at Level A (190 dB) Take Threshold, Centered Around FSRU	Potential Level A take = 180 dB re 1 µPa – rms	Potential Area Affected at Level A (180 dB) Take Threshold, Centered Around FSRU	Potential Level B take = 120 dB re 1 µPa – rms (continuous)	Potential Area Affected at Level B Take Threshold, Centered Around FSRU	Distance at which Total Radiated Noise Levels Would Equal Background Noise Level (Approx. 90 dB) ^a
Case 1: 800 MMscfd, FSRU plus standard operating equipment	Approximately 90 percent of the time	181.6	NA	NA	3.9 feet (1.2 m)	47.8 square feet (4.5 m ²)	0.9 miles (1.4 km)	2.4 mi ² (6.2 km ²)	24.9 miles (40 km)
Case 2: 1.5 Bscfd, FSRU plus standard operation equipment for maximum throughput	Not a continuous operating scenario, but would allow surges in gas demand to be accommodated	182.5	NA	NA	4.3 feet (1.3 m)	57.0 square feet (5.3 m ²)	1.0 miles (1.6 km)	3.1 mi ² (8.0 km ²)	24.9 miles (40 km)
Case 3: Same as Case 1 but with main noise-contributing equipment mounted on vibration isolators	Expected approx. 90 percent of the time	178.2	NA	NA	NA	NA	0.4 miles (0.6 km)	0.4 mi ² (1.1 km ²)	16.2 miles (26 km)
Case 4: Same as Case 1 but LNG carrier alongside for day loading, no tugs	Approximately 10 percent of FSRU operating conditions	182	NA	NA	4.3 feet (1.3 m)	57.0 square feet (5.3 m ²)	1.0 miles (1.6 km)	3.1 mi ² (8.0 km ²)	24.9 miles (40 km)

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/ Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

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Consistency Certification CC-079-06
BHP Cabrillo Port

Table 4.7-13 Total Broadband Noise Generated under Different Operation Scenarios with Attenuation at 1 m from Source and Distance to Take Thresholds and Background Level

Case 5: Same as Case 4, but with tugs and maneuvering either side of loading sequence	Approximately 11.5 hours per week, or 6.8 percent of FSRU operating conditions.	192.6	4.6 feet (1.4 m)	66.7 square feet (6.2 m ²)	14.1 feet (4.3 m)	625.0 square feet (58.1 m ²)	11.1 miles (17.9 km)	389.0 mi ² (1006.6 km ²)	80.8 miles (130 km)
Case 6: FSRU running at 1.5 Bscfd with tugs and maneuvering	Approximately 11.5 hours per week or 6.8 percent of FSRU operating conditions	192.6	4.6 feet (1.4 m)	66.7 square feet (6.2 m ²)	14.1 feet (4.3 m)	625.0 square feet (58.1 m ²)	11.1 miles (17.9 km)	389.0 mi ² (1006.6 km ²)	80.8 miles (130 km)
Case 7: FSRU running at 1.5 Bscfd with IGG operating	Highly unlikely to occur because FSRU not expected to reach peak throughput during IGG operation.	184.7	NA	NA	5.6 feet (1.7 m)	98.0 square feet (9.1 m ²)	1.1 miles (1.7 km)	3.5 mi ² (9.1 km ²)	33.6 miles (54 km)

Source: CJ Engineering 2006 (Appendix H3).

Notes:

MMscfd = million standard cubic feet per day; Bscfd = billion standard cubic feet per day; IGG = inert gas generator

^a Distances and areas were estimated by E & E based upon noise levels given in CJ Engineering 2006.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/ Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

Modeling Assumptions for Underwater Construction Noise

3 Page Excerpt from:

“Noise Analysis of Onshore and Offshore Construction Phase, BHP Billiton International Cabrillo Port Project, Oxnard and Santa Clarita, California”. Prepared for BHP Billiton by Entrix, Inc. Revised August 2004.

4.1.1 Offshore marine spread for the Pipelines

Table 4.1-1 shows the planned equipment types for the construction activity of the offshore marine spread for the pipelines and their associated reference dB (ref. 1 μ PA), the estimated number of devices to be used, and the estimated average engine load. Helicopter flyover is calculated at minimum altitude, where impacts underwater would be the greatest. Estimated underwater noise level in dB is shown at intervals of 1 meter to 10 km, from the reference noise level cited in the literature, and by calculating the sound pressure levels at each specified distance. Estimated worst case results at each distance were tabulated based upon inverse distance and root mean square calculations as described below.

For underwater sound, the decibel scale is defined as:

$$\text{dB} = 10 \log (P_d^2/P_o^2) = 20 \log (P_d/P_o)$$

where: dB = noise level, decibels

P_d = sound pressure measured or sensed at distance d, N/m²

P_o = referenced sound pressure in water, 1×10^{-6} N/m² (1 μ PA)

In deep water (>200 meters), the sound pressure is inversely proportional the distance d from the source (Inverse Distance Law):

$$P_d = (\text{constant}) (D_d/D_o)^{-1} = (\text{constant}) (D_o / D_d)$$

where: P_d = sound pressure measured or sensed at distance d, N/m²

D_d = receiver distance from source, meters

D_o = reference distance from source, 1 meter

Noise reductions following the Inverse Distance Law demonstrate about a 20 dB falloff with each order-of-magnitude increase in distance from the source, as shown in Table 4.1-1.

Sound pressure from multiple sources in one location or sources operating as less than rated power follow the root mean square (RMS) relationship (square root of the sum of squares):

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Consistency Certification CC-079-06
BHP Cabrillo Port

4.1.1 Offshore marine spread for the Pipelines

Table 4.1-1 shows the planned equipment types for the construction activity of the offshore marine spread for the pipelines and their associated reference dB (ref. 1 μ PA), the estimated number of devices to be used, and the estimated average engine load. Helicopter flyover is calculated at minimum altitude, where impacts underwater would be the greatest. Estimated underwater noise level in dB is shown at intervals of 1 meter to 10 km, from the reference noise level cited in the literature, and by calculating the sound pressure levels at each specified distance. Estimated worst case results at each distance were tabulated based upon inverse distance and root mean square calculations as described below.

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D_d = receiver distance from source, meters

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Noise reductions following the Inverse Distance Law demonstrate about a 20 dB falloff with each order-of-magnitude increase in distance from the source, as shown in Table 4.1-1.

Sound pressure from multiple sources in one location or sources operating as less than rated power follow the root mean square (RMS) relationship (square root of the sum of squares):

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$$\text{Total P} = (P_1^2 + P_2^2 + P_3^2 + P_4^2 + \dots + P_n)^{0.5}$$

where: P_n = sound pressure from source n at reference distance D_0 .

n = number of sources

Under the RMS relationship, two identical sound pressure sources operating at the same location produce about 1.4 times the sound energy of a single source. Conversely, a sound pressure source operating at 50% of rated load produces about 0.7 times the sound energy of full load operation. This method is used to account for equipment quantities and loads shown in Table 4.1-1. At the source, the noise level is calculated to be 180 dBA ref 1 upa, decreasing to 120 dBA ref 1 upa at 1 km.

Source: Entrix, Inc. 2004. "Noise Analysis of Onshore and Offshore Construction Phase, BHP Billiton International Cabrillo Port Project, Oxnard and Santa Clarita, California". Revised August 2004.

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Consistency Certification CC-079-06
BHP Cabrillo Port



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

JAN 31 2007

In response, refer to:
151404SWR2004PR13870:MLD

Mark A. Prescott
Chief, Deepwater Ports Standards Division
U.S. Coast Guard
2100 Second Street, S.W.
Washington, D.C. 20593-0001

Dear Chief Prescott:

NOAA's National Marine Fisheries Service (NMFS) has reviewed your letter dated December 21, 2006, requesting NMFS' concurrence with the U.S. Coast Guard's (USCG) determination under Section 7 of the Endangered Species Act (ESA) (16 U.S.C. § 1536(a)(2)) on the effects of the construction and operation of the proposed Cabrillo Port Deepwater Port on listed species. The proposed Deepwater Port would be located approximately 14 miles off Ventura County, on the shoreward side of the Southern California Bight (SCB). The applicant, BHP Billiton, has proposed a floating, storage, and regasification unit for transforming liquefied natural gas (LNG) back to its gaseous state. USCG has requested that NMFS concur with its determination that "this project will not likely affect the continued existence of any threatened or endangered species or lead to the destruction of critical habitat" (Page 2 of USCG December 21, 2006 letter).

The December 21, 2006, letter disagrees with NMFS' recommendation in our letter dated July 14, 2006, that the Region of Influence (ROI) be expanded beyond the SCB to include waters from the project location to the U.S. Exclusive Economic Zone (EEZ). As stated in the December 21, 2006, letter, and in the Draft Environmental Impact Statement/Report (EIS/EIR) and the Revised Draft EIR, the possibility of impacts to marine mammals and sea turtles from ship strikes and possible avoidance behavior by these animals in response to increase ship traffic associated with the project does exist. NMFS supports USCG's recommendation that any license that is granted will include a condition that all LNG carriers transit in the specific east-west transit lanes within the EEZ. However, the action area of the project should include all areas to be affected directly or indirectly by the action, and not merely the immediate area involved in the action (50 CFR 402.02). The action area is considered to be all terrestrial and aquatic environments affected by the construction and operation of the LNG terminal and pipelines. The marine portion of the action area should therefore be considered to extend from the marine basin of the Cabrillo Port LNG terminal including all LNG traffic lanes within the EEZ of the Pacific Ocean.

In the December 21, 2006, letter USCG states that noise impacts associated with the construction of the proposed project may result in both Level A and Level B takes under the Marine Mammal Protection Act (MMPA). Given this determination, NMFS recommends that USCG and/or the applicant apply for a Letter of Authorization (LOA) under the MMPA for construction operations. USCG also states that noise impacts associated with the operations of



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Consistency Certification CC-079-06
BHP Cabrillo Port

the proposed project may result in Level B takes under the MMPA. NMFS recommends that USCG and/or the applicant apply for either an Incidental Harassment Authorization (IHA) or LOA under the MMPA for operations of the proposed project. In addition, the December 21, 2006, letter states that "Noise from construction of pipelines under certain scenarios may be likely to adversely affect some marine mammal species." These takes associated with construction and/or operations, may include ESA-listed marine mammal species. Typically, any noise impacts to marine mammals are also likely to impact sea turtles. A take of an ESA-listed species is an adverse effect, therefore, we cannot concur, at this time, with USCG's determination on Page 2 of the December 21, 2006, letter that this project is not likely to adversely affect ESA-listed marine mammal or sea turtle species.

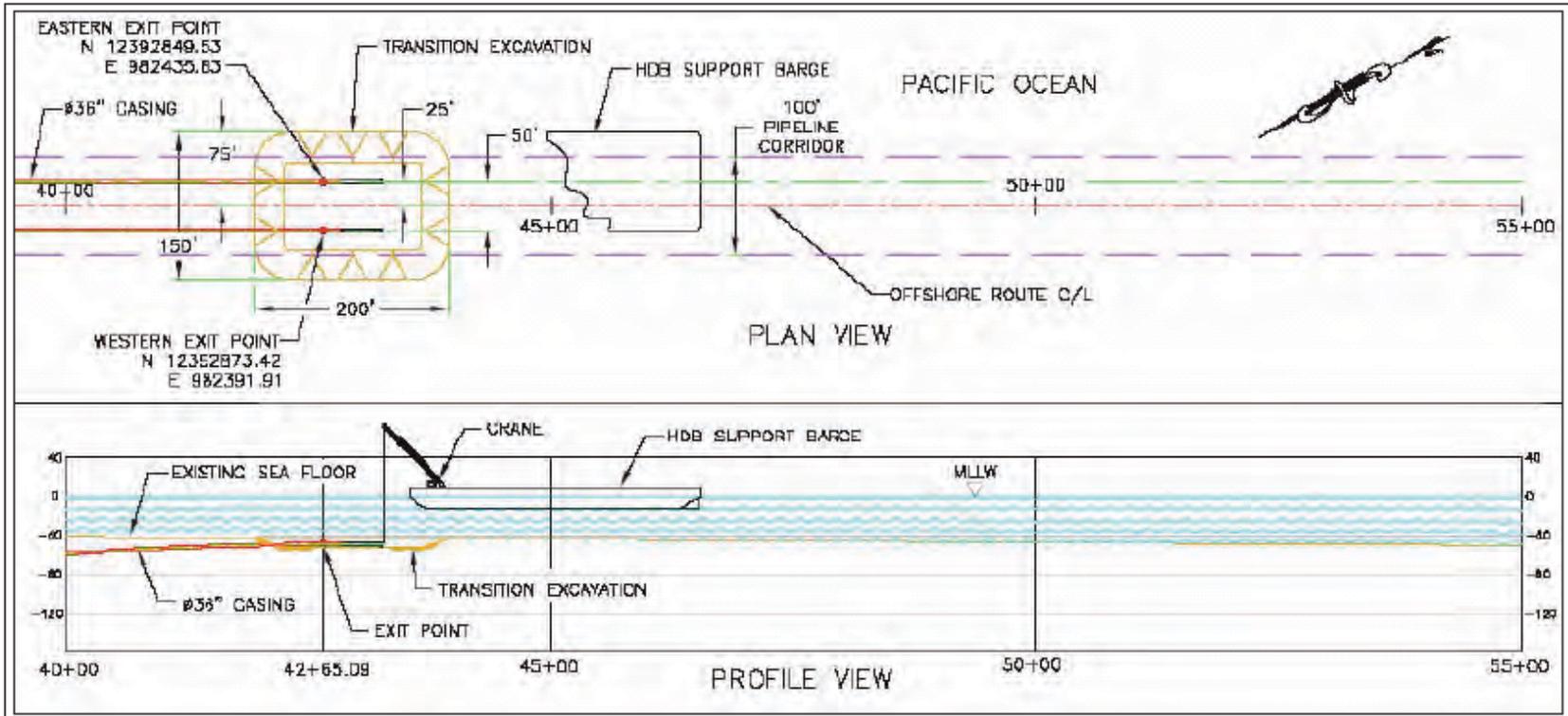
Mitigation and monitoring plans (Plans) have not yet been developed at this stage of the Deepwater Port licensing process because the license may not be granted. Although the Draft EIS/EIR and Revised EIR describe some of the impacts that may occur as a result of the project and state that Plans will be prepared, details on proposed measures to minimize or avoid harm to protected species were not provided to NMFS. NMFS cannot concur with USCG's findings without having the opportunity to review proposed mitigation and monitoring protocols. NMFS would like to accept USCG's offer to participate in the development of these mitigation and monitoring protocols and looks forward to working together on the Plans. Please note that these Plans will need to be available in order to proceed with either the LOA or IHA application process under the MMPA.

The December 21, 2006, letter states that any decommissioning will be included in a separate project-specific document, pursuant to the National Environmental Policy Act. NMFS supports USCG's recommendation to include a licensing condition for any license granted that will ban the use of explosives during decommissioning. As stated in the December 21, 2006, letter in advance of any decommissioning that is undertaken, USCG or applicant, shall provide NMFS with the opportunity to review the proposed decommissioning process to identify potential impacts to protected species.

These comments are provided in accordance with the ESA and MMPA. We appreciate your efforts to comply with Federal regulations and to conserve protected species. As described in this letter, additional information is required before NMFS can proceed with the consultation for this project. Please contact Monica DeAngelis at 562-980-3232 or Monica.DeAngelis@noaa.gov, if you have any questions concerning this letter or if you require additional information.

Sincerely,


for Rodney R. McInnis
Regional Administrator



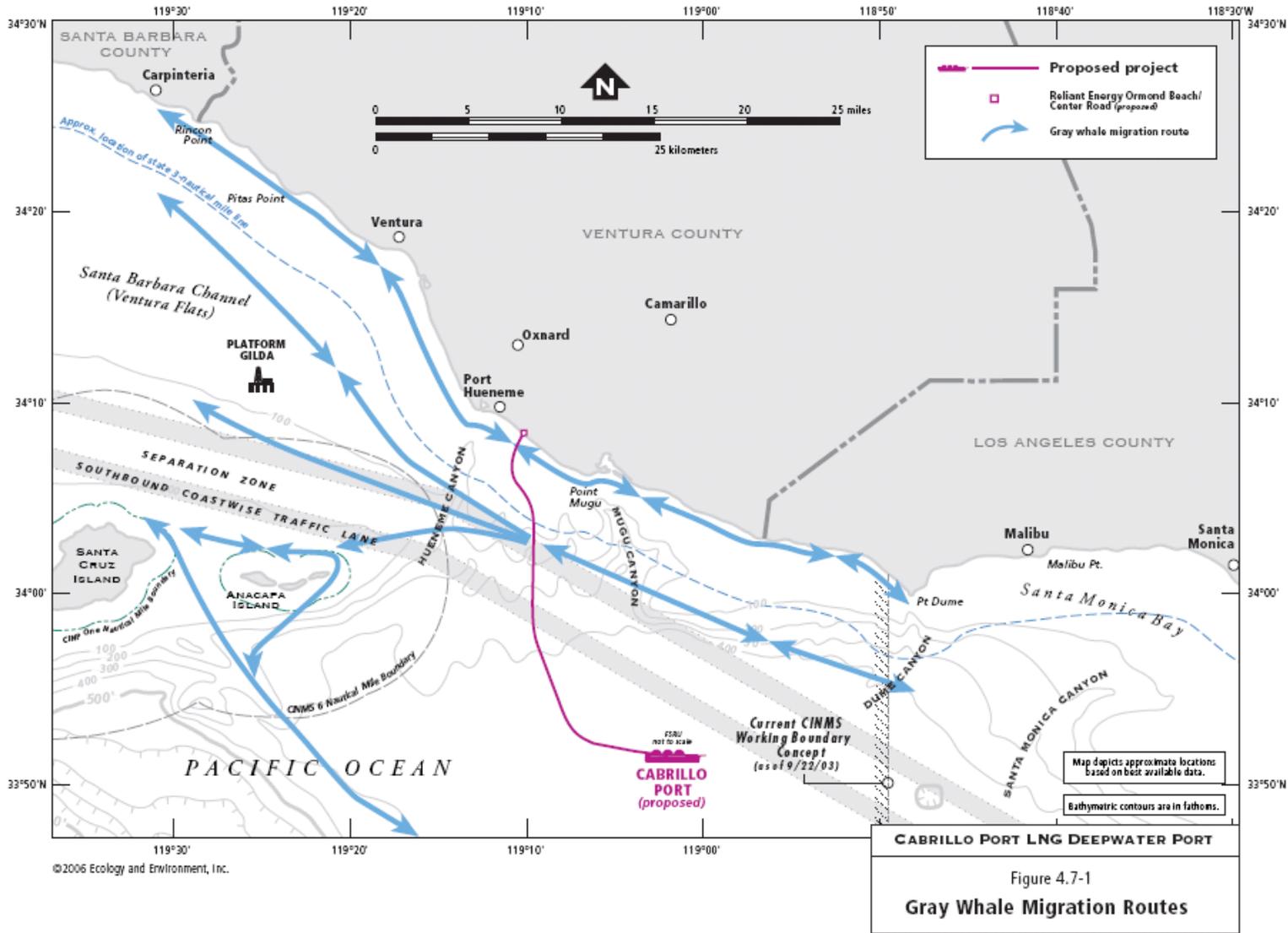
001883.CA04.09.22.e (Final Figs) 01/08/2006

Figure 2.6-3
Typical Offshore HDB Equipment Layout
CABRILLO PORT LNG DEEPWATER PORT

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

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Consistency Certification CC-079-06
BHP Cabrillo Port

References: Howorth, 2004 and Carretta et al, 2000



CABRILLO PORT LNG DEEPWATER PORT
 Figure 4.7-1
Gray Whale Migration Routes

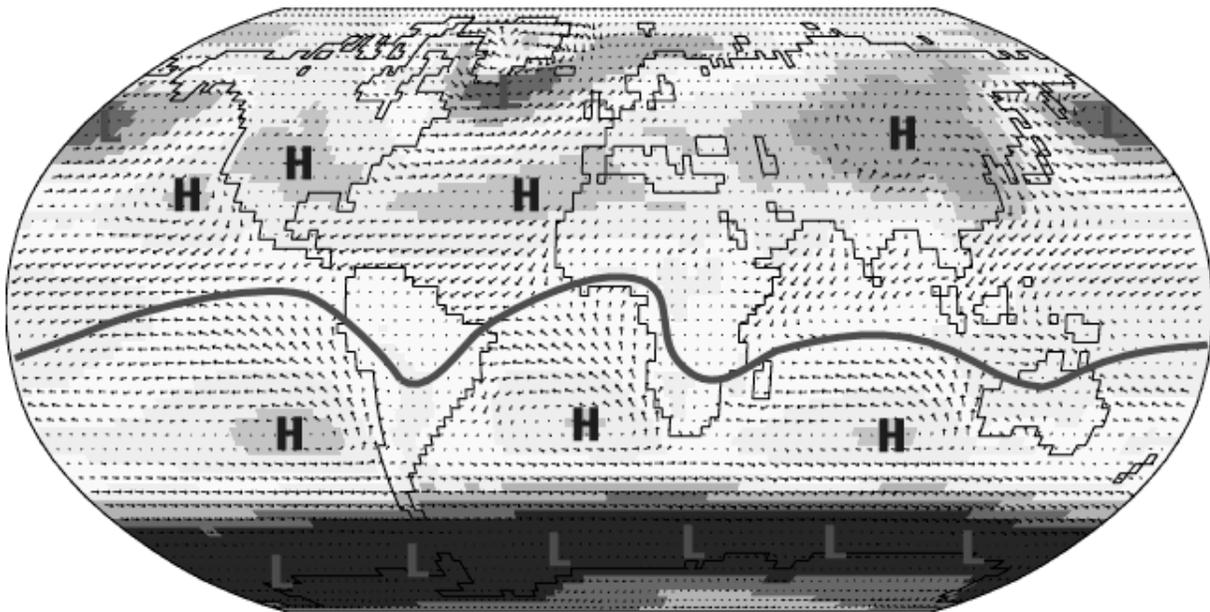
Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

EXHIBIT No. MAR- 9
Consistency Certification CC-079-06
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Position of North Pacific Subtropical High, January and July

Sea-Level Pressure and Surface Winds

Jan



Sea-Level Pressure and Surface Winds

Jul

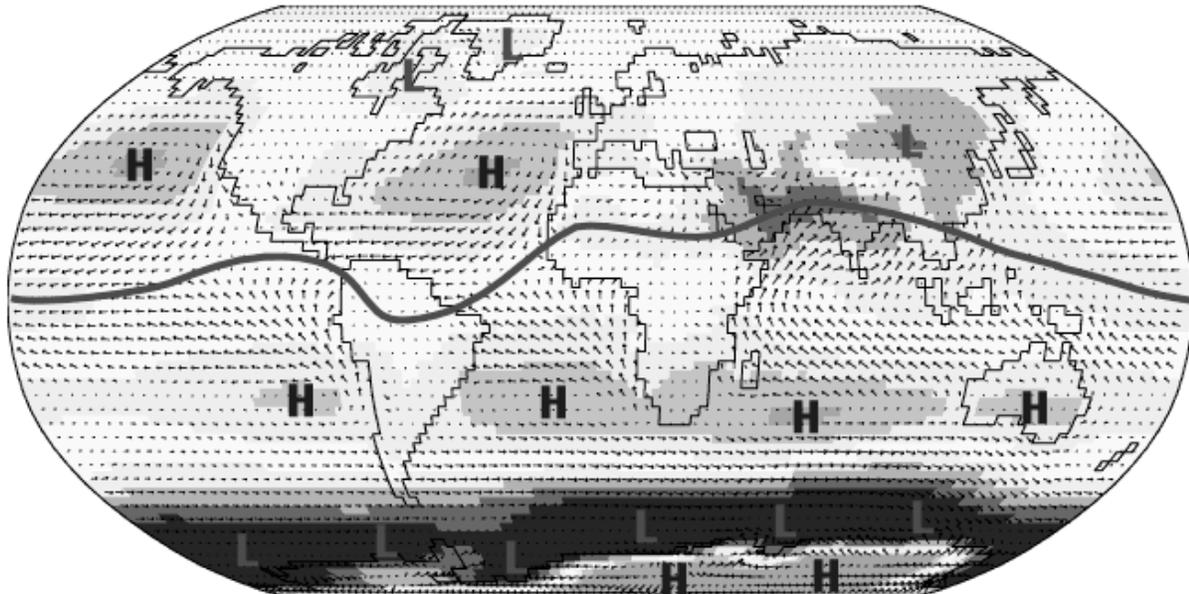


Exhibit No. AIR- 1
Consistency Certification CC-079-06
BHP Cabrillo Port

Santa Monica Basin Buoy Annual Wind Rose

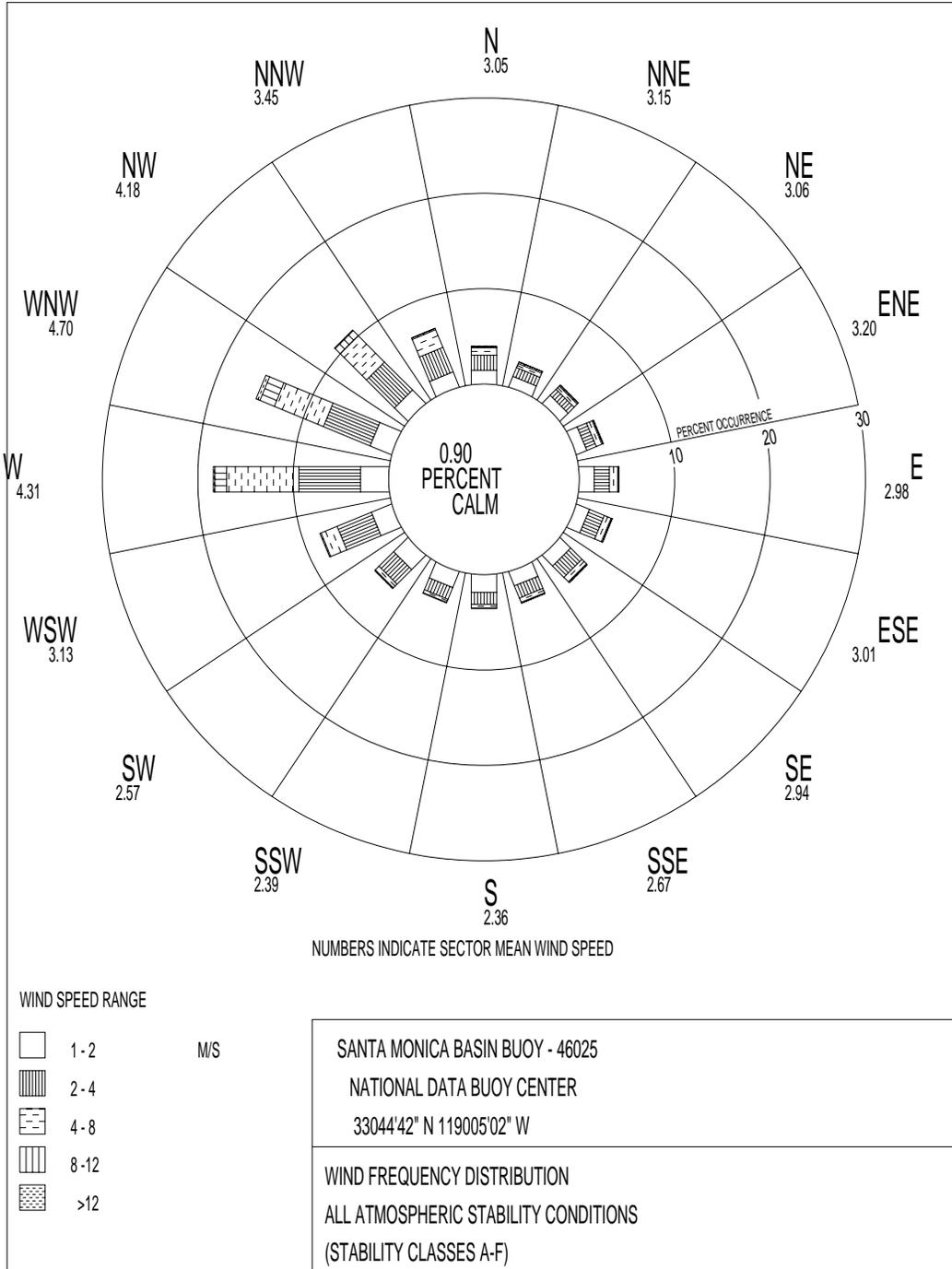


Exhibit No. AIR- 3
Consistency Certification CC-079-06
BHP Cabrillo Port

Santa Monica Basin Buoy Seasonal Wind Roses

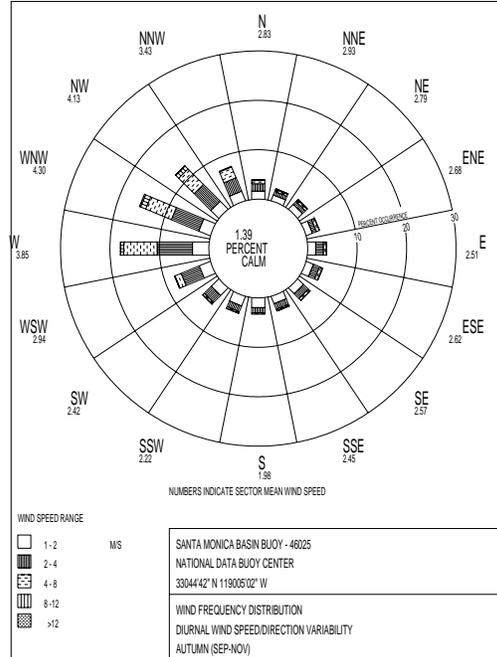
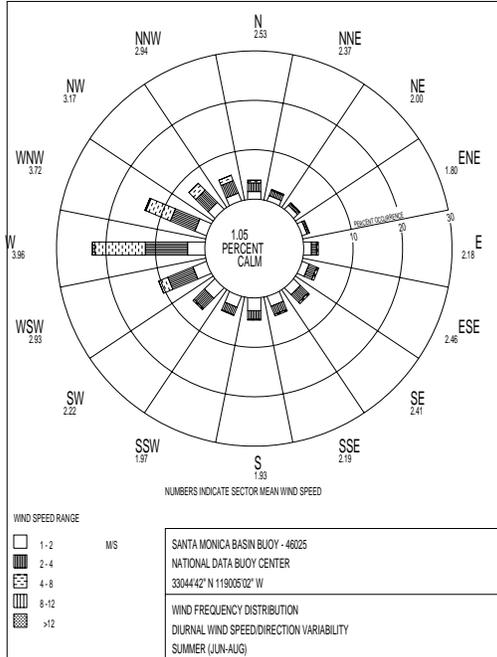
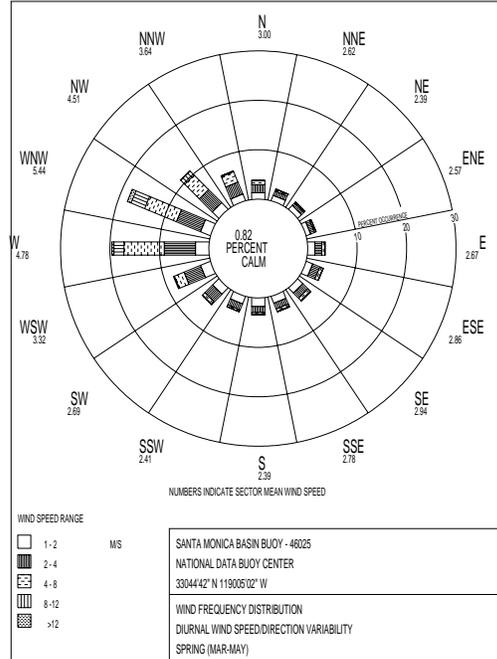
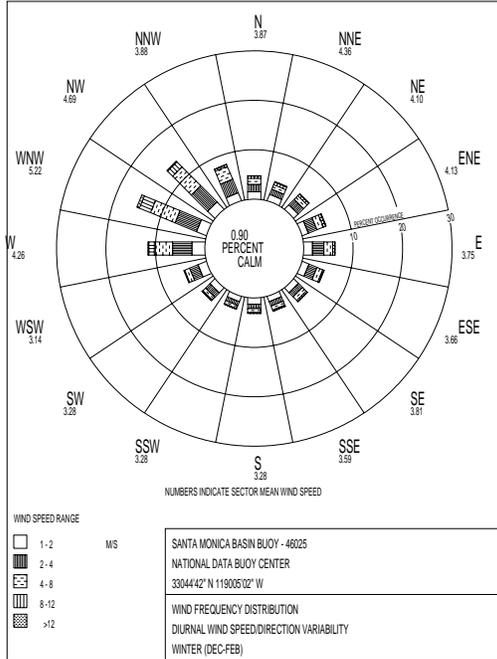
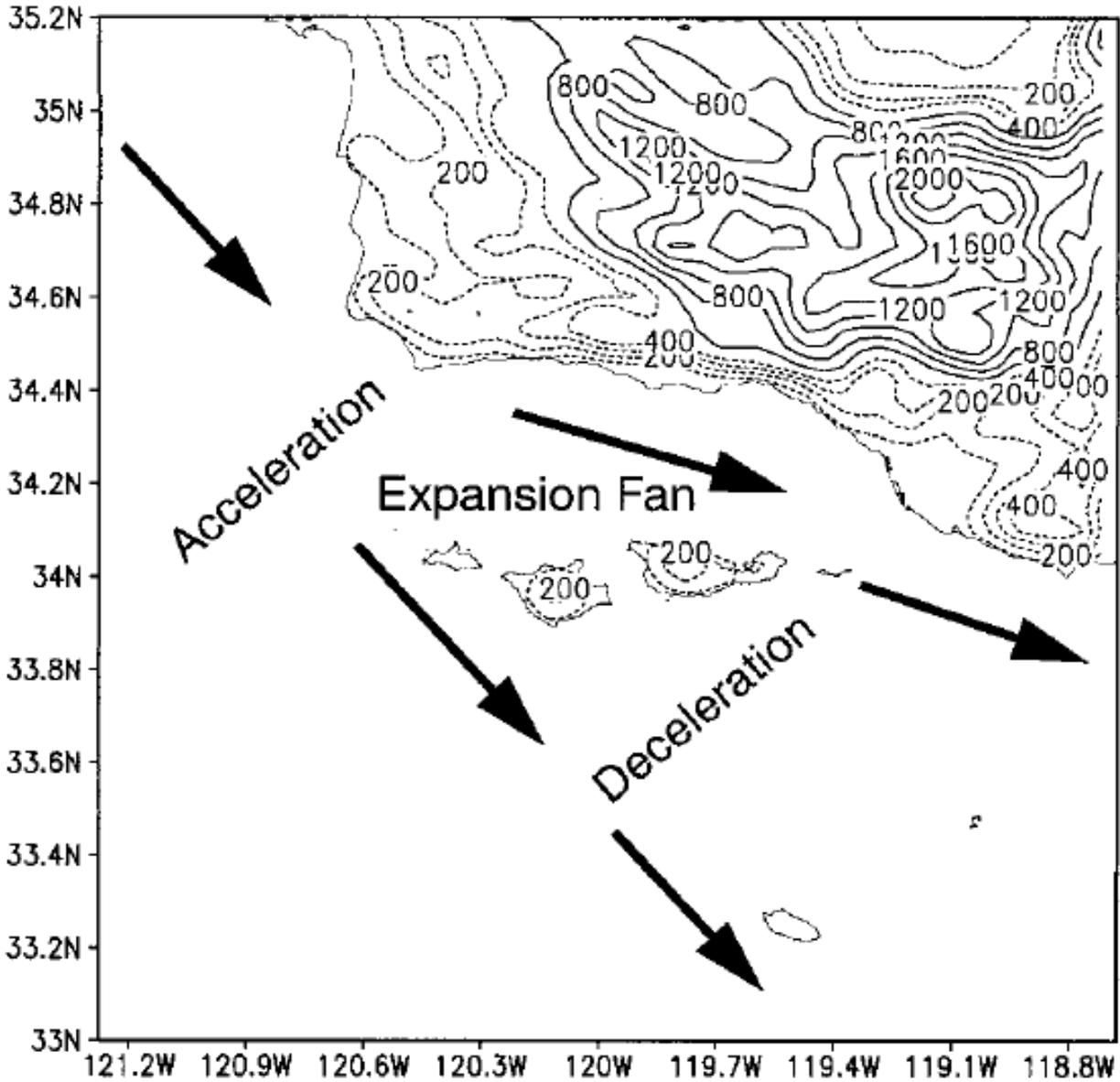


Exhibit No. AIR- 4
Consistency Certification CC-079-06
BHP Cabrillo Port

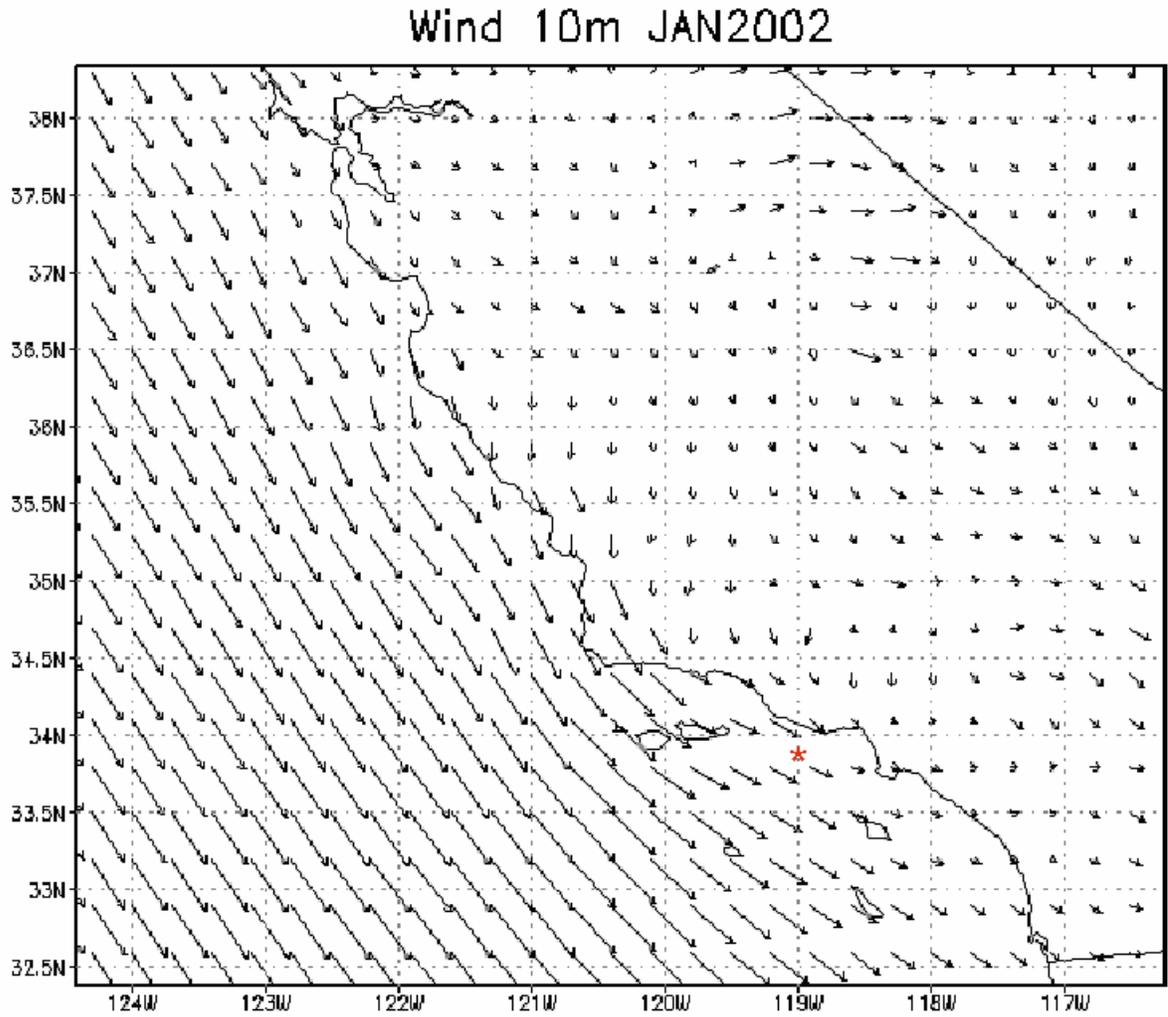
Divergent Wind Flow Pattern South of Point Conception



Source: Skillingstad, E.D., P. Barbour, and C.E. Dorman, 2001. The Dynamics of Northwest Summer Winds over the Santa Barbara Channel. Monthly Weather Review, 129: 1042-1061..

Exhibit No. AIR- 5
Consistency Certification CC-079-06
BHP Cabrillo Port

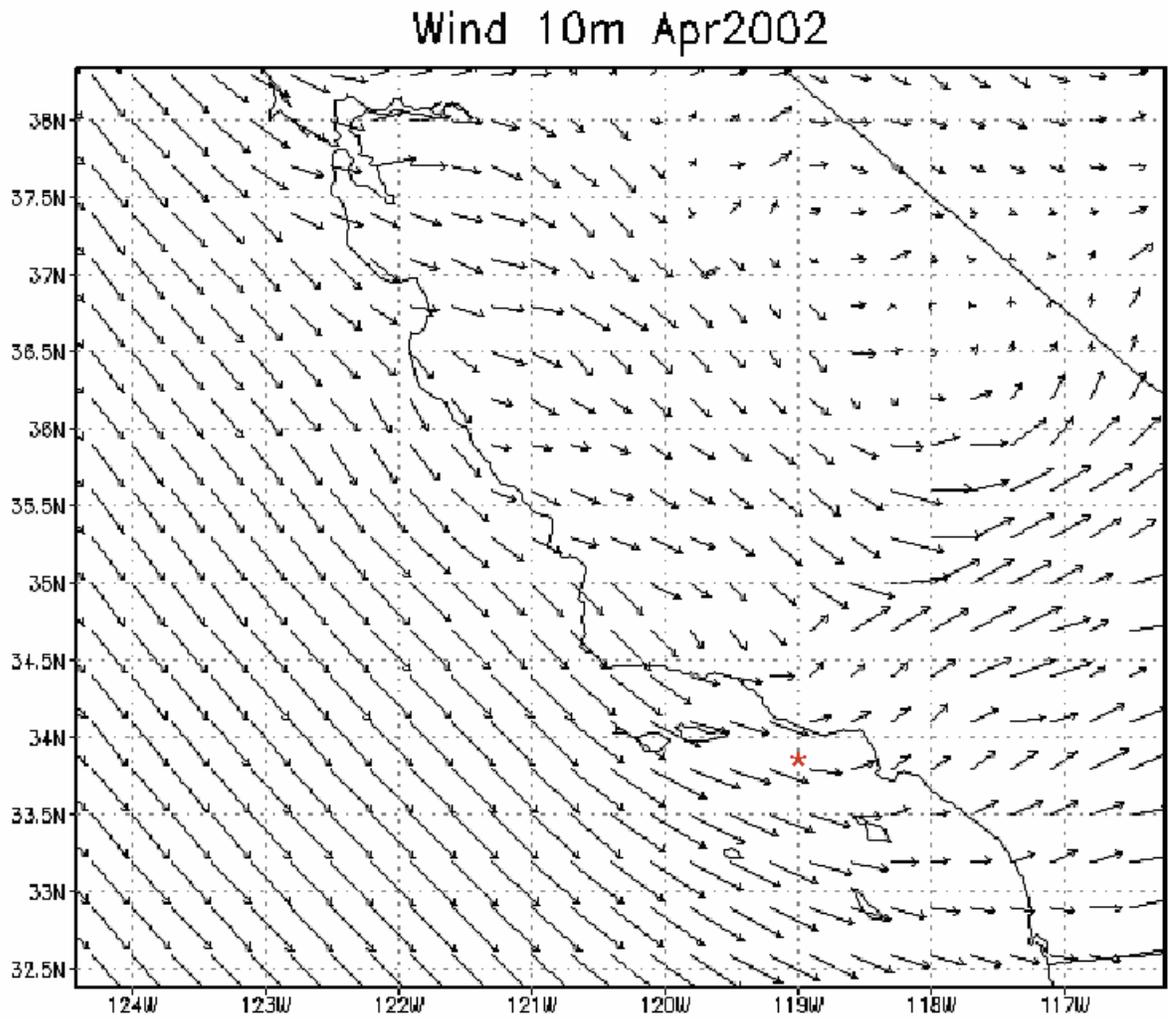
Seasonal West Coast Wind Flow Patterns from 2002 NCEP Reanalysis - January



Data Source: National Center for Environmental Prediction, Office of Global Programs, 2006. NCEP/OGP North American Regional Reanalysis.

Exhibit No. AIR- 6 (1 of 4)
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BHP Cabrillo Port

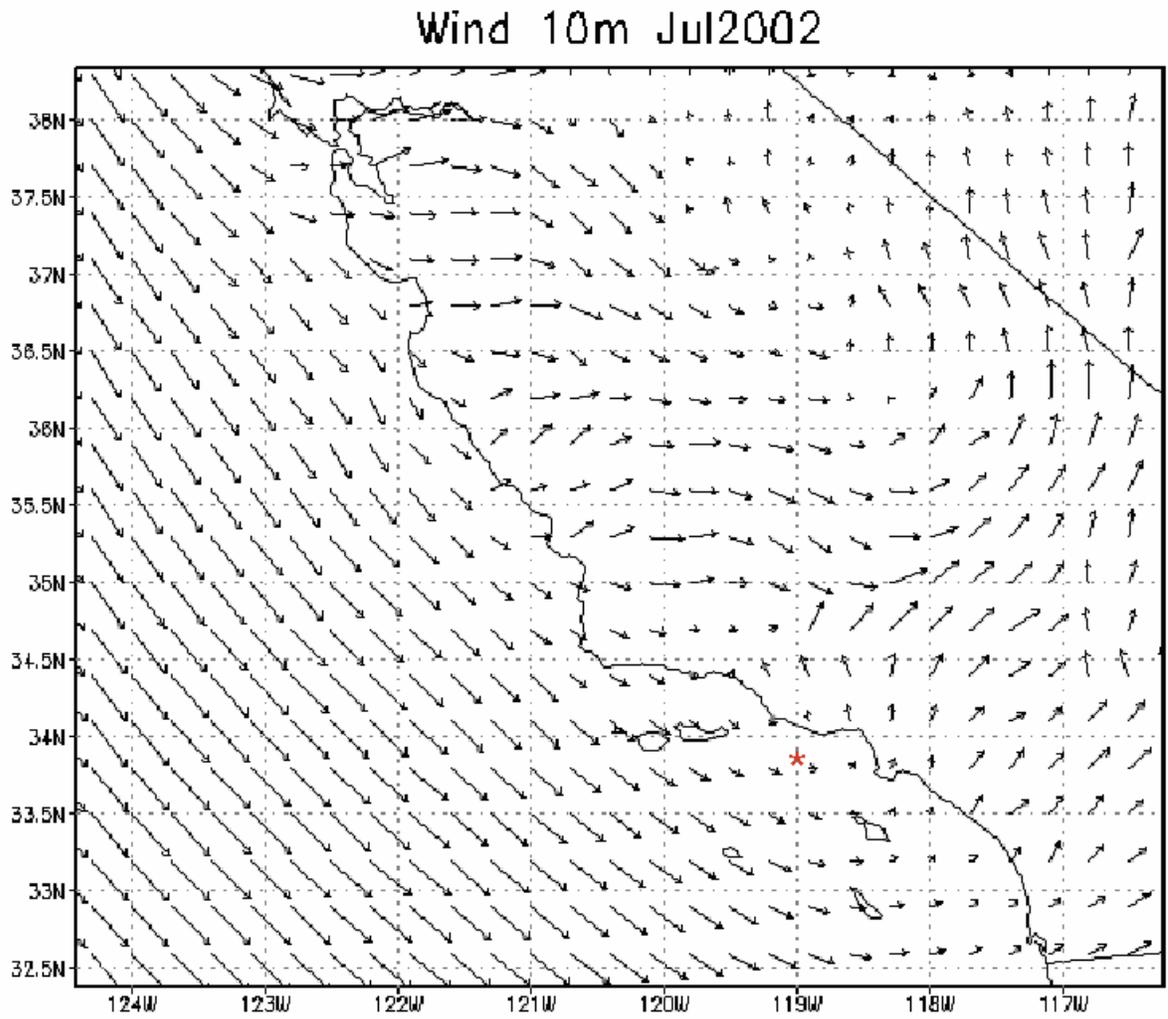
Seasonal West Coast Wind Flow Patterns from 2002 NCEP Reanalysis - April



Data Source: National Center for Environmental Prediction, Office of Global Programs, 2006. NCEP/OGP North American Regional Reanalysis.

Exhibit No. AIR- 6 (2 of 4)
Consistency Certification CC-079-06
BHP Cabrillo Port

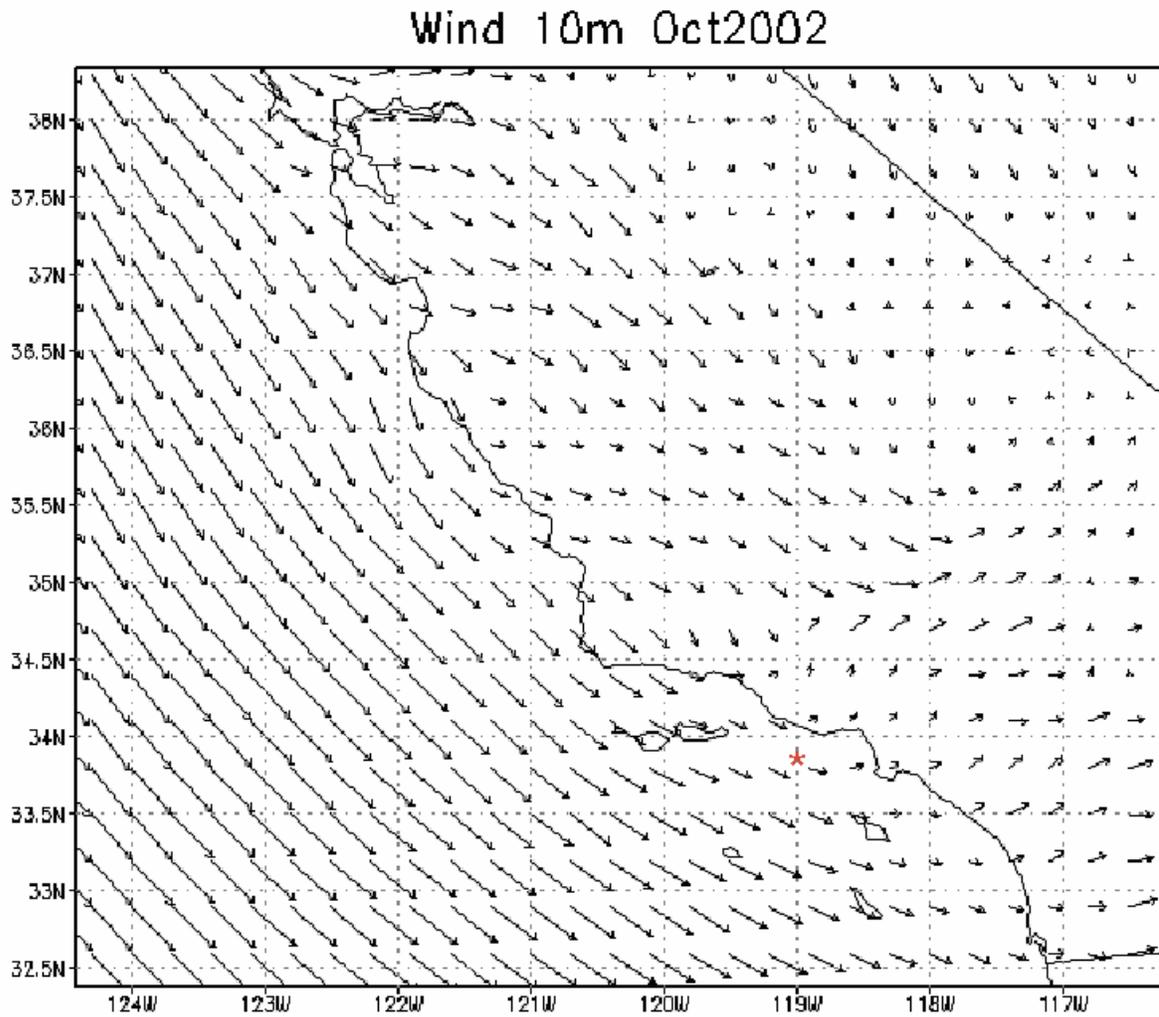
Seasonal West Coast Wind Flow Patterns from 2002 NCEP Reanalysis - July



Data Source: National Center for Environmental Prediction, Office of Global Programs, 2006. NCEP/OGP North American Regional Reanalysis.

Exhibit No. AIR- 6 (3 of 4)
Consistency Certification CC-079-06
BHP Cabrillo Port

Seasonal West Coast Wind Flow Patterns from 2002 NCEP Reanalysis - October



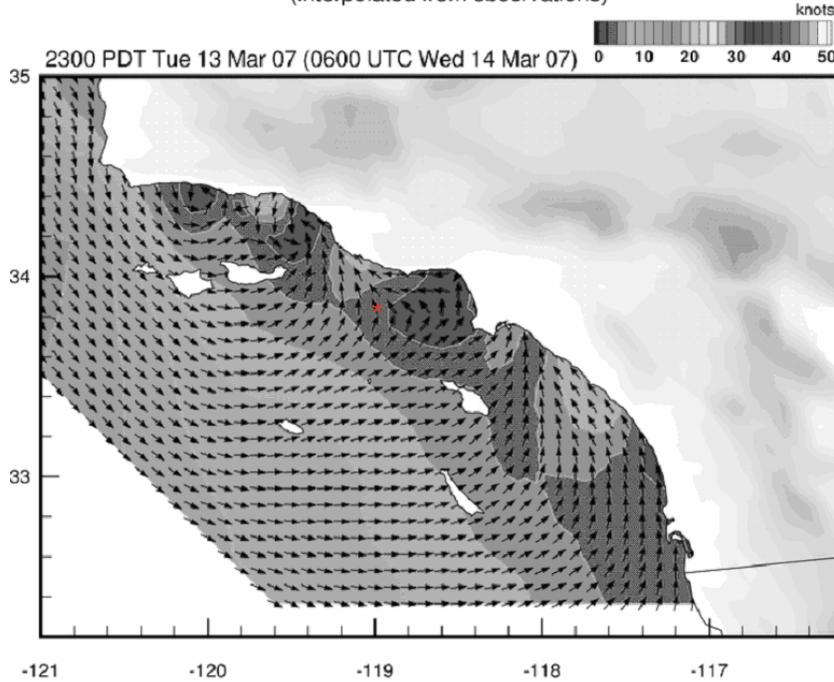
Data Source: National Center for Environmental Prediction, Office of Global Programs, 2006. NCEP/OGP North American Regional Reanalysis.

Exhibit No. AIR- 6 (4 of 4)
Consistency Certification CC-079-06
BHP Cabrillo Port

Naval Air Warfare Center Weapons Division Offshore Wind Analysis

OFFSHORE SURFACE WINDS

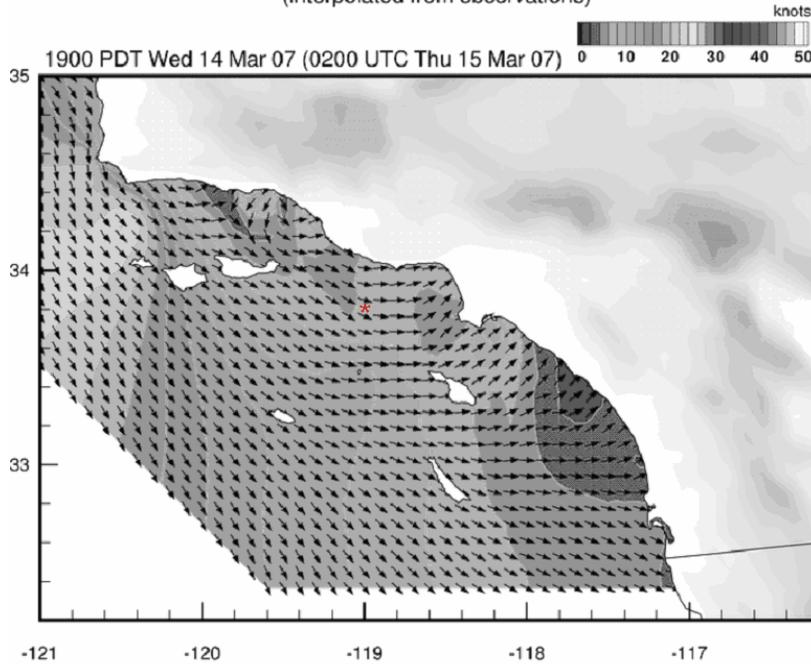
(interpolated from observations)



METOC/Geophysics Branch, Naval Air Systems Command Weapons Division
(<http://www.nawcwpns.navy.mil/~weather/>)

OFFSHORE SURFACE WINDS

(interpolated from observations)



METOC/Geophysics Branch, Naval Air Systems Command Weapons Division
(<http://www.nawcwpns.navy.mil/~weather/>)

Exhibit No. AIR- 7
Consistency Certification CC-079-06
BHP Cabrillo Port

Shipping Lanes and Barge Routes.

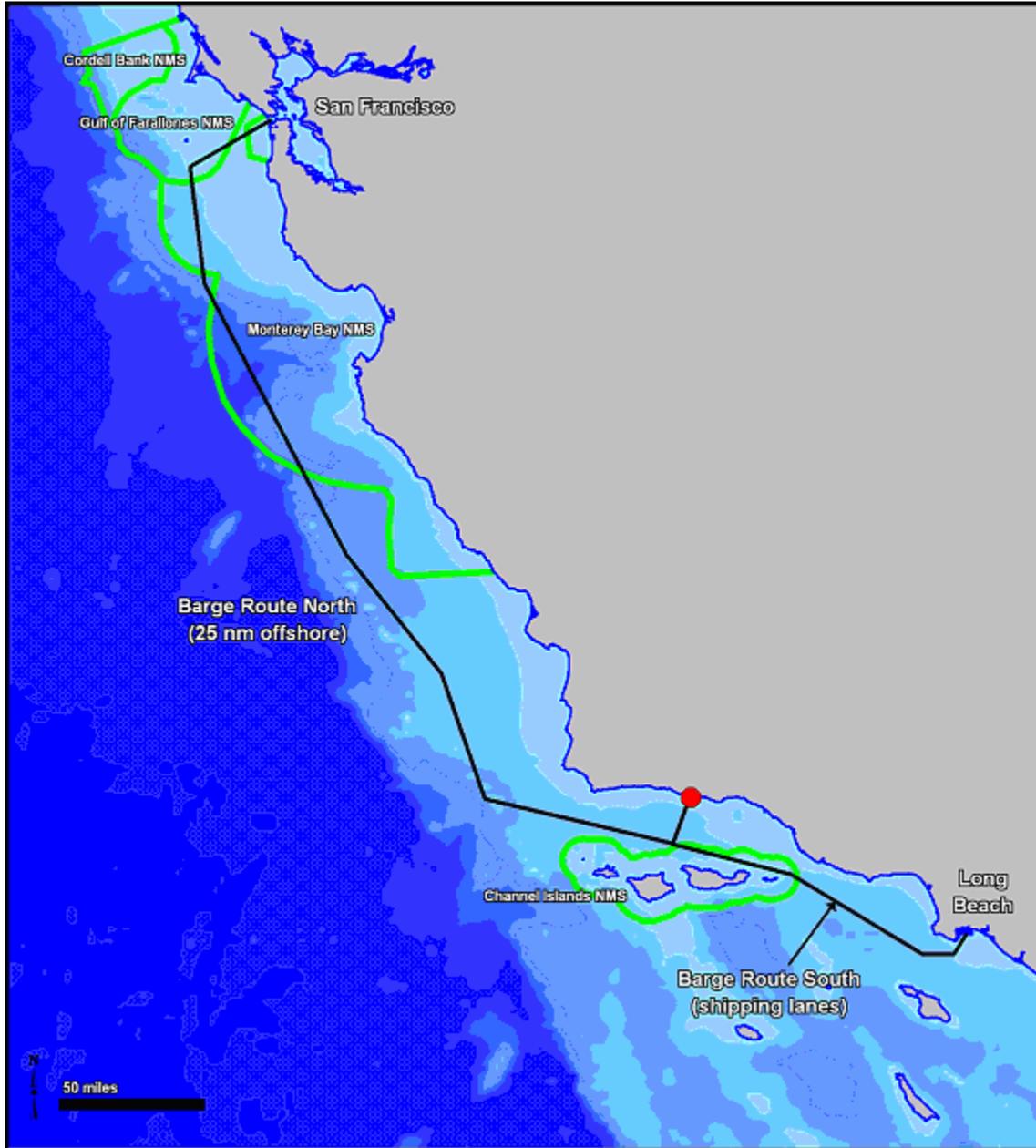


Exhibit No. AIR- 8
Consistency Certification CC-079-06
BHP Cabrillo Port



BHP Billiton LNG International Inc.
1360 Post Oak Boulevard Suite 150
Houston Texas 77056 3020 USA
Tel 713 961 8500 Fax 713 961 8400
www.bhpbilliton.com

March 22, 2007

Mr. John Fielder, President
Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

Dear Mr. Fielder:

Thank you for meeting with me on January 15, 2007 to revisit our prior discussions about Edison's potential willingness to sell Ventura County Emission Reduction Credits (ERCs) to BHP Billiton. I understand as a result of that discussion that SoCal Edison remains unwilling to sell these ERCs, as you believe that you must retain these assets for the long term benefit of the company.

If at any time, SoCal Edison changes this position, I would appreciate if you could let us know. I also want to thank you for your willingness to revisit this discussion as we have worked with the regulators to advance our project.

Regards,

A handwritten signature in black ink, appearing to read "Renee Klimczak".

Renee Klimczak

Exhibit No. AIR- 9
Consistency Certification CC-079-06
BHP Cabrillo Port



BHP Billiton LNG International Inc.
1360 Post Oak Boulevard Suite 150
Houston Texas 77056 3020 USA
Tel 713 961 8500 Fax 713 961 8400
www.bhpbilliton.com

February 22, 2005

Mr. Robert G. Foster
President
Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

Re: Ventura County Emission Reduction Credits

Dear Bob:

Thank you for calling me last month. As you know, Rebecca McDonald and I have asked on several occasions whether Southern California Edison would sell a portion of its Ventura County NOx emission reduction credits. We have appreciated your willingness to continue discussing this matter and to consider all of the information we offered. However, based on your January 31st call my understanding is that you have now reached a final decision that the company will not sell any of its emission reduction credits. We understand that you believe that it may be considered in the best interests of your ratepayers to retain the credits so as to leave open the possibility of using the credits if future circumstances demand. If I misunderstood the finality of this position, please let me know.

Thank you for your consideration of this issue over the past several months.

Very truly yours,

A handwritten signature in cursive script that reads "Stephen Billiot".

Stephen F. Billiot

Exhibit No. AIR- 10
Consistency Certification CC-079-06
BHP Cabrillo Port

From: madchase@aol.com [mailto:madchase@aol.com]
Sent: Tuesday, March 06, 2007 12:58 PM
To: Klimczak, Renee
Subject: re: ERC ROC Credits

Dear Renee,

The Board of Directors for Tenby, Inc., dba Chase Production Company, met yesterday to discuss BHP's offer to option the corporation's banked emission credits, specifically certificate 1021. The Directors unanimously rejected the offer made by BHP Billition.

Our sincere thanks for your interest.

Best Regards,

Julie Chase

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<p>EXHIBIT No. AIR - 11 Consistency Certification CC-079-06 BHP Cabrillo Port</p>
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**Ventura County Emission Reduction Credit (ERC) Survey
(Unrestricted ERCs in Tons/Year)**

Company Name	Contact Person	Phone	Total ROC Credits	Total NO_x Credits	Last Contact	Contact Result
AERA Energy, LLC	Darryl Gunderson	661-665-5279	0.02	0.49	10/04	Refuse to sell
AMGEN	Darin Kuida	805-447-6679		5.28	01/07	Refuse to sell
Chevron Texaco	Rich Hill	661-654-7273	0.44	1.67	03/07	Refuse to Sell
Equilon	Noel Kurai	310-816-2069	6.93		01/07	Refuse to sell
<i>Hunter Resources</i>	<i>K.H. Hunter</i>	<i>661-616-0600</i>	<i>0.09</i>	<i>0.01</i>		<i>No Response</i>
Naval Base	Hasan Jafar	805-989-3210	4.65	0.14	10/04	Refuse to sell
POOI	Clem Alberts	805-899-3144	0.30	1.77	3/07	Refuse to sell
Dos Quadras (DCOR)	Mike Finch	805-535-2000	2.09		02/07	Refuse to sell
Proctor & Gamble	Manuel Ceja	805-485-8871	45.84	22.17	01/07	Refuse to sell
Parker Advanced Filtration	Joe Dispenza	805-604-3470	7.67		01/07	Refuse to sell
<i>Reichold Chemicals</i>	<i>Stewart Fletcher</i>	<i>919-990-7500</i>		<i>0.10</i>		<i>No Response</i>
<i>Royal Coatings</i>	<i>Neville Isaacson</i>	<i>805-520-8075</i>	<i>0.06</i>		<i>10/04</i>	<i>No Response</i>
Seneca Resources	Tim Alburger	661-399-4270	2.57	0.02	03/07	Refuse to sell
Solar World	Sergio Vasquez	805-388-6570	0.21		10/04	Refuse to sell
Southern California Edison	Saeed Sadeghi	626-302-8381	40.77	79.66	01/07	Refuse to sell
<i>St. Johns Medical Center</i>	<i>Paul Davidson</i>	<i>805-988-2863</i>		<i>0.18</i>		<i>No Response</i>
TEG Oil & Gas USA, Inc.	Harry Barnum	805-652-7040	0.30		10/04	Refuse to sell
Tenby Inc.	Julie Chase	805-487-4798	43.27		03/07	Refuse to sell
<i>The Boeing Company</i>	<i>Barbara Ludwig</i>	<i>818-586-8176</i>	<i>0.45</i>	<i>0.01</i>		<i>No Response</i>
Venoco, Inc.	Pat Corcoran	805-745-2264	0.01		10/04	Refuse to sell
Vintage Production	Jim Lovins	805-525-8008	0.44	4.02	03/07	Refuse to sell
<i>Waste Management Energy Solutions</i>	<i>Frank Mazanec</i>	<i>760-420-9600</i>		<i>0.74</i>		<i>No Response</i>

Exhibit No. AIR- 12
Consistency Certification CC-079-06
BHP Cabrillo Port

Ventura County Emission Reduction Opportunities

Category ID	Target Activity	Emission Control Description	Emission Reductions	Investigation Results
Stationary Source Emission Reduction Opportunities				
SS-1	U.S. Navy San Nicolas Island Engines	Apply SCR (urea as emission reduction reagent) on two Cummins Engines: 2205 bhp fired on JP-5 fuel.	35 tons/year* NO _x	BHPB contacted the Navy and Navy personnel stated that they were not interested in emission reduction projects.
SS-2	Agricultural Engine/Oil and Gas Production Drilling Engine	Replace agricultural engines with electric engines or retrofit existing engines.	Minimal	<p>Many agricultural engines and all oil and gas drilling engines have already been electrified due to a previously implemented emission reduction program by SCE. Many of these operations use portable engines that are not eligible for emission reduction programs. In addition, the requirement to utilize Tier 3 and 4 engines when replacing existing diesel engines results in negligible quantities being available for banking as ERCs.</p> <p>BHPB is currently in discussions with the owner of 10 stationary agricultural engines for the conversion of the engines from diesel to natural gas.</p>
SS-3	PXP ROSF Utility Turbine	Apply further controls on utility turbine currently rated at 15 ppm NO _x .	9 tons/year* NO _x	DCOR, the owner of the ROSF facility, stated that it would be willing to discuss an emissions reduction project. BHPB entered into negotiations with DCOR which DCOR terminated on February 13, 2007, stating that the company wanted to retain any ERCs for company use.
SS-4	Vintage Petroleum Turbine	Apply further controls on lease turbines	9 tons/year* NO _x	Vintage declined to participate in any emission reduction program.
SS-5	Venoco Platform Gale Turbines	Apply further controls on platform turbines	Unknown	Actual emission for last two years were far below permitted levels, and Venoco declined to participate due to unknown future operations of the platform.

Exhibit No. AIR- 13 (1 of 3)

Consistency Certification CC-079-06

BHP Cabrillo Port

Category ID	Target Activity	Emission Control Description	Emission Reductions	Investigation Results
SS-6	PXP Platforms Gina and Gilda Support Vessel	Apply further controls on vessel	Minimal	Supply boat, <i>Santa Cruz</i> , already has low-NO _x marine engines rated at 5.48 g/bhp-hr.
SS-7	Proctor & Gamble LM 2500 Turbine	Apply SCR on existing LM 2500 turbine: 80 % NO _x reduction.	22 tons/year* NO _x	BHPB approached Proctor & Gamble about this emission reduction opportunity. Proctor & Gamble subsequently implemented the project themselves with the intent of using the emission reductions for their own potential growth. Proctor & Gamble was contacted again by BHPB after the project was completed and stated it was not interested in selling the ERCs generated.
SS-8	Port of Hueneme (Oxnard Harbor District) Cold Ironing	Provide electrification to docked container ships to power onboard energy needs.	Unknown	Port of Hueneme declined to participate in a cold ironing program primarily due to the lack of vessel traffic consisting of repeat port-of-call (unlike Port of LA and Port of Long Beach).
SS-9	OLS Energy	Apply SCR on existing LM 2500 turbine: 80 % NO _x reduction.	33 tons NO _x *	OLS declined BHPB's request to discuss emission reduction opportunities from retrofitting their existing turbine.
SS-10	Weyerhaeuser	Apply SCR on existing LM 2500 turbine: 80 % NO _x reduction.	25 tons NO _x *	Weyerhaeuser declined to participate in this emission reduction opportunity, opting, instead to use any emission reduction programs for their own potential growth.

Exhibit No. AIR- 13 (2 of 3)
Consistency Certification CC-079-06
BHP Cabrillo Port

Category ID	Target Activity	Emission Control Description	Emission Reductions	Investigation Results
Mobile Source Emission Reduction Opportunities				
MS-1	U.S. Navy Range Support Vessels	Retrofit 20 support boats with Tier 2 low-NO _x engines (70% control efficiency)	22 tons/year* NO _x	The Navy stated that it is not interested in entering into emission reduction projects with private companies.
MS-2	Commercial Crewboat Engine	Retrofit crewboat propulsion engines with low-NO _x engines	15 tons/year NO _x	BHPB negotiated with DCOR, the owner of the vessels, to repower the vessel's propulsion engines with low-NO _x engines. After months of discussion, DCOR terminated negotiations on February 13, 2007, stating that the company wanted to retain any ERCs for company use.
MS-3	Heavy-duty Vehicle Diesel Engine	Replace heavy-duty diesel engine vehicles (e.g., garbage trucks) with CNG-fueled or LNG-fueled Vehicles.	0.6 ton/year per vehicle NO _x	BHPB entered into a Letter of Intent with the largest waste hauler in Ventura County to repower its garbage trucks. This waste hauler (Harrison) subsequently declined to enter into a contract preferring to obtain funds through the CARB Carl Moyer program. BHPB also entered into discussion with the City of Oxnard, but the City Manager terminated negotiations.

* Estimated emission reductions represent actual NO_x reduction from additional NO_x controls plus discount per Rule 26.4.

Exhibit No. AIR- 13 (3 of 3)
Consistency Certification CC-079-06
BHP Cabrillo Port

CHRONOLOGICAL LIST OF LNG ACCIDENTS

Major LNG Incidents								
No.	Incident Date	Ship/Facility Name	Location	Ship Status	Injuries/Fatalities	Ship/Property Damage	LNG Spill/Release	Comment
1	1944	East Ohio Gas LNG Tank	Cleveland, Ohio, US	NA	128 deaths	NA	NA	LNG peakshaving facility. Tank failure and no earthen berm. Vapor cloud formed and filled the surrounding streets and storm sewer system. Natural gas in the vaporizing LNG pool ignited. Stainless steel alloys were scarce because of World War II; tank was made of a low-nickel content (3.5%) alloy steel.
2	1965	LNG import facility	Canvey Island, UK	A transfer operation	1 seriously burned		Yes	Small amount of LNG spilled from a tank during maintenance; spill ignited.
3	1965	Jules Verne	Arzew, Algeria	Loading	No	Yes	Yes	Overfilling. Tank covered and deck fractures.
4	1965	Methane Princess		Disconnecting after discharge	No	Yes	Yes	Valve leakage. Deck fractures.
5	1966	Methane Progress		NA	NA	NA	Yes	Cargo leakage reported.
6	1968	LNG peakshaving facility	Portland, Oregon, US	NA	4	NA	No	Unfinished LNG storage tank. Natural gas from a pipeline being pressure tested inadvertently entered the tank as a result of improper isolation, and then ignited causing an explosion. Neither the LNG tank nor the process facility had been commissioned at the time the accident occurred; thus, the tank had never contained any LNG.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

EXHIBIT No. HAZ – 1 (1 of 9)
Consistency Certification CC-079-06
BHP Cabrillo Port

Major LNG Incidents								
No.	Incident Date	Ship/Facility Name	Location	Ship Status	Injuries/Fatalities	Ship/Property Damage	LNG Spill/Release	Comment
7	1968	Aristotle	Mexico	NA	NA	Yes	No	Ran aground and the bottom was damaged, possibly during LPG service.
8	1969	Polar Alaska		NA	NA	No	No	Sloshing of the LNG heel in No. 1 tank caused part of the supports for the cargo pump electric cable tray to break loose, resulting in several perforations of the primary barrier. LNG leaked into interbarrier space.
9	1970	Arctic Tokyo		NA	No	Yes	No	Sloshing of the LNG heel in No. 1 tank during bad weather caused local deformation of the primary barrier and supporting insulating boxes. LNG leaked into the interbarrier space at one location.
10	1971	LNG ship Esso Brega, La Spezia LNG Import Terminal	Italy	Unloading LNG into the storage tank	NA	NA	Yes	First documented LNG rollover incident. Tank developed a sudden increase in pressure. LNG vapor discharged from the tank safety valves and vents. Tank roof slightly damaged. No ignition.
11	1971	Descartes		NA	NA	No	No	A minor fault in the connection between the primary barrier and tank dome allowed gas into the interbarrier space.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

EXHIBIT No. HAZ – 1 (2 of 9)
Consistency Certification CC-079-06
BHP Cabrillo Port

Major LNG Incidents								
No.	Incident Date	Ship/Facility Name	Location	Ship Status	Injuries/Fatalities	Ship/Property Damage	LNG Spill/Release	Comment
12	1972	Gaz Métropolitain LNG peakshaving facility	Montreal East, Quebec, Canada	NA	NA	NA	Although an LNG facility, LNG was not involved	The accident occurred in the control room due to a backflow of natural gas from the compressor to the nitrogen line. Nitrogen was supplied to the recycle compressor as a seal gas during defrosting operations. The valves on the nitrogen line were not closed after completing the operation. This resulted in the overpressurization of the nitrogen header, and the instruments vented their contents into the control room where operators were allowed to smoke. The explosion occurred while an operator was trying to light a cigarette.
13	1973	Texas Eastern Transmission, LNG Tank	Staten Island, NY, US	NA	40 killed	No	No	Industrial incident unrelated to the presence of LNG (construction incident). During the repairs, vapors associated with the cleaning process apparently ignited the mylar liner. Fire caused temperature in the tank to rise, generating enough pressure to dislodge a 6-inch thick concrete roof, which then fell on the workers in the tank.
14	1973		Canvey Island, UK	NA	No	Yes	Yes	Glass breakage. Small amount of LNG spilled upon a puddle of rainwater, and the resulting flameless vapor explosion, called a rapid phase transition (RPT), caused the loud "booms". No injuries resulted.
15	1974	5,000 m ² Barge Massachusetts		Loading	No	Yes	Yes	Valve leakage after power failure. USCG found that a pressure surge caused the leakage of about 40 gallons of LNG. Deck fractures.
16	1974	Methane Progress		In port	No	Yes	No	Touched bottom at Arzew.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. HAZ – 1 (3 of 9)
Consistency Certification CC-079-06
BHP Cabrillo Port

Major LNG Incidents								
No.	Incident Date	Ship/Facility Name	Location	Ship Status	Injuries/Fatalities	Ship/Property Damage	LNG Spill/Release	Comment
17	1974	Euclides		In port	No	Yes	No	Ran aground and damaged bottom and propeller. In another incident, minor damage occurred due to contact with another vessel.
18	1974	Methane Princess			No	Yes	No	While moored, rammed by freighter Tower Princess resulting in 3-foot gash in hull.
19	1975	Philadelphia Gas Works		NA	No	Yes	NA	Not caused by LNG. An iso-pentane intermediate heat transfer fluid leak caught fire and burned the entire vaporizer area.
20	1977	LNG export facility at Arzew	Algeria	NA	1 worker frozen to death	NA	Yes	Aluminum valve failure on contact with cryogenic temperatures. Wrong aluminum alloy on replacement valve. LNG released, but no vapor ignition (LNG liquefaction facility). The current practice is to provide valves in LNG service that are made with stainless steel.
21	1977	LNG Aquarius		Loading	No	No	Yes	Tank overfilled.
22	1978	LNG export facility	Das Island, United Arab Emirates	NA	No	No	Yes	A bottom pipe connection of an LNG tank failed resulting in a spill inside the tank containment. The liquid flow was stopped by closing the internal valve, and a large vapor cloud resulted and dissipated without ignition.
23	1978	Khannur	Strait of Singapore	NA	No	Yes	No	Collision with cargo ship Hong Hwa.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. HAZ – 1 (4 of 9)
Consistency Certification CC-079-06
BHP Cabrillo Port

Major LNG Incidents								
No.	Incident Date	Ship/Facility Name	Location	Ship Status	Injuries/Fatalities	Ship/Property Damage	LNG Spill/Release	Comment
24	1979	Columbia Gas LNG import terminal	Cove Point, Maryland, US	NA	1 killed, 1 seriously injured	Yes	Yes	An explosion occurred within an electrical substation. LNG leaked through LNG pump electrical penetration seal, vaporized, passed through 200 feet of underground electrical conduit, and entered the substation. Since natural gas was never expected in this building, there were no gas detectors installed in the building. The normal arcing contacts of a circuit breaker ignited the natural gas-air mixture, resulting in an explosion. Building codes pertaining to the equipment and systems downstream of the pump seal were subsequently changed.
25	1979	Mostefa Ben-Boulaïd Ship	Cove Point, Maryland, US	Unloading	No	Yes	Yes	Valve leakage. Deck fractures.
26	1979	Pollenger Ship	Distrigas terminal, Everett, Massachusetts	Unloading	No	Yes	Yes	Valve leakage. Tank cover plate fractures.
27	1979	El Paso Paul Kayser Ship	Strait of Gibraltar	At sea	No	Yes	No	Stranded. Severe damage to bottom, ballast tanks, motors water damaged, bottom of containment system set up.
28	1980	LNG Libra		At sea	No	Yes	No	Shaft moved against rudder. Tail shaft fractured.
29	1980	LNG Taurus	Ran aground near Tobata, Japan	In port	No	Yes	No	Stranded. Ballast tanks all flooded and listing. Extensive bottom damage.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. HAZ – 1 (5 of 9)
Consistency Certification CC-079-06
BHP Cabrillo Port

Major LNG Incidents								
No.	Incident Date	Ship/Facility Name	Location	Ship Status	Injuries/Fatalities	Ship/Property Damage	LNG Spill/Release	Comment
30	Early 1980s	El Paso Consolidated		NA	NA	Yes	Yes	Minor release of LNG from a flange. Deck plating fractured due to low temperature embrittlement.
31	Early 1980s	Larbi Ben M'Hidi		NA	NA	No	No	Vapor released during transfer arm disconnection.
32	1983	Norman Lady	Sodegaura, Japan	Prior to unloading	Not reported	Not reported	Yes	During cooldown of the cargo transfer arms, the ship moved astern under its own power. All cargo transfer arms sheared and LNG spilled. No ignition.
33	1983	LNG export facility	Bontang, Indonesia	NA	Yes, 3 workers	Yes	No	Liquefaction column (large vertical, spiral-wound heat exchanger) ruptured due to overpressurization caused by a blind flange left in a flare line during startup. Debris and coil sections were projected.
34	1984	Melrose		At sea	No	Yes	No	Fire in engine room. No structural damage sustained – limited to engine room.
35	1985	Gradinia		In port	No	Not reported	No	Steering gear failure. No details of damage reported.
36	1985	Isabella		Unloading	No	Yes	Yes	Cargo valve failure. Cargo overflow. Deck fractures.
37	1985	Annabella		NA	NA	NA	Yes	Reported as "pressurized cargo tank." Presumably, LNG released from the tank or piping.
38	1985	Ramdane Abane		NA	NA	Yes	No	Collision while loaded. Port bow affected.
39	1985	LNG peakshaving facility	Pinson, Alabama US	Unloading	Yes	Yes	Yes	The welds on a "patch plate" on a aluminum vessel failed as the vessel was receiving LNG which was being drained from the liquefaction cold box. The plate was propelled into a building that contained the control room, boiler room, and offices.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. HAZ – 1 (6 of 9)
Consistency Certification CC-079-06
BHP Cabrillo Port

Major LNG Incidents								
No.	Incident Date	Ship/Facility Name	Location	Ship Status	Injuries/Fatalities	Ship/Property Damage	LNG Spill/Release	Comment
								Some of the windows were blown inward and natural gas escaping from the vessel entered the building and ignited, injuring six employees.
40	1989	Tellier		Loading	No	Yes	Yes	Broke moorings. Hull and deck failures.
41	1989	LNG peakshaving facility	Thurley, United Kingdom	Unloading	Yes	Yes	Yes	While cooling down vaporizers in preparation for sending out natural gas, low-point drain valves were opened. One of these valves was not closed when pumps were started and LNG entered the vaporizers. LNG was released into the atmosphere and the resulting vapor cloud ignited, causing a flash fire that burned two operators.
42	1990	Bachir Chihani		At sea	No	Yes	No	Sustained structural cracks allegedly caused by stressing and fatigue in inner hull.
43	1992	LNG peakshaving facility	Baltimore, MD, US	NA	No	Yes	Yes	A relief valve on LNG piping failed to open and released LNG into the LNG tank containment for over 10 hours, resulting in loss of over 25,000 gallons into the LNG tank containment. The LNG also caused embrittlement fractures on the outer shell of the LNG tank. The tank was taken out of service and repaired.
44	1993	Indonesian liquefaction facility	Indonesia	NA	No	NA	NA	LNG leak from open run-down line during a pipe modification project. LNG entered an underground concrete storm sewer system and underwent a rapid vapor expansion that overpressured and ruptured the sewer pipes. Storm sewer system substantially

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. HAZ – 1 (7 of 9)
Consistency Certification CC-079-06
BHP Cabrillo Port

Major LNG Incidents								
No.	Incident Date	Ship/Facility Name	Location	Ship Status	Injuries/Fatalities	Ship/Property Damage	LNG Spill/Release	Comment
								damaged.
45	1997	Northwest Swift	400 km from Japan	NA	NA	Yes	No	Collided with a fishing vessel and sustained damage to hull, but no ingress of water.
46	1997	LNG Capricorn	Japan	NA	NA	Yes	No	Struck a mooring dolphin and sustained damage to hull but no ingress of water.
47	1999	Methane Polar		NA	No	Yes	No	Engine failure during approach to Atlantic LNG jetty. Struck and damaged Petrotrin pier.
48	2000	LNG import terminal	Savannah, Georgia, US	NA	No	Yes	No	In September 2000, a 580-foot ship, the Sun Sapphire, lost control in the Savannah River and crashed into the LNG unloading pier at Elba Island. The Elba Island facility was undergoing reactivation but had no LNG in the plant. The Sun Sapphire suffered a 40-foot gash in her hull. The point of impact at the terminal was the LNG unloading platform. The LNG facility experienced significant damage, including the need to replace five 16" unloading arms.
49	2002	LNG ship Norman Lady	East of the Strait of Gibraltar	At sea	No	Yes	No	Collision with a U.S. Navy nuclear-powered attack submarine, the U.S.S Oklahoma City. In ballast condition. Ship suffered a leakage of seawater into the double bottom dry tank area.
50	2004	Trinidad,		NA	No	Yes	NA	Workers were evacuated after a gas

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

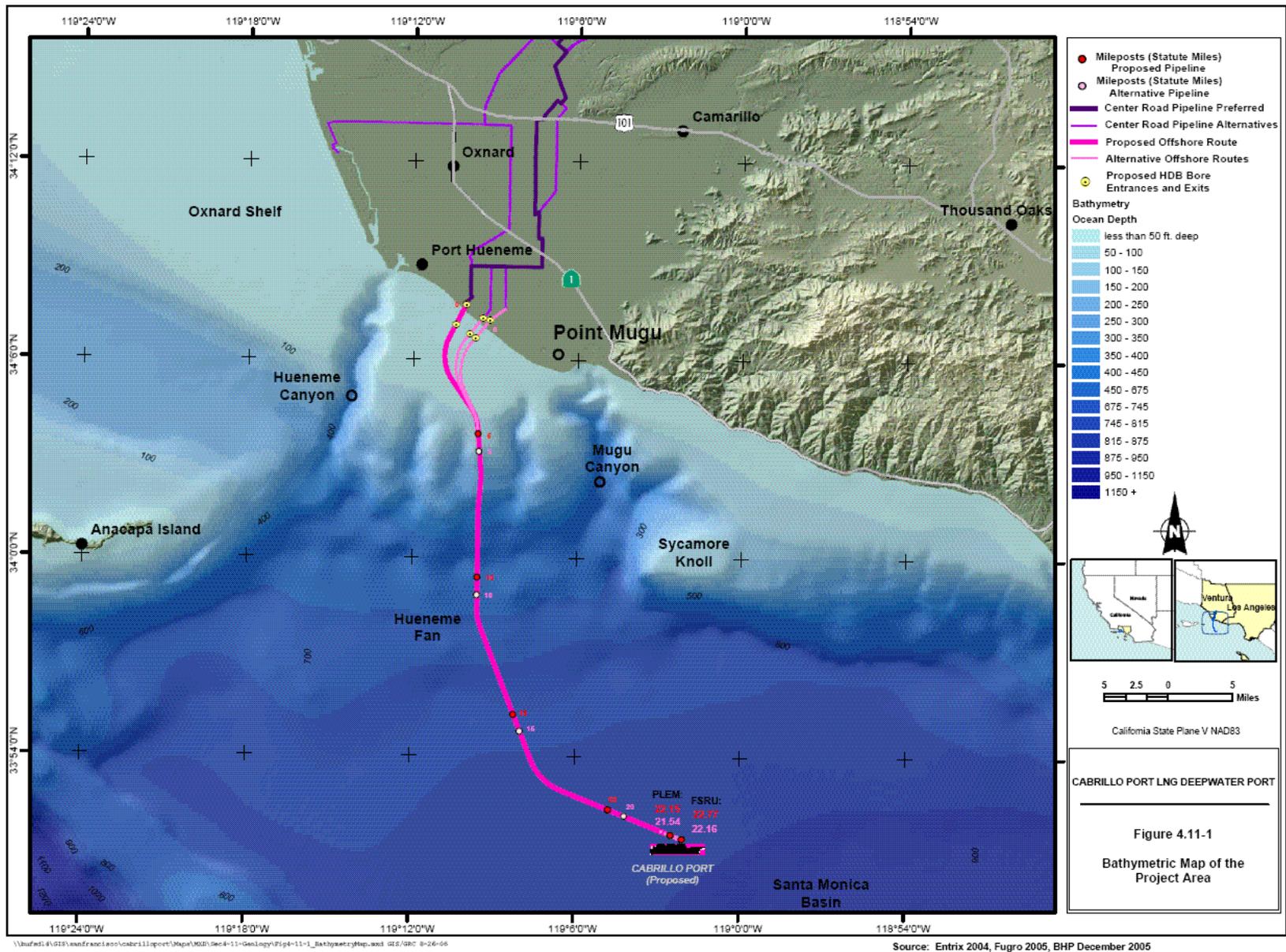
EXHIBIT No. HAZ – 1 (8 of 9)
Consistency Certification CC-079-06
BHP Cabrillo Port

Major LNG Incidents								
No.	Incident Date	Ship/Facility Name	Location	Ship Status	Injuries/Fatalities	Ship/Property Damage	LNG Spill/Release	Comment
		Tobago						turbine at Atlantic LNG's Train 3 facility exploded.
51	2004	Skikda I	Algeria	NA	27 killed 72 injured (The casualties are mainly due to the blast, few casualties due to fire)	NA	NA	On January 19, 2004: No wind, semi-confined area (cold boxes, boiler, control room on 3 sides). The fire completely destroyed the train 40, 30, and 20, although it did not damage the loading facilities or three large LNG storage tanks also located at the terminal. Explosion due to a confined gas leak and ensuing fireball. FERC and DOE joint report indicated that there were local ignition sources, a lack of 'typical' automatic equipment shutdown devices, and a lack of hazard detection devices.
52	2006	Train 2 facility	Port Fortin, Trinidad, Caracas	NA	1 injured	No	Yes	Atlantic LNG reported that an accident occurred at its Train 2 facility at Point Fortin, Trinidad when a temporary eight-inch isolation plug was blown by built-up pressure. The Train 2 facility had been shut down due to the detection of a gas release from a two-inch pipeline. The release of natural gas was brought under control, and personnel returned. While the company was carrying out repairs the plug blew injuring one worker. It had been filled with inert gas to facilitate repairs.

Sources: University of Houston, "LNG Safety and Security," October 2003. <http://www.beg.utexas.edu/energyecon/lng/>. Cited with permission; Sonatrach, "The Incident at the Skikda Plant: Description and Preliminary Conclusions", March 2004; USCG, The Coast Guard Journal of Safety at Sea Proceedings of the Marine Safety & Security Council, Liquefied Natural Gas, Ensuring its safe and secure marine transportation, "Accidents, Incidents, Mistakes, and the Lessons Learned from Them," Fall 2005; CH IV International, Safety History of International LNG Operations, Technical Document TD-02109February 2006. Oil and Gas International, "Atlantic LNG Trinidad Train 2 accident injures employee," November 2006, <http://www.oilandgasinternational.com/default.aspx>.

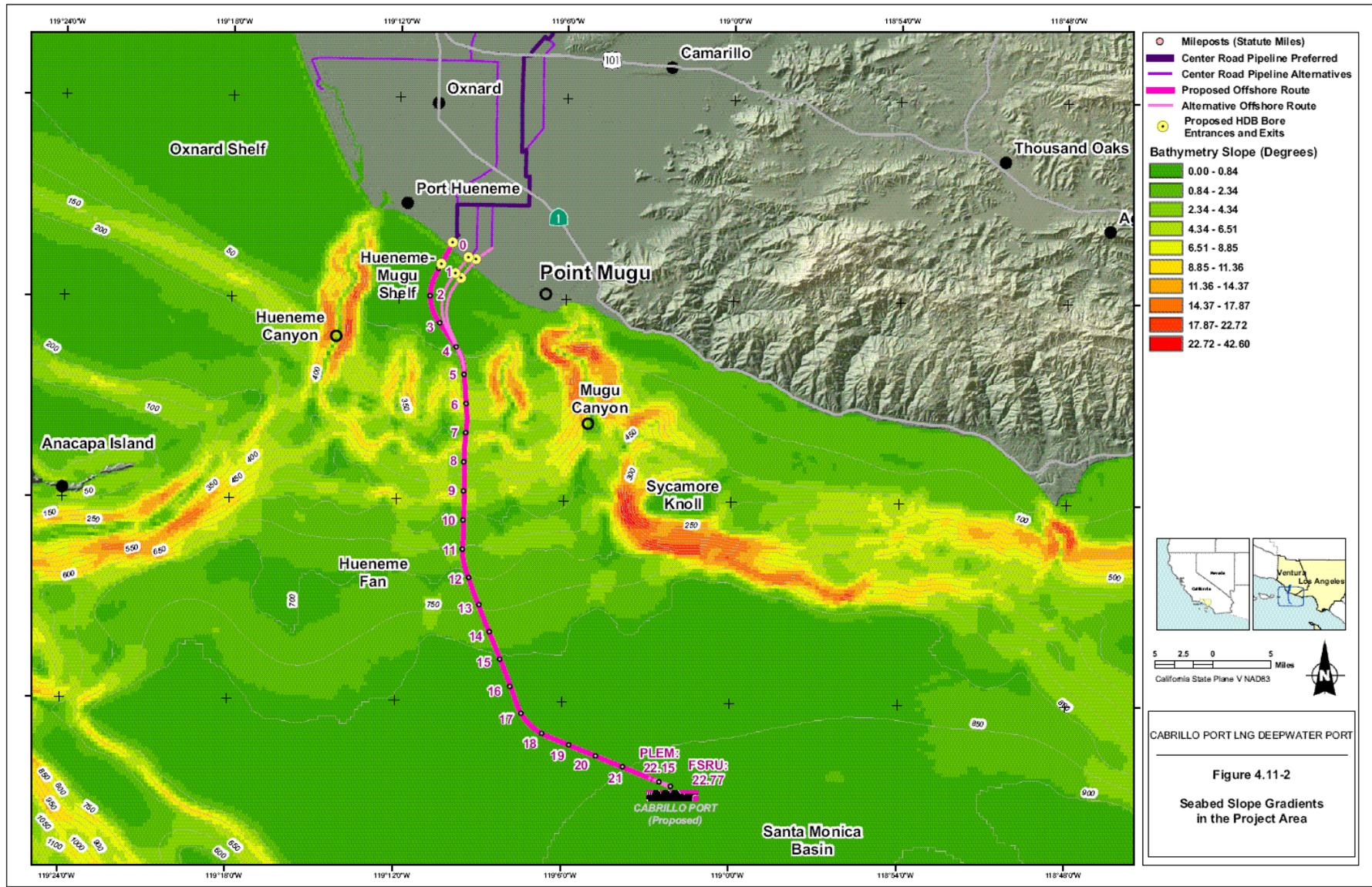
Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. HAZ – 1 (9 of 9)
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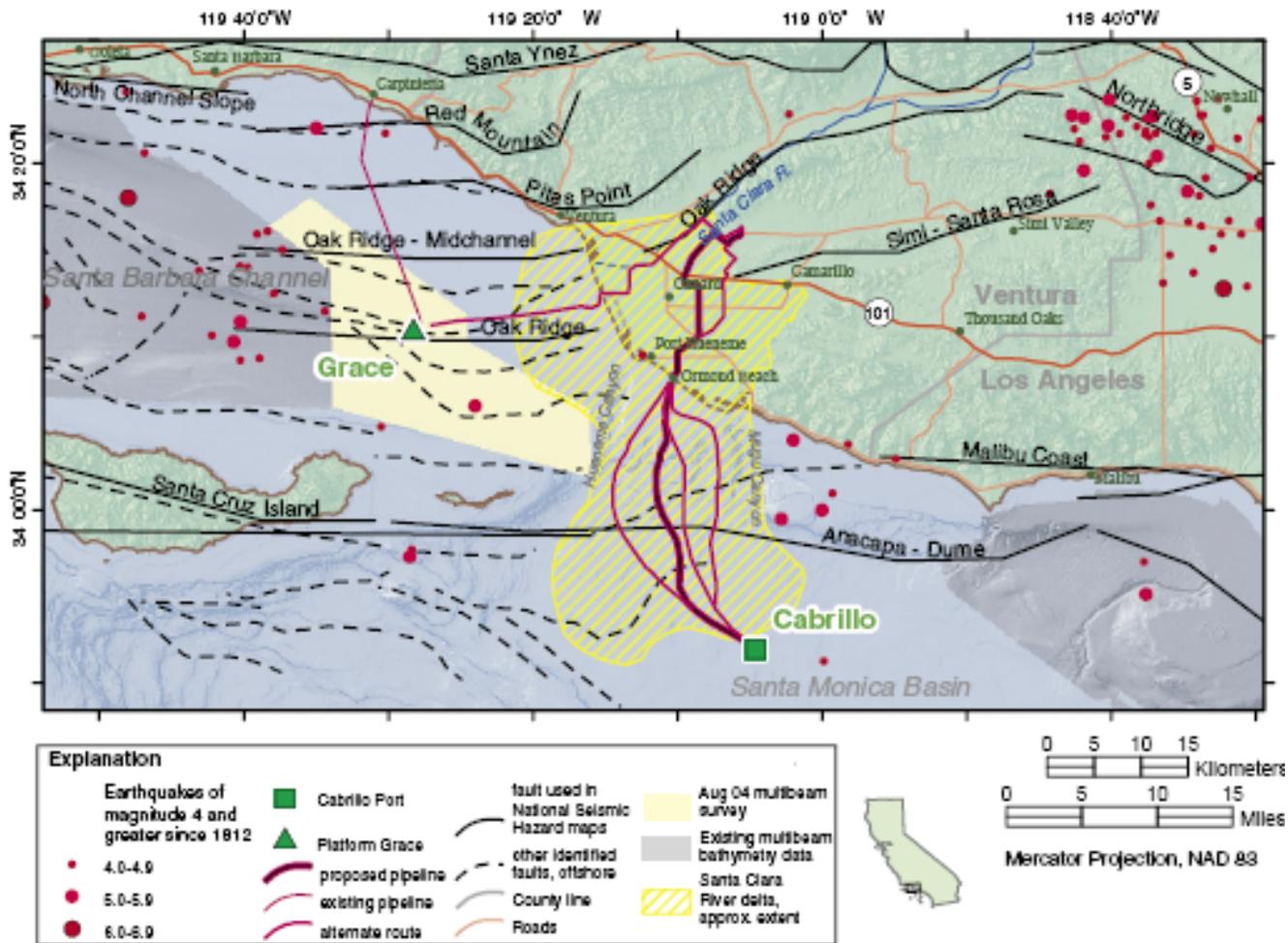
Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement /Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007. Figure 4.11-1.

EXHIBIT No. GEO – 1
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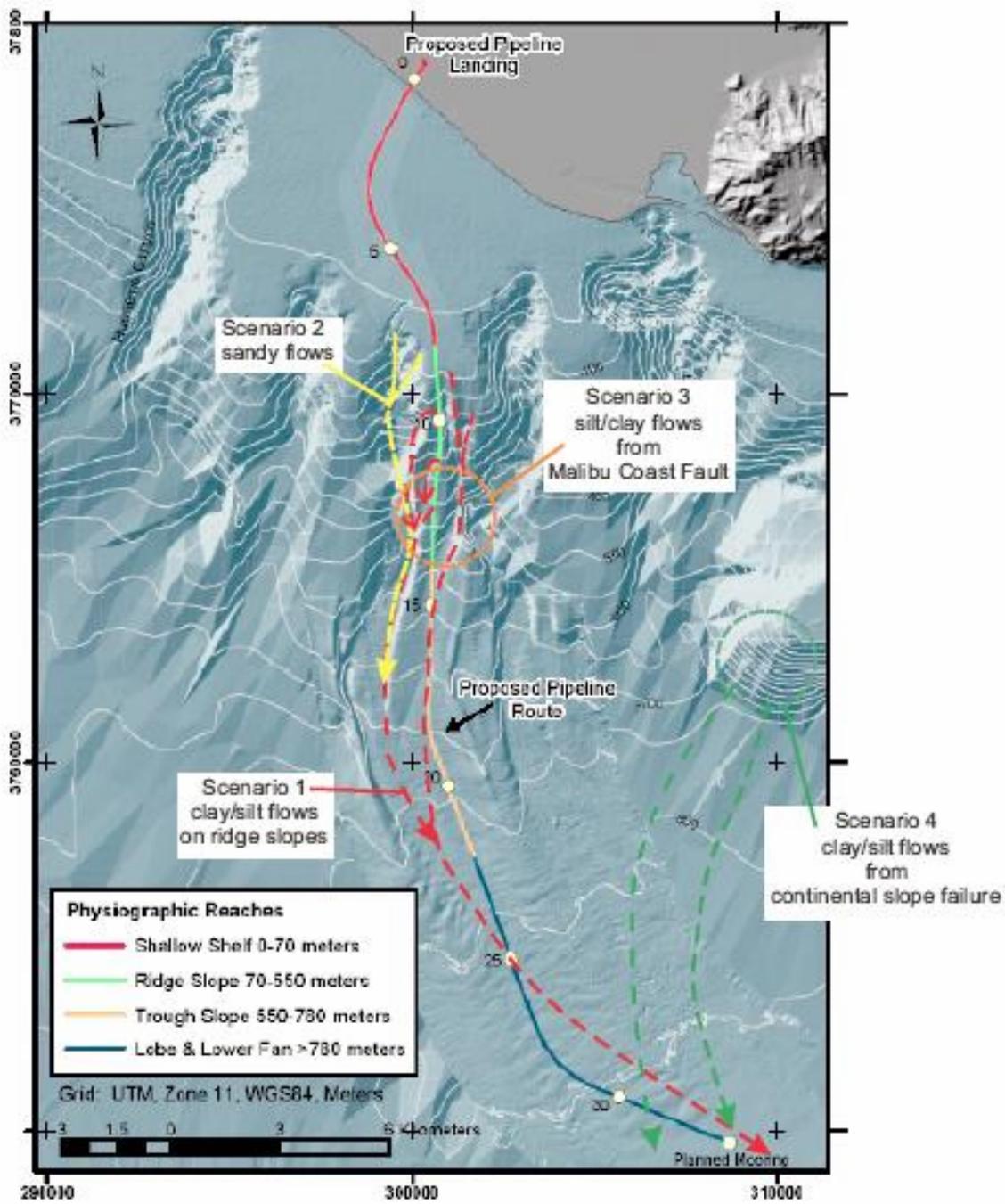
Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement /Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007. Figure 4.11-2.

EXHIBIT No. GEO - 2
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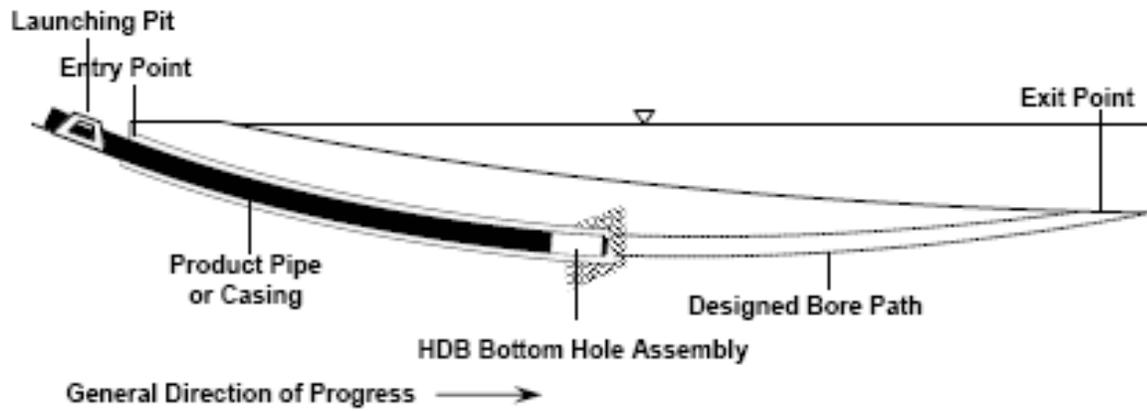
Source: U.S. Geological Survey. 2004. "Comments on potential geologic and seismic hazards affecting coastal Ventura county, California." U.S.G.S. Open File Report 2004-1286.

EXHIBIT No. GEO – 3
Consistency Certification CC-079-06
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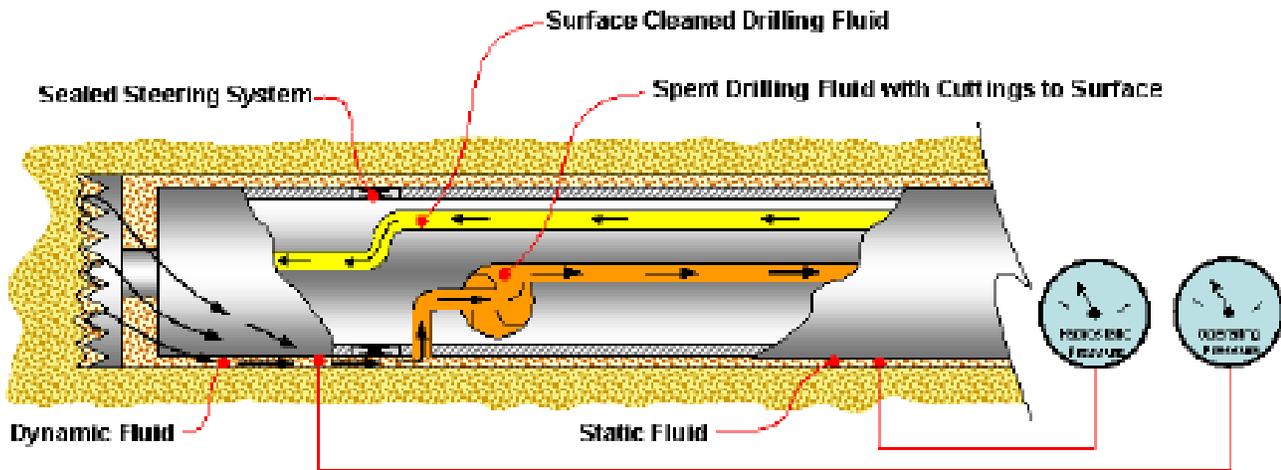
Source: INTEC Engineering. 2004a. "Pipeline spanning analysis." October 21, 2004.

EXHIBIT No. GEO – 4
Consistency Certification CC-079-06
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Source: Cherrington. 2005. "Preliminary construction procedure and design for horizontally directionally bored pipeline landfall." July 8, 2005.

EXHIBIT No. GEO – 5
Consistency Certification CC-079-06
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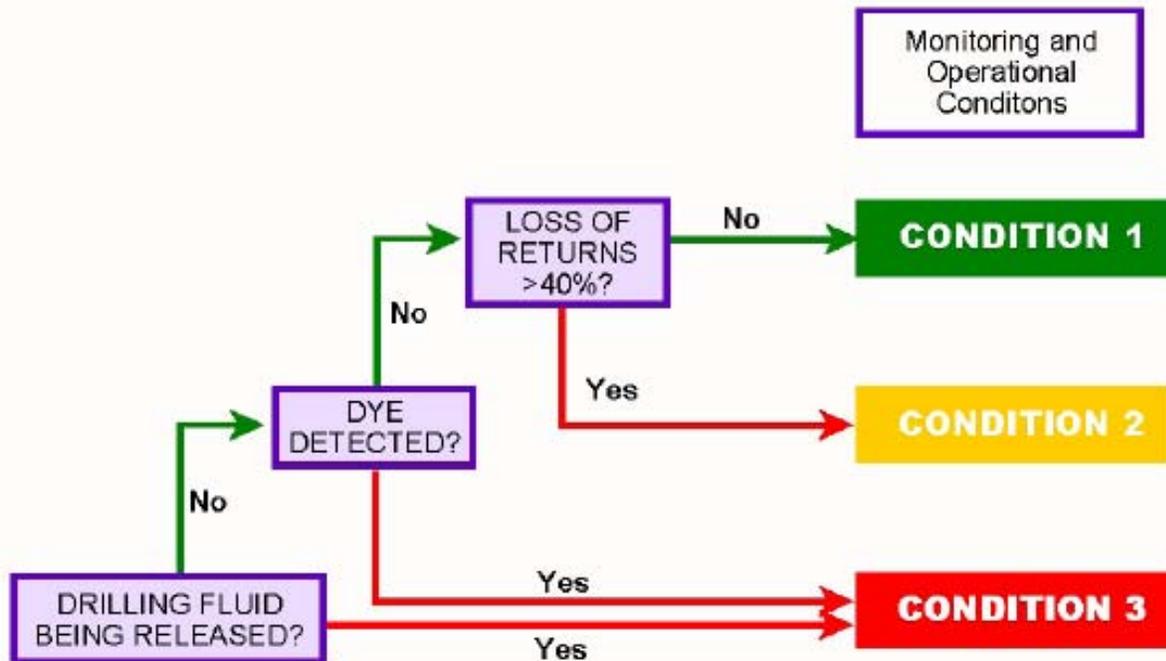


Matching Operating Pressure with the Hydrostatic Pressure is achieved by trimming the surface pump with the internal pump

Source: Cherrington. 2005. "Preliminary construction procedure and design for horizontally directionally bored pipeline landfall." July 8, 2005.

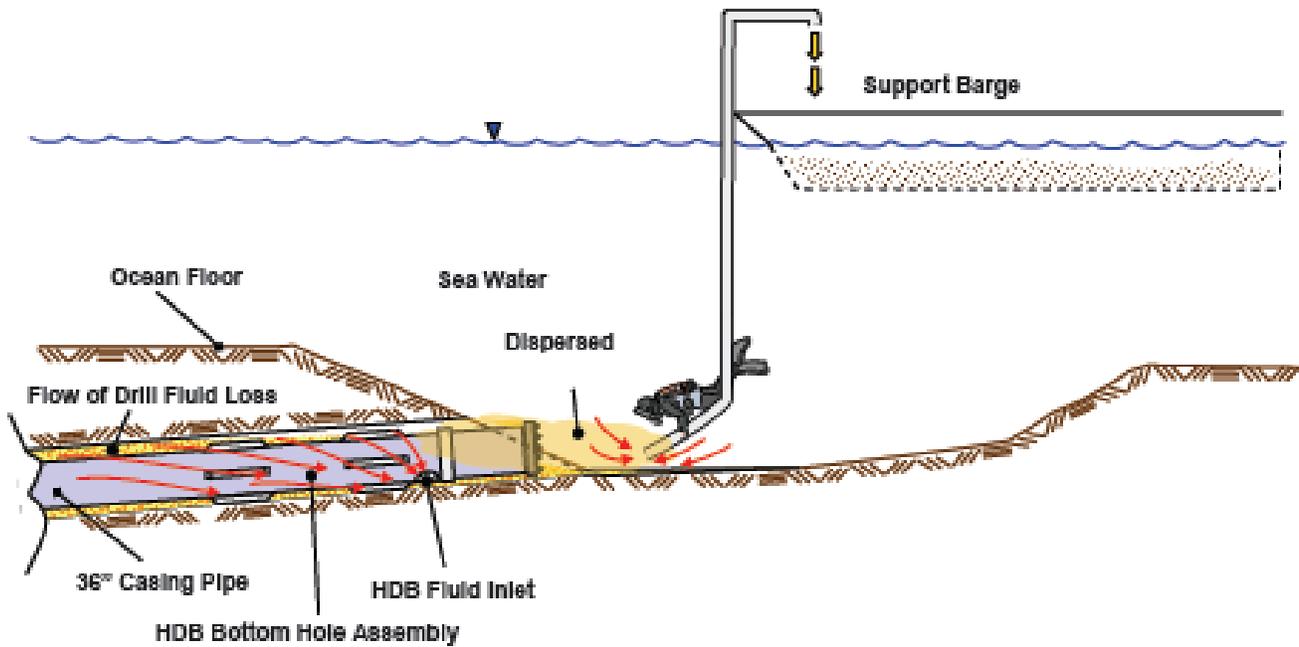
EXHIBIT No. GEO – 6
Consistency Certification CC-079-06
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HDD Drilling Fluid Monitoring Flow Chart



Source: Brungardt Honomichl and Company, P.A. 2005. "Drilling fluid release monitoring plan horizontal directional boring." July 8, 2005.

EXHIBIT No. GEO – 7
Consistency Certification CC-079-06
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Source: Cherrington. 2005. "Preliminary construction procedure and design for horizontally directionally bored pipeline landfall." July 8, 2005.

EXHIBIT No. GEO – 8
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The 1996 report on the Committee also describes the formation and functions of the Joint Oil/Fisheries Liaison Office (JOFLO). It is funded by the California Coastal Operator's Group, an oil industry organization comprised of many companies having interests in oil and gas operations off the Central California coast. JOFLO:

- Acts as a clearinghouse for information, including gathering information about fisheries in the Santa Barbara Channel and Santa Maria basin;
- Provides facilitation of inter-industry communication and proper filing of claims;
- Is intended to reduce conflicts between geophysical surveys and fishing operations; and
- Identifies the procedures and responsibilities to be used during three phases (identification, mitigation, and implementation), providing guidelines for fishermen's claims for lost or damaged gear in the vessel traffic corridors.

Dispute resolution and problem solving processes used by the Joint Committee include four basic principles:

- Neutral roles – the Marine Advisor, Liaison Officer, and Mediator serve as neutral parties to interface with participants in the Joint Committee process;
- Representation of Stakeholder Interests – selected representatives must be active agents, committed to the goals of the programs of the Joint Committee;
- Importance of Process Ground Rules and Written Agreements – provide a structure that can guide the talks; and
- Involvement of Stakeholder groups – stakeholder groups are invited to sit in on Joint Committee sessions when broader interests are being discussed.

The resolution of a claim generally proceeds as follows:

- The responsible party will verify the amount of gear lost/damaged, the replacement/repair cost, and if appropriate, lost catch;
- A good faith effort will be made by responsible party to resolve the claim within 15 days of receipt of the information supporting the claim; and
- If a claim has not reached conceptual agreement within 15 days, either party may submit the matter to arbitration. Arbitration is governed by Title 9 of the California Code of Civil Procedure.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007.

EXHIBIT No. COM-1
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EXHIBIT VIS – 1



(Fig.4.4-1 EIS/EIR)



(Figure 2.2-3 EIS/EIR)

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. VIS -1
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Simulation of view of FSRU from near Leo Carillo State Beach



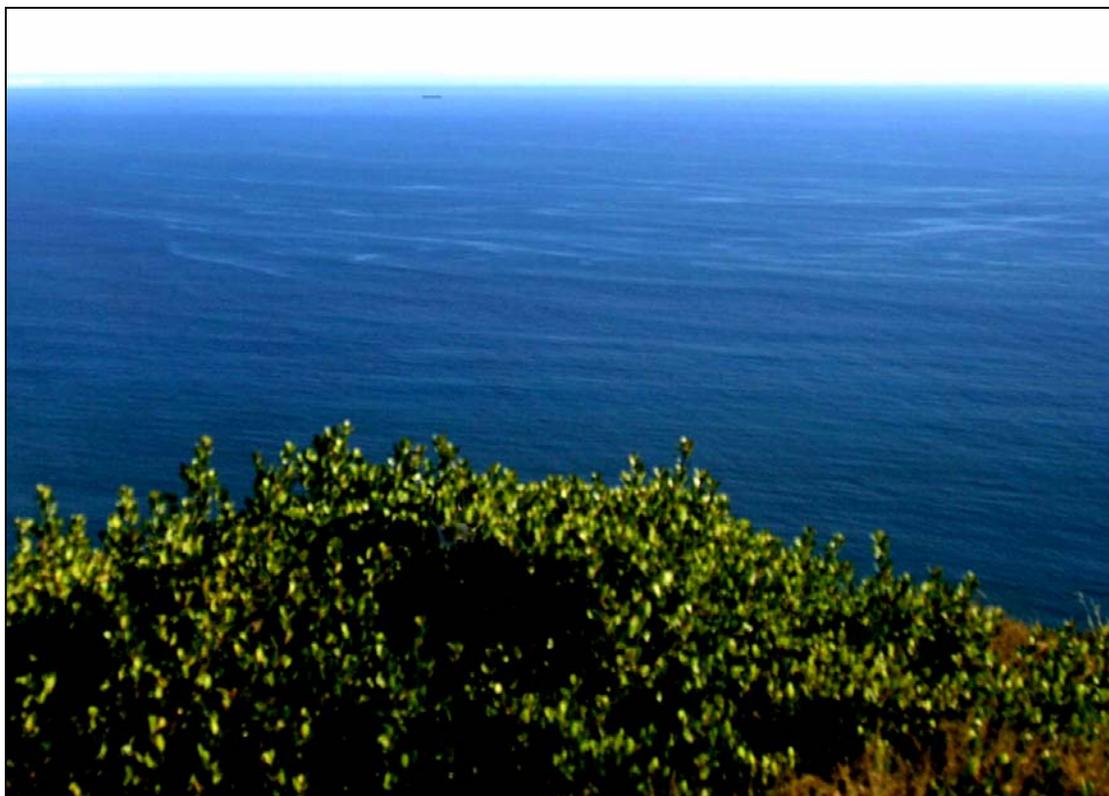
Simulation of view of FSRU from Sandstone Peak with simulated haze added.

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. VIS -2 (1 of 2)
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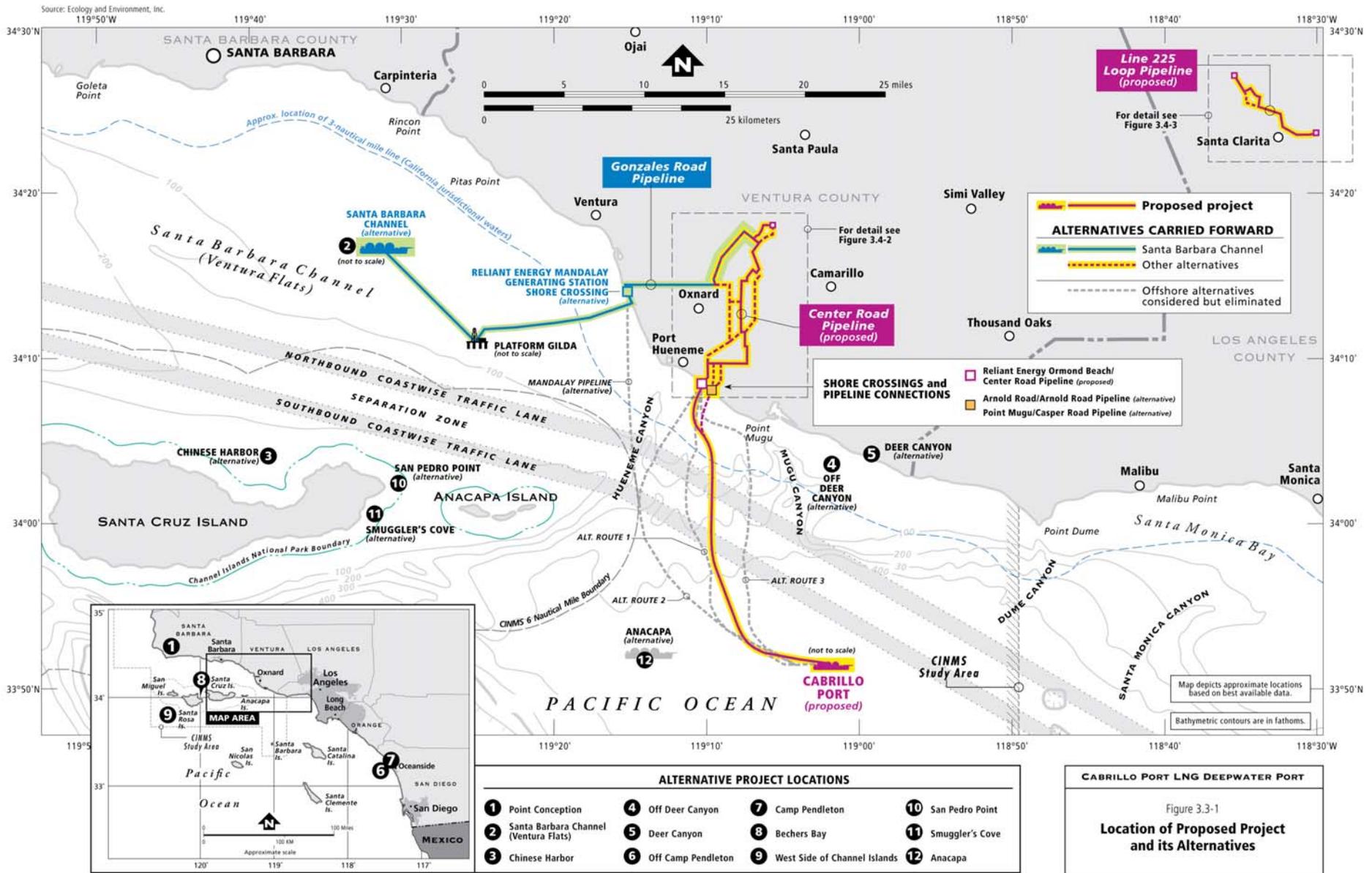
Simulated view of FSRU from Triunfo Lookout



Simulated view of FSRU from Point Mugu

Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

EXHIBIT No. VIS -2 (2 of 2)
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Source: California State Lands Commission, United States Coast Guard, Maritime Administration. 2007. Final Environmental Impact Statement/Environmental Impact Report for the Cabrillo Port Liquefied Natural Gas Deepwater Port. Ventura and Los Angeles Counties. March 2007

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PUBLIC UTILITIES COMMISSION

STATE OF CALIFORNIA
505 VAN NESS AVENUE
SAN FRANCISCO, CALIFORNIA 94102

MICHAEL R. PEEVEY
PRESIDENT

TEL: (415) 703-3703
FAX: (415) 703-5091

December 12, 2006

Honorable Meg Caldwell
California Coastal Commission
45 Fremont Street, Ste. 2000
San Francisco, CA 94105

Dear Chair Caldwell:

The purpose of this letter is to clarify the need for Liquefied Natural Gas (LNG) terminals as an additional supply source of natural gas for California. A number of individuals or organizations have been stating in the press that there is no such need for LNG supplies, but this has been based upon an incomplete analysis of the natural gas market (both producing and consuming markets) in North America and how it affects the California market. This is but one of many issues looming in the background as the California Coastal Commission (CCC) examines on a project-by-project basis the siting of LNG import terminals along the California coast. Therefore, this letter will address the big picture on the need for LNG, as well as safety issues, which are areas within the expertise of the California Public Utilities Commission (CPUC). We recognize, however, that there are many other additional and unique issues involved with the various LNG proposed projects, which the CCC will have to address in the individual proceedings concerning these proposed projects.

The CPUC's basic constitutional and statutory duty in its regulation of the investor-owned energy utilities in California is to ensure that they provide reliable electric and natural gas service at just and reasonable rates in a safe and environmentally sustainable way. In this regard, the CPUC has a significant amount of expertise from our direct regulation of the California utilities, our representation of California before the Federal Energy Regulatory Commission (FERC) and our partnership with the United States Department of Transportation (DOT) under the Natural Gas Pipeline Safety Act, 49 U.S.C. §§ 60101, *et seq.*

The CPUC coordinates on energy policies with the California Energy Commission (CEC), which also has considerable expertise on energy issues. The CPUC and CEC jointly conducted a two-day workshop in December, 2003, largely on the issue of whether or not LNG supplies were needed for California, and there was ample evidence that they would be needed. The State's Integrated Energy Policy Report (IERP) recognizes the need for additional supply sources of natural gas, such as from LNG terminals. The State's Energy Action Plan (EAP), which was

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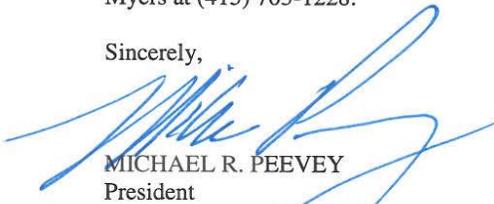
Chair Caldwell
December 12, 2006
Page 2

adopted by the CPUC and CEC, also recognizes the need for additional natural gas supplies from LNG terminals on the West Coast.

Although the CPUC recognizes the need for LNG terminals to provide additional natural gas supplies to California, the CPUC believes they must be sited in remote locations away from densely populated areas. Many analysts agree that in addition to the Sempra LNG terminal (which is in a remote area in Baja California, Mexico and already more than 50% constructed), the market will support an LNG import terminal along the California coast. There are at least three LNG import terminals, which have been proposed to be located in federal waters at least 10 miles offshore along the Southern California coast. Therefore, there are much safer alternatives to siting LNG terminals than siting them onshore in densely populated areas in California. Given that there is a choice, it only makes sense that we not expose the people in densely populated areas to any of the safety risks from an onshore LNG terminal.

Accompanying this letter is a memorandum from the CPUC staff providing a more detailed analysis of these issues. If you or your staff have any questions, please feel free to call the following contacts in the CPUC's staff: Harvey Y. Morris at (415) 703-1086 or Richard A. Myers at (415) 703-1228.

Sincerely,



MICHAEL R. PEEVEY
President

Cc: CPUC Commissioner Brown
CPUC Commissioner Grueneich
CPUC Commissioner Bohn
CPUC Commissioner Chong
CEC Chair Pfannensteil
Peter M. Douglas, CCC Executive Director
Alison J. Dettmer, CCC Manager

EXHIBIT No. OVR-2 (2 of 2)
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MEMORANDUM

Date : December 12, 2006

To : President Peevey

**From : Richard A. Myers, Energy Division
Harvey Y. Morris, Legal Division**

Subject : California's Need for LNG Supplies

As you requested, this memorandum provides a summary of why California needs liquefied natural gas (LNG) supplies in its future and why LNG terminals should not be sited onshore in or near densely populated areas.

I. LNG Supplies Should Be a Component of California's Natural Gas Portfolio

On average, California requires a little more than 6000 million cubic feet per day (MMcfd) of natural gas and obtains about 85-90% of its natural gas supplies from outside of California. These out-of-state supplies are delivered by interstate pipelines from natural gas producing basins in the southwestern and Rocky Mountain regions of the U.S. and in western Canada. Only the remaining 10-15% is obtained from California production, which production has been overall declining.

It is prudent for California to have access to a diverse portfolio of natural gas supplies to assure adequacy of supplies to the State and to have ample access to the lowest cost supplies of natural gas as market conditions change. The California Public Utilities Commission (CPUC) has become especially concerned in recent years about the adequacy of natural gas supplies to the State, and the increasing price of natural gas. Our concerns are based on several developments that we've observed in the natural gas market over the past few years (particularly since about 2002), and that may well continue in the future. These developments include:

<p>EXHIBIT No. OVR-3 (1 of 9) Consistency Certification CC-079-06 BHP Cabrillo Port</p>
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- natural gas prices that are about three to four times the prices in 2002,
- decreasing production rates from natural gas wells in North America,
- decreasing imports of natural gas from Canada, the United States' main source of natural gas imports, and a big part of California's portfolio,
- future increases in national gas demand, partly due to increasing natural gas demand for electric generation,
- the realistic possibility that a portion of Rocky Mountain production, another important part of California's supplies, will be diverted to Midwestern and eastern markets, and
- potential changes in the southwest and northwest interstate pipeline markets.

Increases in the price of natural gas, not just in California but across the U.S., have been occurring due to a variety of factors. Some of the primary reasons include the increased tension between national supply and demand, the price of oil, and the increased cost of drilling. Prices have more than tripled between 2002 and now, and the prices have also become much more volatile. It is important to keep in mind that, because the natural gas market is strongly integrated and California heavily depends on out-of-state supplies, trends in market prices that California consumers pay are heavily determined by overall North American market developments, including increased demand in the other states, Canada and Mexico. In fact, in the future, natural gas prices are expected to be increasingly influenced by international developments.

The CPUC believes that LNG should be a component of California's natural gas supply portfolio. As part of the State's Energy Action Plan (EAP), the CPUC and the California Energy Commission (CEC) are placing considerable emphasis on trying to meet a substantial portion of the State's energy needs through increasing reliance on energy efficiency measures and renewable energy for electric generation. However, even with strong demand reduction efforts and our goal of 20% renewables for electric generation by 2010, demand for natural gas in California is expected to roughly remain the same, rather than decrease, over the next 10 years. This is because, a substantial portion of the other 80% of electric generation (not met by renewable energy sources) will need natural gas as its fuel source, and natural gas will still be needed for the growing number of residential and business customers of the natural gas utilities. Therefore, the State's EAP also endorses obtaining new natural gas supply sources, such as LNG. Accordingly, one focus of the CPUC's current natural gas regulatory efforts has been to enable access to California's natural gas utility systems by new supply sources, including LNG.

A. Decreasing production rates from natural gas wells in North America

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In recent years, there has been a noticeable decline in the rates of production of natural gas in both the U.S. and Canada. That is, analysts have found that once a typical new natural gas well begins producing, its rate of production is declining more rapidly than in previous years. This is due to the fact that the most prolific sources and inexpensive supplies of natural gas have already been developed in most of the producing basins in North America. Consequently, more and more wells are needed to be drilled in order just to keep the level of production steady. This factor has dampened expectations about the level of domestic production in the future.

Natural gas price increases have led to a dramatic increase in drilling of new natural gas wells. For example, in the U.S. the number of gas wells drilled in 2005 was 2 ½ times the number drilled in 1999, leading to a 33% increase in the total number of producing gas wells. However, there has been no significant increase in domestic production of natural gas - U.S. gas production was actually slightly lower in 2005 than in 1999. California natural gas production has declined by about 30% since 1999.

The U.S. Energy Information Administration (EIA) expects that, due to increased drilling and increased production in a small number of producing basins, total U.S. domestic production will increase in future years, but by only about 7.6% from 2005 to 2015, not nearly enough to match the EIA's forecasted 15.2% increase in national demand during that same period.¹

B. Decreasing imports from Canada and diversion of Canadian supplies to other markets

The U.S. imported about 17% of its natural gas requirements from Canada in 2005, and Canada is by far the largest source of natural gas imports to the U.S., still well above LNG imports. California imported about 23% of its requirements from Canada in 2005. However, decreasing production rates are also occurring in Canada. In addition, many analysts expect that Canada will be using greater amounts of natural gas in the future for its own needs. The EIA now expects that imports of natural gas from Canada will decline by 45% in the next 15 years. This will have important implications for the U.S. in general and for California specifically.

Market developments had already impacted the price and volume of Canadian imports to California a few years ago. In the 1990's, Canadian Alberta supplies were the lowest-priced supplies available to California, largely because those supplies were constrained

¹ Data from the EIA in this memorandum is from the EIA's Annual Energy Outlook 2007 (Early Release), which was just issued in the beginning of December, 2006.

by the amount of pipeline capacity to transport gas to other markets in the U.S. Due to the low price, the interstate pipeline from Canada was typically full. However, new and expanded pipelines were built that allowed Alberta supplies to flow to Midwestern and eastern markets in the U.S. and to increase the Alberta supplies to eastern markets in Canada. This had a dramatic impact on the price of Canadian supplies to California. California imported 20% less gas from Canada in 2005 than in 2001, even though California still depended upon Canadian supplies for 23% of its demand in 2005.

C. Diversion of Rocky Mountain supplies to other markets

Fortunately for California, production of natural gas in the Rocky Mountains increased in recent years and more supplies were able to be delivered to California on a 2003 pipeline expansion from that region. California received more than twice as much Rocky Mountain supplies in 2005 compared to 2001.

However, just like Canadian production, Rocky Mountain production is also becoming constrained, and this has led to the proposal of another major pipeline out of the Rocky Mountain region that will also deliver supplies to Midwestern and eastern markets. While market analysts expect that Rocky Mountain production will be one of the few natural gas producing areas in the U.S. that will increase production in the future, the new pipeline system could result in less Rocky Mountain production being delivered to California in the future.

D. Increasing demand, particularly from electric generation

While North American production is generally expected to remain flat or slightly increase in coming years, natural gas demand is expected to steadily increase, outstripping increases in domestic production and Canadian imports. Even if demand in California does not increase due to our strong energy efficiency and renewable energy programs, total natural gas demand in the U.S. is expected by the EIA to increase by 15.2% from 2005 to 2015. One of the main reasons that national demand is expected to increase is because electric generation relies heavily on natural gas as a fuel, and will do so increasingly in the future.

The amount of natural gas delivered as a fuel for electric generation in the U.S. increased by over 40% from 1997 to 2005 and amounts to well over 25% of total consumption. Natural gas used by electric generators in California is an even greater proportion of total demand, amounting to about 35-40% of total consumption.

The EIA forecasts an increase in natural gas demand by electric generators of about another 23% between 2005 and 2015. This estimate even assumes a 13% increase in coal use by electric generation. Increased emphasis on greenhouse gas emissions reductions may, however, result in even greater usage of natural gas, rather than coal or oil.

E. Changes in the interstate pipeline market

While there is currently ample interstate pipeline capacity from the producing gas basins connected to California, some changes have been occurring, and may be occurring in the future, that could have a significant impact on the State's ability to fully employ that pipeline capacity.

The FERC has clearly indicated that firm deliveries of natural gas on interstate pipelines can only be assured if shippers have contracts for firm capacity on those pipelines. Over the last 10 years, there has been a marked decline in the volume of capacity in firm contracts (which have California delivery points) between shippers and the two primary southwestern interstate pipelines, El Paso Natural Gas Company (El Paso) and Transwestern Pipeline Company (Transwestern). At the same time, there has been a large increase in the demand in states east of California. If parties in those states obtain firm pipeline capacity rights on Transwestern and El Paso, while certain firm contracts with California delivery points are not obtained by pipeline shippers, California would no longer be assured that it will be able to use the previously available capacity on these pipelines at all times, i.e. on a firm basis.

In addition, due to likely changes in the future configuration of gas flows on the Transwestern pipeline system, much of the capacity currently available to California on that pipeline, could be essentially diverted to the Phoenix area market. Transwestern is currently proposing a pipeline lateral on its system that could deliver natural gas to the Phoenix area. If firm capacity rights are obtained by pipeline shippers to the Phoenix area, this will result in a reduction of the amount of gas that could be delivered to California on Transwestern on a reliable basis.

Likewise, if more of the Alberta production is used in Canada, California would not be able to have the same amount of firm access to the Canadian supply, from which California previously benefited. In fact, Gas Transmission Northwest Corporation (GTN) estimates that there is approximately 450 MMcf/d of unsubscribed capacity on its interstate pipeline, which transports natural gas from Canada to California.

F. Increasing prices and price volatility

The price of natural gas has significantly increased since about 2002. During the 1990's and from the summer of 2001 through the fall of 2002, the average price was very steady, in the range of \$2.00-\$3.00 per million British thermal unit (MMBtu). During the California energy crisis, from the Summer of 2000 through the Spring of 2001, unreasonably high natural gas prices were being charged at the California border, resulting from market manipulation. Because there were ample supplies of natural gas, much of the rest of the North American markets at that time benefited from lower prices than California (with the exception of a few other western states affected by the California border prices.) There were many California ratepayers (residential and businesses), who had great difficulties paying for such high natural gas prices at that time in addition to the unreasonably high electric prices, which were independently caused by separate manipulation of the electric market.²

The price of natural gas has increased in years after 2002 and has become much more volatile, mainly due to market "fundamentals," i.e. the increased tension between North American supply and demand and certain other factors such as the price of oil. Higher natural gas prices are occurring not only in California but throughout North America. As noted above, the ability to produce natural gas supplies has become increasingly difficult. In addition, the cost of production has greatly increased. Most market forecasts indicate that demand will steadily increase to a greater degree than domestic production increases, while Canadian imports will decline, and that demand will only be met through increasing reliance on imports of LNG. Without new supplies from LNG to meet this demand in the future, there will be even greater upward pressure on the price of gas. Considering all of the electric generation plants dependent upon natural gas for fuel, natural gas price increases will cause electric prices to increase as well. There are many residential ratepayers and businesses, who cannot afford substantial increases in their gas and electric utility bills.

Further, if the supply/demand balance becomes tighter, the volatility of the price will become even more pronounced. Events such as swings in the weather (such as very warm weather in the summer, cold weather in the winter, or low precipitation) or sudden losses in production, e.g. due to hurricanes, will have even greater impacts on prices. Heightened price volatility makes it more difficult for consumers to manage their natural gas costs, and conditions in which constraints in supplies and/or infrastructure exist can be conducive to market manipulation.

² The damages to California ratepayers from just the natural gas manipulation during the energy crisis has been estimated to be approximately \$8 billion.

Therefore, to help place downward pressure on natural gas prices, lessen the likelihood of skyrocketing prices, and enhance California's portfolio of supply, it is essential that LNG becomes a new source of supply for California.

G. Efforts must be placed both on demand reduction and obtaining new supplies

Rather than wait to see how the market develops in the future, the CPUC believes it is much more reasonable to take a balanced approach now to assure ourselves that the State will have adequate supplies and access to a diverse portfolio of supplies down the road. The State should both promote strong demand reduction efforts and further its access to a variety of natural gas sources, including new sources such as LNG supplies for at least a portion of its supply requirements in coming decades.

To gain access to LNG supplies will not occur quickly. The only terminal at this time which appears positioned to deliver LNG to California in the next few years is the Sempra LNG Costa Azul terminal in Baja Mexico. Supplies from that terminal will not begin until 2008 at the earliest. Even though that terminal is a short distance from the California border, California will only receive a portion of the natural gas from that terminal's 1000 MMcfd of delivery capability, as Mexican entities already have firm commitments for a substantial amount of that supply, and other demand, such as in Arizona, will be competing with California for the remaining supply.

II. LNG Import Terminals Should Be Sited in Remote Locations

The CPUC has recognized both the need for LNG terminals to provide additional natural gas supplies to California and the need to site them in remote locations away from densely populated areas, due to the hazardous nature of these terminals. For example, in

1944, LNG spilled from storage tanks in Cleveland, and the resulting LNG vapor cloud ultimately ignited into a fire, which killed 130 people and injured 225 people. More recently, on January 19, 2004, there was an accident at the LNG export facility in Algeria, where 27 people were killed and 56 people were injured from the resulting explosions and fires.

The Sempra LNG terminal is in a remote area in Baja California, Mexico and already more than 50% constructed. A review of the trade press, discussions with LNG project sponsors, and statements by market analysts at conferences indicate that in addition to the Sempra LNG terminal, the market will support an LNG import terminal along the California coast. There are at least three LNG import terminals, which have been proposed to be located in federal waters at least 10 miles offshore along the Southern

California coast and other potential projects as well. Therefore, LNG terminals do not need to be sited onshore in densely populated areas in California. There is no reason to expose the people in densely populated areas to any of the safety risks from an onshore LNG terminal when there are these much safer alternatives offshore.

Recent studies, which have used different assumptions to calculate the furthest distance that people could be harmed from the release of LNG as a result of an accident, terrorist attack or earthquake in worst-case scenarios, have estimated such distances to be in a range of between 4.3 to 7.3 miles from the LNG terminal or ship transporting LNG to the terminal. This is the distance that a flammable vapor cloud could spread before the LNG would become too dissipated and no longer be flammable. In all likelihood, the vapor cloud would be ignited and become a flash fire prior to reaching that maximum distance.

According to the Sandia National Laboratories Report (November 2005), in the event that the release of LNG is ignited right away and becomes a pool fire, the distance at which heat from the fire would pose a serious threat to people could reach 1.6 miles from the LNG terminal or LNG ship in a worst-case scenario. This is based upon the heat flux of 5 kilowatts per square meter (kW/m^2), which would be so hot as to cause a person to receive at least second-degree burns after an exposure to this heat of just 30 seconds.

Many scientists, including Dr. Jerry Havens (who has studied LNG safety issues for more than 30 years and is the CPUC's retained LNG safety expert), have criticized the use of the $5 \text{ kW}/\text{m}^2$ heat flux standard. People could be harmed by lower heat flux levels at distances more than 1.6 miles from the pool fire, because their exposure might well be for a period of time greater than 30 seconds. In a worst-case scenario, a lower heat flux of approximately $1.5 \text{ kW}/\text{m}^2$ (the level at which no significant harm would result to an individual even for extended exposure), would not be met until the distance from the pool fire was more than 4 miles.

Therefore, even in a worst-case scenario, an LNG import terminal at least 10 miles offshore would pose no danger or risk to the general population onshore. Under all of the recent studies of worst-case scenarios, the flammable vapor cloud, heat and/or fire would dissipate and would not spread to reach the shoreline or even get as close as 2.6 miles offshore.

For these same reasons, it is also clear that an LNG import terminal should not be sited onshore in or near a densely populated area. A worst-case scenario accident at an LNG terminal could endanger very many people in a densely populated area, living or working less than the above distances from the terminal (e.g., up to 7.3 miles for a flammable vapor cloud or 4 miles for the heat from a pool fire.) Onshore fires can also lead to secondary fires and spread to even greater distances than offshore fires, which will not

spread on ocean water beyond the maximum distance that the LNG vapor cloud remains flammable (i.e., 7.3 miles).

Even in LNG accidents that resulted in releases affecting shorter distances than in the worst-case scenarios, too many people in a densely populated area could be in harm's way. Just a ten-minute accidental spill from an LNG ship while it is unloading LNG at a terminal could result in the release of up to 550,000 gallons of LNG.

For these reasons, LNG import terminals should not be sited in densely populated areas in California, particularly because California has much safer alternatives: the proposed LNG terminals at least 10 miles offshore.

cc: Commissioner Brown
Commissioner Grueneich
Commissioner Bohn
Commissioner Chong

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