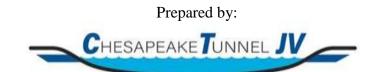
# Annual Marine Monitoring Report Parallel Thimble Shoal Tunnel Project Virginia Beach, Virginia



Chesapeake Tunnel Joint Venture 2377 Ferry Road Virginia Beach, Virginia 23455

Submitted to: National Marine Fisheries Service Office of Protected Resources 1315 East-West Highway Silver Spring, Maryland 20910-3226

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# ACRONYMS AND ABBREVIATIONS

СТЈУ	Chesapeake Tunnel Joint Venture
DTH	Down the Hole
GPS	Global Positioning System
IHA	Incidental Harassment Authorization
MHW	Mean High Water
МММР	Marine Mammal Monitoring Plan
ММО	Marine Mammal Observer
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Marine Fisheries Service
PTS	Permanent Threshold Shift
PTST	Parallel Thimble Shoal Tunnel
SOE	Support of Excavation
TBM	Tunnel Boring Machine

# **1. EXECUTIVE SUMMARY**

Under the Incidental Harassment Authorization (IHA), issued by NOAA on March 10, 2020, a total of 76 in-water 36" steel pipe piles and 60 42" steel casing were installed/ removed on the project. This work was done using a Down The Hole (DTH) hammer, traditional impact hammering and vibratory hammer extraction.

Construction began on March 20<sup>th</sup> and concluded on October 2<sup>nd</sup>, of which 64 days were spent driving pile. During this period, Marine Mammal Observers (MMOs) were onsite 108 days to observe both upland and in-water pile installation. There were a total of 100 marine mammals observed, all being bottlenose dolphins. Of these days, no Level A or Level B takes occurred.

Due to construction delays related to weather and unforeseen geotechnical conditions, the Chesapeake Tunnel Joint Venture (CTJV) will be unable to complete all of the planned work allowed in the 2020 IHA at the Parallel Thimble Shoals Tunnel Project (PTST) before the expiration date of March 10, 2021 and, therefore, is requesting a Renewal IHA to authorize takes of marine mammals for the subset of the initially planned work that was not completed. The work would be identical to a subset of the activities analyzed in the 2019 IHA application. Specifically, the location, timing, and nature of the activities, including the types of equipment planned for use, are identical to those approved in the 2020 authorized IHA.

## 2. INTRODUCTION

The CTJV's PTST project consists of the construction of a two-lane parallel tunnel to the west of the existing Thimble Shoal Tunnel, connecting Portal Island Numbers (Nos.) 1 and 2. Upon completion, the new tunnel will carry two lanes of southbound traffic and the existing tunnel will remain in operation and carry two lanes of northbound traffic. The 6,525 linear feet (ft.) of new tunnel will be constructed using a Tunnel Boring Machine (TBM), with 5,356 linear ft. located below Mean High Water (MHW).

Pile driving activities for the PTST Project have the potential to cause sound levels that exceed Level A and Level B acoustic harassment thresholds for marine mammals, as defined by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries) Office of Protected Resources (NOAA Fisheries 2016h) and therefor required the need for an IHA.

This project is occurring in areas of the lower Chesapeake Bay that overlap with the range of several marine mammal species. The granted 2020 IHA allowed takes for five species of marine mammals: harbor seals (*Phoca vitulina*), gray seals (*Halichoerus grypus*), humpback whale (*Megaptera* novaeangliae), harbor porpoises (*Phocoena phocoena*), and bottlenose dolphin (*Tursiops spp.*). These takes are associated with pile driving activities associated with the PTST Project Area.

# 3. MONITORING AND METHIDOLOGY

#### **3.1 MONITORING PROCEDURES**

The PTST Marine Mammal Monitoring Plan (MMMP)(Appendix A) was updated to reflect updates in the March 10, 2020 authorized IHA. This plan served as the protocol for monitoring marine mammals during pile installation activities in the Project Area. The goal of the MMMP was to prevent unauthorized Level A or Level B takes and to minimize Level B harassment using clearly defined methods for monitoring and shutdown procedures during construction.

# **3.2 OBSERVER QUALIFICATIONS**

The CTJV employed NOAA Fisheries-approved MMOs from REMSA Incorporated, to monitor Level A Shutdown Zones and Level B ZOI. These individuals met the qualifications and experience outlined in Section 5 of the March 10, 2020 Issued IHA.

Days where pile installation activities occurred, observers were on site and observation records were completed.

The following data was included in the observation records:

- Dates and times (begin and end) of all marine mammal monitoring.
- Construction activities occurring during each daily observation period, including how many and what type of piles were driven or removed and by what method (*i.e.*, impact or vibratory).
- Weather parameters and water conditions during each monitoring period (*e.g.*, wind speed, percent cover, visibility, sea state).
- The number of marine mammals observed, by species, relative to the pile location and if pile driving or removal was occurring at time of sighting.
- Age and sex class, if possible, of all marine mammals observed.
- MMO locations during marine mammal monitoring.
- Distances and bearings of each marine mammal observed to the pile being driven or removed for each sighting (if pile driving or removal was occurring at time of sighting).
- Description of any marine mammal behavior patterns during observation, including direction of travel.
- Number of individuals of each species (differentiated by month as appropriate) detected within the monitoring zone, and estimates of number of marine mammals taken, by species (a correction factor may be applied to total take numbers, as appropriate).
- Detailed information about any implementation of any mitigation triggered (e.g., shutdowns and delays), a description of specific actions that ensued, and resulting behavior of the animal, if any.
- Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals.
- Level A and Level B harassment exposures recorded by PSOs must be extrapolated based upon the number of observed takes and the percentage of respective harassment zones that are not visible.
- Marine mammal observational datasheets or raw data.

The MMOs followed the approved ZOI for each activity based on guidance from the March 10, 2020 issued IHA.

### 4. OBSERVATIONS AND FINDINGS

#### **4.1 SCHEDULE OF ACTIVITIES**

The PTST Project construction activities under the current 2020 IHA did not begin until March 20<sup>th</sup> 2020 and were concluded on October 2<sup>nd</sup>, 2020. During this construction window, 76- 36" steel piles were installed.

#### In-water activities that occurred during 2020 IHA Construction Window:

Construction of a temporary dock on the west side of Portal Island No. 1. The installation of the 58-36" diameter hollow steel pipe piles were completed by initially driving a 42" steel casing with a DTH hammer through the armor stone, then using an impact hammer to install the 36" piles. A bubble curtain was used during the impact driving of each 36" pile in water deeper than 10 feet.

Construction of the Portal Island No. 1 temporary trestle, composed of 18- 36" diameter hollow steel piles on the west side of the island. The installation of the piles involved using the DTH to get the pile through the initial armor stone and finishing with a traditional impact hammer. A bubble curtain was used during the impact driving of each pile in water deeper than 10 feet.

Table 1, outlines the progression of pile installation throughout the 2020 IHA Construction Window.

	11	able 1- Actua	l Pile Installa	uon Sche	aule Under	1 202	0 122	ueu	IIA			
	HALF DAY BEFORE HOLIDAY	HOLIDAY DID NOT WORK	HIGH WINDS/INCLIMATE WEATHER COULD NOT WORK	PRODUCTION WORK	UNFORESEEN CONDITIONS	Drive/Dri	Drive 36"Ø	Rmv/Insp				
			WaterTreatmentPlant	BREAK IN IHA		11 42"Ø	Pipe Pile (Set-Up	ect 42"Ø		mpletely Pipe Piles		Actual
	BERMINGHAMMER/MINCO	SAFETY/TRAINING RELATED	(WTP)	PERMIT		Casing	Bubble	Casing	- Shiven	riperiles	Actual	Driving
	N RELATED WORK	ITEMS	or Muck Pit Work	COULDN'T WORK IN WATER			Curtain)				Weekly	Day
						0.00 EA	0.00 EA	0.00 EA	0.0	00 EA	Qty	(Below MHW)
% of Total =>		Des	cription / Pipe Pile #			35%	31.5%	10%	100%	Actual		,
Date									Actual	Cumulative Qty		
Date		1	Actual	1	1	Actual Da	aily Qty Bre	ak Down	Daily Qty	QLY		
3/7/2020	Mobilize Set Up A-0 (Dock Extension)								0.100 EA	6.300 EA		0
3/8/2020									0.000 EA	6.300 EA	0.100 EA	0
3/9/2020	Set-Up for Casing COP1	Begin Leveling Armor Stone at COP1							0.100 EA	6.400 EA		0
3/10/2020	Finish Leveling Armor Stone	Drive Casing COP1	Splash Wall settlement be	gan to impact temp		1.00EA			0.350 EA	6.750 EA		0
3/10/2020	at COP1 Begin Splash Wall	Begin Set-Up for Casing	road way			1.0014			0.350 EA	0.730 EA		
3/11/2020	Stabilization	COP1							0.025 EA	6.775 EA		0
3/12/2020	Finish Splash Wall	Finish Set-Up for Casing							0.075 EA	6.850 EA		0
3/13/2020	Stabilization Drive Casing COP2	COP1				1.00EA			0.350 EA	7.200 EA		0
3/14/2020	Build C6P7-8 Casing								0.000 EA	7.200 EA		0
2/15/2020	Template								0.000 EA	7.200 EA	0.900 EA	0
2/12/2020	Build C6P7-8 Casing										0.500 EA	
3/16/2020	Template	ing bottles and	handrat immediate and						0.100 EA	7.300 EA 7.300 EA		0
3/17/2020 3/18/2020	Installed 19 Mats onto B1 Sp:	ing, but the crane power pack ins 4 & 5, relocate LB 298 to B1	L Span 5, prepare 1300 to drill						0.000 EA 0.000 EA	7.300 EA 7.300 EA		0
3/19/2020	Begin Drilling Casing C6P7								0.050 EA	7.350 EA		0
3/20/2020	Finished Drilling Casing C6P7	Drilled Holes in Timber Deck for Survey Point				1.00EA			0.350 EA	7.700 EA		1
3/21/2020	Set-Up for Casing C6P8	for survey Point							0.150 EA	7.850 EA		0
3/22/2020									0.000 EA	7.850 EA	0.650 EA	0
3/23/2020	Drilled Casing C6P8 Cleaned up work area and					1.00EA			0.350 EA	8.200 EA		1
3/24/2020	prep for H-Piles Extraction	Began Main Dock Template Assembly							0.050 EA	8.250 EA		0
	(for Night Shift) Worked on Template	High Winds/Rain Stopped										
3/25/2020	Assembly	Work @11:30AM							0.050 EA	8.300 EA		0
3/26/2020	Continued Template								0.100 EA	8.400 EA		0
	Assembly Completed Template											
3/27/2020	Assembly								0.100 EA	8.500 EA		0
3/28/2020	Installed Template @ C5P7-8, C4P7-8								0.100 EA	8.600 EA		0
3/29/2020	Drilled Casing CSP7					1.00EA			0.400 EA	9.000 EA	1.150 EA	1
3/30/2020	Drilled Casings C4P7 & C4P8	Unload/Store/Mark 98" Pipe				2.00EA			0.800 EA	9.800 EA		1
3/31/2020	Attempted to thread casing	Piles (4 EA) on to drill but got stuck at splic	ce. Removed casing, brought						0.000 EA	9.800 EA		0
4/1/2020	Begin Drilling Casing C5P8								0.050 EA	9.850 EA		0
4/2/2020	Finished Drilling Casing C5P8					1.00EA			0.350 EA	10.200 EA		1
4/3/2020	Begin Switch from	Probe Casings C6P7-P8,							0.210 EA	10.410 EA		0
4 3/2020	CAS to D-80	C5P7-P8, & C4P7-P8							0.210 EA	10.410 EA		0
4/4/2020	Finish Switch from CAS to D-80	Drive C6P7Pile					1.00 EA		0.315 EA	10.725 EA		1
4/5/2020									0.000 EA	10.725 EA	1.725 EA	0
4/6/2020	Drive C6P8 & C5P7 Piles	Cut C6P7 to Top of Casing			NS: Muck Out C5P8 Casing		2.00 EA		0.668 EA	11.393 EA		1
4/7/2020	Drive CSP8 & C4P8 Piles	Cut C6P8& C5P7 to Top of			NS: Muck Out C4P7		2.00 EA		0.705 EA	12.098 EA		1
-4 17 2020	Diffe cure of care rifes	Casing		NS: Remove C4P7-	Casing		A VO EA		3.753 EA	****30 EA		1
4/8/2020	Drive C4P7 Pile	Cut C4P7, C4P8, & C5P8 to Top of Casing		P8, C5P7-P8, & C6P7-P8Casings	NS: Muck Out COP1, COP2 Casings		1.00 EA	6.00 EA	1.028 EA	13.125 EA		1
4/9/2020	HIGH WINDS ALL DAY	Cut C4P7, C4P8, C5P7,	Unload/Store/Mark 98" Pipe	NS: Muck Out COP1,	NS: Begin Moving Dock Template to Bents 2 &				0.120 EA	13.245 EA		0
		& CSP8 to Grade	Piles (2 EA)	COP2 Casings	3							
4/10/2020	HIGH WINDS ALL DAY	Drive COP1 & COP2 Piles					2.00 EA			13.875 EA		1
4/11/2020	CREW HAD WEEKDEND OFF								0.000 EA 0.000 EA	13.875 EA 13.875 EA	2 150 54	0
4/13/2020	HIGH WINDS & RAIN ALL DAY								0.000 EA		3. 130 EA	0
4/14/2020	Installed Template			NS: Switch from D-					0.350 EA	14.225 EA		0
	@ C3P6-7, C2P4			80 to CAS			<u> </u>					
4/15/2020	High Winds/Rain Stopped	Drilled Casings C3P6 & C3P7		NS: Cut C6P7 & C6P8	NS: Muck Out C3P6, C3P7 Casings	2.00EA			0.775 EA	15.000 EA		1
-1 2-1 2020	Work 6:30AM to 11:30AM	control control corrol of CaP7		Piles to Grade	Test Trash Pump	2. WEA			3.773 EA	LJANN EA		1
4/16/2020	Drilled Casing C2P4	Begin Drilling Casing C1P4	Unload/Store/Mark 98" Pipe	NS: Continued	NS: Cut COP1 & COP2 to	1.00EA			0.575 EA	15.575 EA		1
, ,			Piles (2 EA)	Drilling Casing C1P4	Top of Casing							
	Finished Drilling Casing	Begin Switch from	NS: Finish Switch from	NS: Muck Out C2P4,	NS: Probe C3P6, C3P7,	1.00EA			0.540 EA	16.115 EA		1
4/17/2020				C1P4 Casings	C2P4, & C1P4		1	1			1	
4/17/2020	CIP4	CAS to D-80	CAS to D-80	car + cusings								
	Attempted to Drive PDA	CAS TO D-80	CAS to 0-80	car + casings								
4/17/2020 4/18/2020	Attempted to Drive PDA	CAS to D-80	CAS 10 D-80						0.000 EA	16.115 EA		0

#### Table 1- Actual Pile Installation Schedule Under 2020 Issued IHA

								0.000 5 4			
			NS: Began					0.000 EA	16.115 EA	2.240 EA	0
Drive C3P6, C3P7, C2P4, & C1P4 Piles	NS: Cut C3P6, C3P7, & C2P4 to Top of Casing	NS: Rmv C3P6, C3P7, & C2P4 Casings	Relocating Materials/Eqpt. for			4.00 EA	3.00 EA	1.673 EA	17.788 EA		1
Cut C3P6, C3P7, & C2P4 to Grade	Swap 298 & 1300 Crane Positions	NS: Cut C1P4 to Top of Casing	NS: Rmv C1P4, C0P1,				3.00 EA	0.375 EA	18.163 EA		0
Switch from D-80 to CAS	Rmv Template from B1- Bents 2/3 Prep Template for B2-Bents	Unload/Store/Mark 98" Pipe Piles (2 EA)	NS: Installed Template @ C6P9-10, C7P9-10	NS: Cut C1P4 & C0P1 Piles to Grade				0.425 EA	18.588 EA		0
Drilled Casing C6P9	6/7			NS: Cut COP2 Pile to Grade	1.00 EA			0.413 EA	19.000 EA		1
Drilled Casing C7P9	Begin Drilling Casing C7P10			ondec	1.00 EA			0.450 EA	19.450 EA		1
Continued Drilling Casing								0.000 EA	19.450 EA		0
C/P10								0.000 EA	19.450 EA	3.335 EA	0
Finished Drilling Casing					1.00 EA			0.350 EA	19.800 EA		1
								0.000 EA	19.800 EA		0
Begin Drilling Casing C6P10								0.050 EA	19.850 EA		0
					1.00 EA			0.350 EA	20.200 EA		1
Issues removing DTH Hammer from Casing								0.000 EA	20.200 EA		0
Install Template Extention for C7P11, C7P12								0.200 EA	20.400 EA		0
Della d Casta a C7044					1.00.54			0.000 EA	20.400 EA	0.950 EA	0
Drilled Casing C7P11 Drilled Casing C7P12					1.00 EA 1.00 EA			0.400 EA	20.800 EA 21.200 EA		1
Drilled Casing C6P11	Install Template Extention for C6P11, C6P12				1.00 EA			0.600 EA	21.800 EA		1
Drilled Casing C6P12	Begin Switch from CAS to D-80	NS: Finish Switch from CAS to D-80	Row C1 C6-C7 casings not probed due to min. rock during drilling.	NS: Muck Out C6P12 Casing	1.00 EA			0.540 EA	22.340 EA		1
Drove Pile C6P12				NS: Muck Out C6P10, C6P11, C7P12 Casings		1.00 EA		0.315 EA	22.655 EA		0
DID NOT WORK DUE TO 60 HOURS WEEKLY MAN HOUR								0.000 EA	22.655 EA		0
LIMIT								0.000 EA	22.655 EA	2.255 EA	0
Drive C6P10, C6P11, & C7P12 Piles	Place 2nd Layer of Timber Mats Row B1 Bay 3	NS: Cut C6P11, C6P12, & C7P12 to Top of Casing	Row B2 C6-C7 casings not probed due to min. rock during drilling.	NS: Muck Out C6P9, C7P9-P11 Casings		3.00 EA		1.198 EA	23.853 EA		1
Drive C6P9, C7P9, C7P10, & C7P11 Piles	Cut C6P10 Pile to Grade (Unload 2 EA 36"Ø x 98' Piles)	NS: Cut C6P10, C7P9, C7P10, & C7P11 to Top of Casing	NS: Rmv C6P11, C6P12, & C7P12 Casings	NS: Weld Extension to C6P10 Casing for Extraction		4.00 EA	3.00 EA	1.760 EA	25.613 EA		1
Begin Switch from D-80 to CAS	Rmv C7P11 Casing	Cut C6P11, C6P12, C7P11, & C7P12 Piles to Grade	NS: Rmv Template Extention from Bents 6-7				1.00 EA	0.150 EA	25.763 EA		0
Rmv C6P9, C6P10, C7P9, & C7P10 Casings	Finish Switch from D-80 to CAS	Cut C6P9, C7P9, & C7P10 Piles to Grade	NS: Installed Template @ C4P9-10, C5P9-10				4.00 EA	0.838 EA	26.600 EA		0
Drilled Casings C4P10 & C5P10	Need to Change Out Pilot Bit	Install Template Extention for C4P11, C4P12, C5P11, & C5P12			2.00 EA			1.200 EA	27.800 EA		1
HOURS WEEKLY MAN HOUR								0.000 EA	27.800 EA		0
LIVIT								0.000 EA	27.800 EA	5.145 EA	0
Waiting to Receive New Pilot Bit	Place 2nd Layer of Timber Mats Row B1 Bay 2	High Winds/Rain Stopped Work @2:30PM						0.000 EA	27.800 EA		0
Change Out Pilot Bit	HIGH WINDS & RAIN ALL DAY	Unload 2 EA 36"Ø x 98' Piles	NS: High Winds/Rain Stopped Work @8:30PM					0.000 EA	27.800 EA		0
High Winds/Rain Stopped Work @9:30AM		NS: Assemble CAS						0.000 EA	27.800 EA		0
Welded Holes on DTH Hammer			NS: Load Out Drill to Warehouse					0.000 EA	27.800 EA		0
Drove 3 EA Sheet Piles @ NE End of Muck Pit								0.000 EA	27.800 EA		0
Drove 1 EA Sheet Piles @ NE End of Muck Pit	Thread Omega Interlock onto Sheet Pile North of "L" King Piles							0.000 EA	27.800 EA		0
		-						0.000 EA	27.800 EA	0.000 EA	0
MEMORIAL DAY - DID NOT WORK								0.000 EA	27.800 EA		0
Drove 7 EA Sheet Piles @ NE								0.000 EA	27.800 EA		0
Drove 16 EA Sheet Piles @								0.000 54	27 800 54		0
Muck Pit Tried to Drive 1 EA Sheet								5.000 EA	27.000 EA		U
Pile Using								0.000 EA	27.800 EA		0
	C1P4 Piles Cut C3P6, C3P7, & C2P4 to Grade Switch from D-80 to CAS Drilled Casing C6P9 Drilled Casing C7P9 Continued Drilling Casing C7P10 Had to Change Out Pilot Bit Begin Drilling Casing C6P10 Finished Drilling Casing C6P10 Finished Drilling Casing C6P10 Install Template Extention for C7P11, C7P12 Drilled Casing C6P12 Drilled Casing C6P13 Drilled Casing C6P13 Drive C6P3, C6P11, & C7P12 Piles Begin Switch from D-80 to CAS Rmv C6P3, C6P1, C6P11, & C7P12 Piles Begin Switch from D-80 to CAS CAS CAS CAS CAS Drilled Casings C4P10 Drilled Casing C4P13 Drive C6P3, C6P10, C6P13, & C7P12 Piles CAS CAS CAS CAS CAS CAS CAS CAS	C1P4 PilesTop of CasingCut C3P6, C3P7, & C2P4 to GradeSwap 258 & 1300 Crane PositionsSwitch from D-80 to CASRmv Template from B1- Bents 2/3 Prep Template for B2-Bents 6/7Drilled Casing C6P9Begin Drilling Casing C7P10Continued Drilling Casing C7P10Install Template for B2-Bents (7710Had to Change OULP104 BI Begin Drilling Casing C6P10Install Template Extention for C7P11, C7P12Drilled Casing C7P10Install Template Extention for C7P11, C7P12Drilled Casing C6P10Install Template Extention for C6P11, C6P12Drilled Casing C6P12Begin Switch from CAS to D-80Drilled Casing C6P12Segin Switch from CAS to D-80Drilled Casing C6P12Palce 2nd Layer of Timber Mats Row B1 Bay 3Drive C6P10, C6P11, & C7P12Place 2nd Layer of Timber Mats Row B1 Bay 3Drive C6P10, C6P11, & C7P12Rmv C6P10 C6P10, C6P11, C6P12 (Unload 2 EA 36"g/s x8" Piles)Drive C6P10, C6P11, & C7P12 PilesRmv C7P11 CasingDrive C6P10, C6P11, & C7P12 PilesPlace 2nd Layer of Timber Mats Row B1 Bay 3Drive C6P3, C7P9, C7P30, CASChange Out Pilot BitDrive C6P3, C7P10, CP110 CASPlace 2nd Layer of Timber Mats Row B1 Bay 2Drive C6P3, CFP10, CP10, CP11 CASPlace 2nd Layer of Timber Mats Row B1 Bay 2Drive C6P3, CFP10, CP10, CP10 CASPlace 2nd Layer of Timber Mats Row B1 Bay 2Drive C6P3, CP10, CP10, CP10, CP11 CASPlace 2nd Layer of Timber Mats Row B1 Bay 2Drive D10 NOT WORK DUE TO 60 HUNTDr	Drive Cape, CaP, ZeP, ZeP, ZeP, ZeP, ZeP, ZeP, ZeP, Ze	Dive CBP, CBP, C2P, AS C LPP NetTop of CasingNo: NW. 2BP, CBP, 2CPA CasingMeticating CasingM	Dive CBP (CP) (CP) (CP) (CP) (CP) (CP) (CP) (CP	Dive CPP (2017) C214, Diversional CPP (2017) C214, C217, C217	Dive GPR, CPP, CPA, B     Dive Cases Type Cases (CAS SPR CASE SPR CASE SPA CASES)     Not Case Sector Sector Sector Secto	Bine Carry, C	No. begin Camper 2007, Control Camper 2008, Control 	Durchardsorp     Single and solution of the second of the se	BARCHORDY IN 10 10 10 10 10 10 10 10 10 10 10 10 10

5/29/2020	Drove 7 EA Sheet Piles (Initial) @ Muck Pit	Unload Refurbished Drill / Attached Drill to VTL	NS: Relocate Dock Crew Box, of the Dock to the South						0.000 EA	27.800 EA		0
5/30/2020	Drove 2 EA Sheet Piles	Drove 9 EA Sheet Piles to	Tested Drill / Install Drill	NS: Relocate 5 EA Air	Compressors from the				0.000 EA	27.800 EA		0
5/31/2020	(Initial) @ Muck Pit	Grade @ Muck Pit	Stem / Install DTH Hammer	Island to the Doc	k to Clear Space for				0.000 EA	27.800 EA	0.000 EA	0
6/1/2020	Connected Hoses / Eq Dept. Fixed Hole Covers on DTHH	MMO's Arrived at 12:00PM	Drilled Casing C5P9	Threaded Casing C4P9	NS: Move Vac Tank from the Dock to Ground for Atlantic H&C Access	1.00 EA			0.450 EA	28.250 EA		1
6/2/2020	Drilled Casing C4P9	Greaser Broke while Drilling C4P9 Down for 2.5 Hours - Fixed	Stood/Drove 5 EA Sheet Piles @ North End of Muck Pit	Threaded Casing C4P11	NS: Move Vac Tank from the Dock to Ground for Atlantic H&C Access	1.00 EA			0.400 EA	28.650 EA		1
6/3/2020	Drilled Casings C4P11 & C4P12			NS: Threaded Casing C5P11		2.00 EA			0.800 EA	29.450 EA		1
6/4/2020	Drilled Casings C5P11 & C5P12					2.00 EA			0.750 EA	30.200 EA		1
6/5/2020	Begin Switch from CAS to D-80	NS: Finish Switch from CAS to D-80		Rows B2/C1, Bents 4- 5 casings not probed due to min. rock @ drilling.	NS: Muck Out C4P9, C5P9 Casings				0.280 EA	30.480 EA		0
6/6/2020	DID NOT WORK DUE TO 60 HOURS WEEKLY MAN HOUR LIMIT								0.000 EA	30.480 EA		0
6/7/2020	Muck Out C4P9, C5P12	Drive C4P9 & C5P12(PDA)		NS: Muck Out C4P12,			2005		0.000 EA	30.480 EA	2.680 EA	0
6/8/2020	Casings Continue to Muck Out	Piles	to Top of Casing NS: Cut C4P12, C5P10, &	C5P10, & C5P11 Casings NS: Muck Out C4P10,			2.00 EA		0.705 EA	31.185 EA		1
6/9/2020	C4P12, C5P10, & C5P11 Casings	Drive C4P12, C5P10, & C5P11 Piles	C5P11 Piles to Top of Casing	C4P11, & C5P9 Casings			3.00 EA		1.058 EA	32.243 EA		1
6/10/2020	Drive C4P10 & C4P11 Piles	Cut C4P10 & C4P11 Piles to Top of Casing	Continue to Muck Out C5P9 Casing Loose Rock Found While Digging	NS: Continue to Muck Out C5P9 Casing Loose Rock Found While Digging			2.00 EA		0.705 EA	32.948 EA		1
6/11/2020	Continue to Muck Out C5P9 Casing Large Loose Rock Found While Digging	NS: Continue to Muck Out C5P9 Casing Loose Rock Found While Digging							0.000 EA	32.948 EA		0
6/12/2020	Continue to Muck Out C5P9 Casing Large Loose Rock Found While Digging	NS: Continue to Muck Out C5P9 Casing Loose Rock Found While Digging							0.000 EA	32.948 EA		0
6/13/2020	while Digging	Digging							0.000 EA	32.948 EA		0
6/14/2020 6/15/2020	Drive CSP9 Pile	Cut C5P9 Pile to Top of Casing	Rmv C4P11, C4P12, C5P11, & C5P12 Casings	NS: Cut C4P11, C4P12, C5P11, & C5P12 Piles to Grade	NS: Begin Removing Template Extention from Bents 4-5		1.00 EA	4.00 EA	0.000 EA	32.948 EA 33.750 EA	2.406 EA	1
6/16/2020	High Winds/Rain Stopped Work @11:30AM	Continuing Removing Template Extention from Bents 4-5	Prep Piles C4P9, C4P10, C5P9, & C5P10 for Casing Extraction	NS: High Winds/Rain DID NOT WORK					0.000 EA	33.750 EA		0
6/17/2020	Rmv Template Extention from Bents 4-5	Rmv C4P9, C4P10, C5P9, & C5P10 Casings	Cut C4P9, C4P10, C5P9, & C5P10 Piles to Grade	NS: Rmv Main Dock Template from Bents 4-5	NS: Begin Main Dock Template Installation at Bents 2-3			4.00 EA	0.450 EA	34.200 EA		0
6/18/2020	Installed Template @ C2P5, C3P8-9	Switch from D-80 to CAS							0.450 EA	34.650 EA		0
6/19/2020	Drilled Casings C2P5 & C3P9			NS: Begin to Install Template Extention for C2P6, C3P10, & C3P11	NS: Last Night for Night Shift R. Parkerson Transferred to HRBT	2.00 EA			0.925 EA	35.575 EA		1
6/20/2020	0700-0800: Lightning	0800-0930: Waiting on Equip. for Compressor	0930-1300: Communication Issues with Survey						0.000 EA	35.575 EA		0
6/21/2020	Electricians Worked on	Complete Template							0.000 EA	35.575 EA	2.628 EA	0
6/22/2020	the LR 1300 All Day Drilled Casings C2P6, C3P8,	Extention Installation for C2P6, C3P10, & C3P11							0.225 EA	35.800 EA		0
6/23/2020	& C3P11 Drilled Casing C3P10					3.00 EA			1.050 EA	36.850 EA		1
6/24/2020 6/25/2020	Drilled Casing C3P10 Drilled Casings C1P5 & C1P6					1.00 EA 2.00 EA			0.350 EA 1.000 EA	37.200 EA 38.200 EA		1
6/26/2020	Switch from CAS to D-80	Muck Out C2P6, C3P9, C3P10, & C3P11 Casings							0.070 EA	38.270 EA		0
6/27/2020	Continue to Muck Out C2P6, C3P9, C3P10, & C3P11								0.070 EA	38.340 EA		0
6/28/2020	Casings								0.000 EA	38.340 EA	2.765 EA	0
6/29/2020	Attempt to Drive C3P11, but D-80 Hammer Would Not Fire	Muck Out C1P5 & C3P8 Casings							0.070 EA	38.410 EA		0
6/30/2020	Drive C2P6, C3P8, & C3P11 Piles	Attempt to Drive C3P9, but Casing Drove Down w/ Pile to Top of Template					3.00 EA		0.945 EA	39.355 EA		1

7/1/2020	Drive C3P10(PDA) & C1P5 Piles	Cut C1P5, C2P6, C3P8, C3P10, & C3P11 Piles to Top of Casing	Attempt to Pull Casing at Location C3P9	Muck Out C1P6 & C2P5 Casings	Assist ECSFI with Row B2/C1, Bay 3 Fit Test		2.00 EA		0.818 EA	40.173 EA		1
7/2/2020	Continue to Muck Out C1P6, C2P5, & C3P9 Casings	Pull Up C3P9 Casing for Pile Driving Attempt #2			Assist ECSFI with Row B2/C1, Bay 3 Fit Test				0.035 EA	40.208 EA		0
7/3/2020	JULY 4TH OBSERVED HOLIDAY	DID NOT WORK							0.000 EA	40.208 EA		0
7/4/2020	HOLIDAY								0.000 EA	40.208 EA		0
7/5/2020			Attempt to Drive C1P6, but						0.000 EA	40.208 EA	1.868 EA	0
7/6/2020	Drive C2P5 & C3P9 Piles	Muck Out C1P6 Casing	Casing Drove Down w/ Pile; Pulled Out Pile				2.00 EA		0.665 EA	40.873 EA		1
7/7/2020	Pull Up C1P6 Casing for Pile Driving Attempt #2	Muck Out C1P6 Casing	Drive C1P6 Pile	Cut C1P6, C2P5, & C3P9 Piles to Top of Casing	Switch crane locations and begin switching the drill motor air intake.		1.00 EA		0.428 EA	41.300 EA		1
7/8/2020	Extract C1P6, C2P6, C3P10, & C3P11 Casings	Remove Template Extention from Bents 2-3	Extract C2P5, C3P8, & C3P9 Casings	Cut C1P6, C2P5, C2P6, C3P8, C3P9, C3P10 & C3P11 Piles to Grade				7.00 EA	0.788 EA	42.088 EA		0
7/9/2020	Begin Switch from D-80 to CAS	Switch Drill Air Intake Support to Other Side of Drill	Extract C1P5 Casing	Cut C1P6 Pile to Grade	Relocate Materials from the Island to the Dock to Clear Space for Pacchiosi.			1.00 EA	0.113 EA	42.200 EA		0
7/10/2020	Begin Working on South Ramp	Clear Equipment / Materials Off Dock Extension	Remove 8 EA 4'x24' Timber Mats from Dock Extension						0.000 EA	42.200 EA		0
7/11/2020	Working on South Ramp	Off-Load / Set 18 EA 4'x30' Timber Mats on Dock Extension / South Ramp	Remove 2 EA 4'x24' Timber Mats from Dock Extension	Load-Out 8 EA 4'x24' Timber Mats to Yard					0.000 EA	42.200 EA		0
7/12/2020	Move Equipment /	Secure 18 EA 4'x30' Timber							0.000 EA	42.200 EA	1.993 EA	0
7/13/2020		Mats on Dock Extension / South Ramp	Cut 1 EA 4'x30' Timber Mat to Fit Had to make modifications	Finish Switch from D 80 to CAS Extract Casing at					0.000 EA	42.200 EA		0
7/14/2020	Template Installation from Bents 2-3	Begin Main Dock Template Installation at Bents 8-9	to template due to previous piles being off.	C8P9 (originally installed July 2019)					0.150 EA	42.350 EA		0
7/15/2020	Finish Main Dock Template Installation at Bents 8-9	Drilled Casings C8P9 & C9P6				2.00 EA			0.850 EA	43.200 EA		1
7/16/2020	Begin Template Extension	Drilled Casing C8P8				0.50 EA			0.350 EA	43.550 EA		1
7/17/2020	Installation at Bents 8-9 Finish Template Extension	Drilled Casings C8P10,				3.00 EA			1.450 EA	45.000 EA		1
7/18/2020	Installation at Bents 8-9	C8P11, & C9P7				5.00 E.1			0.000 EA	45.000 EA		0
7/19/2020									0.000 EA	45.000 EA	2.800 EA	0
7/20/2020	Move Air Compressors, Water Tanks, Equipment to the Middle of the Dock	Muck Out C8P11 & C9P7 Casings							0.170 EA	45.170 EA		0
7/21/2020	Drilled Casings C10P5 & C10P6	Unload 4 EA 36"Øx 98' Piles	Begin Switch from CAS to D-80			2.00 EA			0.900 EA	46.070 EA		1
7/22/2020	Muck Out C8P9 & C8P10 Casings	Finish Switch from CAS to D-80	Drive C8P9, C8P10, C8P11, & C9P7 Piles				4.00 EA		1.330 EA	47.400 EA		1
7/23/2020	Mechanics Inspecting LR 1300 / VTL System Whip Line Sheave	Remove D-80 Hammer from Leads, Lower VTL, Assist with Man Basket	Muck Out C8P8, C9P6, C10P5, & C10P6 Casings	Cut C8P9, C8P10, C8P11, & C9P7 Piles to Top of Casing					0.220 EA	47.620 EA		0
7/24/2020		Unload 4 EA 36"Ø x 98' Piles	Drive C8P8 & C9P6 Piles	Cut C8P8 & C9P6 Piles to Top of			2.00 EA		0.740 EA	48.360 EA		1
7/25/2020	& C10P6 Casings			Casing					0.000 EA	48.360 EA		0
7/26/2020	Muck Out C10P5 & C10P6								0.000 EA	48.360 EA	3.360 EA	0
7/27/2020	Casings Cut C10P5 & C10P6 Piles to Top of Casing	Drive C10P5 & C10P6 Piles Extract C8P8-P11, C9P6, C9P7, C10P5, & C10P6	Begin Template Extension Demobilization				2.00 EA	8.00 EA	0.665 EA 0.875 EA	49.025 EA 49.900 EA		1
7/29/2020	Cut C8P8-P11, C9P6, C9P7, C10P5, & C10P6 Piles to	Casings Finish Template Extension Demobilization	Place 2nd Layer of Timber Mats						0.150 EA	50.050 EA		0
7/30/2020	Grade Load Out Template Extension to Yard	Load Out 4 EA Casings to Yard	Row B2/C1 Bay 3						0.050 EA	50.100 EA		0
7/31/2020	PREPARE SITE FOR HURRICANE ISAIAS	Remove Existing Submerged Steel Plate	Set-Up Bubble Curtian in the Water for Row C2 Piles						0.000 EA	50.100 EA		0
8/1/2020	PREPARE SITE FOR HURRICANE ISAIAS								0.000 EA	50.100 EA		0
8/2/2020									0.000 EA	50.100 EA	1.740 EA	0
8/3/2020	PREPARE SITE FOR HURRICANE ISAIAS								0.000 EA	50.100 EA		0
8/4/2020	HURRICANE ISAIAS	Remove Main Dock							0.000 EA	50.100 EA		0
8/5/2020	REMOBILIZE SITE FROM HURRICANE ISAIAS DEMOB	Template Installation from Bents 8-9	Begin Main Dock Template Installation at Bents 4-5	Begin Switch from D- 80 to CAS					0.150 EA	50.250 EA		0
8/6/2020	Finish Main Dock Template Installation at Bents 4-5	Finish Switch from D-80 to CAS							0.150 EA	50.400 EA		0
8/7/2020	Begin Drilling Casing C4P14 Finished Drilling Casing					0.50 EA			0.275 EA	50.675 EA		1
8/8/2020	C4P14	Begin Drilling Casing C4P13				1.00 EA			0.350 EA 0.000 EA	51.025 EA		1
8/9/2020										51.025 EA		

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Number of the second problem of the second	1		51.825 EA	0.800 EA			2.00 EA			Begin Drilling Casing C5P14	Drilled Casing C5P13	Finished Drilling Casing	8/10/2020
01.000         00.000<										Begin Drining Casing C3F 14		C4P13	
Label and any operation of the sector of the sect	0						0.50 EA				CAS to D-80 Muck Out C4P14, C5P13,	C5P14 Finish Switch from	
ACCURATION         ACCURAT	1					3.00 EA					Drive C4P14, C5P13, & C5P14	CAS to D-80 Muck Out C4P13, C4P14, C5P13,	
UNIONEINFORMATIONINTERCIPTIONE<	1		53.550 EA	0.388 EA		1.00 EA				Cut C4P13 Pile to Top of			8/14/2020
M12000M2050000 (2007) (20	0 A 0	2 525 FA								Casilig			
quick delay delay delay delay and participant delay and participant delay dela	0				4.00 EA								
advance	0		54.350 EA	0.400 EA					Thread Casing C2P7		Template		8/18/2020
Bown SUCL By Reput Sub Control ACTION ACTION ACTION ACTION ACTION ACTION ACTION ACTION ACTION ACTION ACTION ACTION ACTION ACTION 	1		55.500 EA	1.150 EA			3.00 EA					& C3P13	8/19/2020
Attempted 80 minited as used with a long with	0		55.500 EA	0.000 EA						C3P12,	Thread Casing C1P7	Rows B2/C1, Bay 1	8/20/2020
Priority isonant         Cond Not Get Back-Up         Cond Not Get	0			0.150 EA						Removed Pilot Bit/DTH			8/21/2020
24/2 (20)         1000000000000000000000000000000000000	0 A 0	2.100 EA											
Nature protect to cert the order of the product of the pro	0		55.685 EA	0.035 EA					Cantingation		DTH Hammer to Work		8/24/2020
RAGE CONSIDER         Reserve Care         Price CP (2012) (2012)         Reserve Care         Re	0		55.720 EA	0.035 EA					Out C2P7, C3P12,		Hammer to Send Out for Repairs		8/25/2020
glammetric         Concentration         C	1		56.700 EA	0.980 EA		3.00 EA				Piles	C3P12,		8/26/2020
generations to cancer         Extensions to cancer         Results (2P7, CP12, 2, CP13,	0		56.838 EA	0.138 EA						to C2P7, C3P12, & C3P13 for		Piles to Grade	8/27/2020
8/29/200               0.000EA         57.530 A         1.500E           8/31/200         Waiting on DTH Hammer'ling         Relocate Main Dock Template         Prepare Drill for DTH Hammer Return         Unload 1E A 42"0"         Assist ECSFI with the Installation of 22         Sine	0		57.150 EA	0.313 EA	3.00 EA					Cut C2P7 Pile to Grade		Extensions to C2P7, C3P12, & C3P13	8/28/2020
8/31/200         Waiting on DTH Hammer to Return         Relocate Main Dock Template from Bents 2-3 to Bents 6-7         Prepare Drill for DTH Hammer Return         Unload 1E A 42*Øx SS' Casing         Assist ECSF with the Installation of 22 Timber Mats         Image State SS' Casing         Assist ECSF with the Installation of 22 Timber Mats         Image State SS' Casing         Image State SS' SS' Casing         Image State SS' SS' Casing	0 A 0	1.500 FA										_	
91/12020         Waiting on DTH Hammer Pitot Return         Relocate Materials and Equipment on Dock         Repaired Old Plywood Hole Coverings         Inspection of the RI 130/URCIAI Travel Leads         Inspection of the RI 1200/URCIAI Travel Leads         Inspecin of the RI 1200/URCIAI Travel Leads         Inspection	0							Installation of 22			Template		
9/2/2020       Unload DTH Hammer Pilot Bit       Assist ECSFI with the Installation of Timber Mats       Finish Switch from D-80 to CAS       CAS       Image: CAS <t< td=""><td>0</td><td></td><td>57.450 EA</td><td>0.000 EA</td><td></td><td></td><td></td><td></td><td>Inspection of the LR 1300 Vertical Travel</td><td></td><td></td><td>-</td><td>9/1/2020</td></t<>	0		57.450 EA	0.000 EA					Inspection of the LR 1300 Vertical Travel			-	9/1/2020
9/3/2020       Drilled Casings CEP14 (7P13, & C7P14)       Image: Cep14 C7P13, & C7P14       Image: Cep14 CP13, & C7P14       Image: Cep14, CP13, & C7P14 CP13, & C7P14       Image: Cep14, CP13, & C7P14 CP14, Cep13, & C7P14       Image: Cep14, CP13, & C7P14 CP14, Cep13, Cep13, CEp14, CP13, & C7P14 CP14, Cep13, Cep14, CP13, & C7P14 CP14, Cep13, Cep14, CP13, & C7P14 CP14, Cep14, Cep13, Cep14, CP13, & C7P14 CP14, Cep14, Cep14, Cep14, CP13, & C7P14 CP14, Cep14, Cep14, Cep14, Cep14, CP13, & C7P14 CP14, Cep14,	0		57.450 EA	0.000 EA					Leaus				9/2/2020
94/200       CPP13 & CP14       CP14 & CP14 Casing	1	<b></b>	57.800 EA	0.350 EA			1.00 EA			66		Drilled Casing C1P7	9/3/2020
9/7/200       MAGR DAY - DID NOT WORK       Image: mark mark mark mark mark mark mark mark	1		59.000 EA	1.200 EA			3.00 EA						9/4/2020
9/7/2000ABOR DAY - DID NOT WORDImage: Second	0 A 0	1.850 EA											9/5/2020 9/6/2020
9/2/020Drilled Casing CGP13 & CCP13 CGP13 CGP13 CGP13 CGP13 CGP14 CasingsDrive CGP14 PileImage: CGP13 C	0		59.000 EA	0.000 EA								LABOR DAY - DID NOT WORK	9/7/2020
9/9/2020         Continue to Muck Out C1P7, CGP13, C7P13, & C7P14, & C7P14, & C7P13, & C7P14 Piles         Drive C7P13 & C7P14 Piles         2.00 EA         D. 665 EA         60.550 EA         90.550 EA           9/10/2020         Continue to Muck Out CGP13 CLP7 & C6P13 Casings         Drive C1P7 Pile         1.00 EA         1.00 EA         0.350 EA         60.900 EA         90.655 EA         60.900 EA         61.400 EA         90.655 EA         60.900 EA         90.655 EA         61.400 EA         90.655 EA         61.400 EA         90.655 EA         61.400 EA         90.655 EA         61.400 EA         2.400 EA         90.000 EA         61.500 EA         90.000 EA         61.500 EA         2.400 EA         90.000 EA         61.500 EA         90.000 EA	1		59.885 EA	0.885 EA		1.00 EA	1.00 EA			Drive C6P14 Pile	С7Р13,	Drilled Casing C6P13	9/8/2020
9/10/200         C1P7 & C6P13 Casings         Diffe C1P7 He         Contract CP13 Casing         C1D R CP13 Casing <thc< td=""><td>1</td><td></td><td>60.550 EA</td><td>0.665 EA</td><td></td><td>2.00 EA</td><td></td><td></td><td></td><td>Drive C7P13 &amp; C7P14 Piles</td><td></td><td>C6P13, C7P13, &amp; C7P14</td><td>9/9/2020</td></thc<>	1		60.550 EA	0.665 EA		2.00 EA				Drive C7P13 & C7P14 Piles		C6P13, C7P13, & C7P14	9/9/2020
9/11/2000         Continue to Muck Out CGP13         Drive CGP13 Pile         CCP14         Piles to Top of Casing         100 EA         100 EA         0.500 EA         61.400 EA           9/12/200 <td< td=""><td>1</td><td></td><td>60.900 EA</td><td>0.350 EA</td><td></td><td>1.00 EA</td><td></td><td></td><td></td><td></td><td>Drive C1P7 Pile</td><td></td><td>9/10/2020</td></td<>	1		60.900 EA	0.350 EA		1.00 EA					Drive C1P7 Pile		9/10/2020
9/11/2020         Extract C7P13 Casing         H-Pile Extraction - Day 1 of 3         Image: Control of the control of th	1					1.00 EA				C7P14	Drive C6P13 Pile		9/11/2020
9/14/2020 Began Notching Piles & Prepared Casings for Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extraction - Day 1 of 3 Extract C7P13 Casing H-Pile Extract C7P13 Ca	0 A 0	2.400 EA											
	0				1.00 EA					H-Pile Extraction - Day 1 of 3	Extract C7P13 Casing	Prepared Casings for	
9/15/2020 Extract C6P13 & C6P14 Casings H-Pile Extraction - Day 2 of 3 2.00 EA 0.200 EA 0.200 EA 0.200 EA 0.200 EA	0		61.700 EA	0.200 EA	2.00 EA					H-Pile Extraction - Day 2 of 3	Extract C6P13 & C6P14 Casings		9/15/2020
9/16/2020         CCP13, C6P14, C7P13, & C7P14         Relocated Template to Row C2, Bents 8 & 9         H-Pile Extraction - Day 3 of 3         Unload 4 EA 36"Ø x 98' Piles         E         E         SOURCE         62.200 EA	0		62.200 EA	0.500 EA						H-Pile Extraction - Day 3 of 3	Relocated Template to	C7P14	9/16/2020
9/17/2020 Drilled Casings C&P12, C&P13, & C9P8 Cut C1P7 Pile to Grade Unload 1 EA 42"Ø x 55" Casing from Little Creek Yard Casing from Little Creek	1		63.300 EA	1.100 EA			3.00 EA			Casing from Little Creek	Cut C1P7 Pile to Grade	Drilled Casings C8P12,	9/17/2020
9/18/2020 <b>NO WORK DUE TO WEATHER (1) (2) (3) </b>	0		63.300 EA	0.000 EA									9/18/2020
9/19/2020 0.000 EA 63.300 EA 9/20/2020 0.000 EA 63.300 EA 1.900 E	0 A 0	1.900 EA	63.300 EA 63.300 EA	0.000 EA 0.000 EA									9/19/2020 9/20/2020

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		-								
9/21/2020	Drilled Casing C10P7	Begin to Muck Out C8P12, C8P13, C9P8, & C10P7 Casings		1.00 EA			0.535 EA	63.835 EA		1
9/22/2020	Continue to Muck Out C8P12, C8P13, C9P8, & C10P7 Casings						0.105 EA	63.940 EA		0
9/23/2020	Drive C8P12, C8P13, C9P8, & C10P7 Piles	Cut C8P12, C8P13, C9P8, & C10P7 Piles to Top of Casing			4.00 EA		1.410 EA	65.350 EA		1
9/24/2020	Load Out Drilling Equipm	ent, Materials, & Demob					0.000 EA	65.350 EA		0
9/25/2020	Load Out Drilling Equipm	ent, Materials, & Demob					0.000 EA	65.350 EA		0
9/26/2020							0.000 EA	65.350 EA		0
9/27/2020							0.000 EA	65.350 EA	2.050 EA	0
9/28/2020	Extract C8P12, C8P13, & C9P8 Casings	Cut C8P12 & C8P13 Piles to Grade				3.00 EA	0.325 EA	65.675 EA		0
9/29/2020	Cut C9P8 & C10P7 Piles to Grade	Disassemble Casing Advancement Template; Load Out					0.025 EA	65.700 EA		0
9/30/2020	Disassemble Berminghammer Leads						0.000 EA	65.700 EA		0
10/1/2020	Extract C10P7 Casing					1.00 EA	0.100 EA	65.800 EA		0
10/2/2020	Extract C1P7 & C7P14 Casings					2.00 EA	0.200 EA	66.000 EA	0.650 EA	0
10/3/2020							0.000 EA	66.000 EA		0
							Total D	ays of Pile In	stallation:	64

A detailed description of the construction activities for which takes were authorized may be found in the Federal Register notice of proposed IHA for the 2020 authorization (84 FR 64848; November 25, 2019). The location, timing (e.g., seasonality), and nature of the pile driving operations, including the type and size of piles and the methods of pile driving, that will be analyzed in the 2021 IHA Renewal Request are identical to those analyzed in the current 2020 IHA.

#### 4.2 Marine Species Observed in the Project Area

During the 2020 construction window, MMOs were on site for 108 days to observe both upland and in-water pile driving activities. Of those 108 days, only 64 were used for in-water pile driving activities. At no time during both upland and in-water pile driving did MMOs observe Level A or Level B harassment exposures to marine mammals.

Table 2, details the allowable NOAA authorized takes under the March 10, 2020 IHA, documented take and the actual marine mammal sighting that occurred. Table 3 identifies each sighting that occurred. Corresponding MMO "Daily Protected Species Sighting & Shut-Down Form" can be found in Appendix A.

Species	Stock	Authorized Level A Takes	Authorized Level B Takes	Documented # of Species Sighted (Mar. 20- Oct. 2, 2020)	Documented 2020 Level A Takes	Documented 2020 Level B Takes
Humpback whale	Gulf of Maine	0	12	0	0	0
Harbor porpoise	Gulf of Maine/Bay of Fundy	5	7	0	0	0
	WNA Coastal, Northern Migratory	142	14,095			
Bottlenose dolphin	WNA Coastal, Southern Migratory	142	14,095	100	0	0
	NNCES	2	198			
Harbor seal	Western North Atlantic	1,296	2,124	0	0	0
Gray seal	Western North Atlantic	1	3	0	0	0

 Table 2- Takes Authorized in 2020 IHA and Take Documented by Species in the 2020 IHA

 Construction Window

Date:	Species Observed:	QTY Observed:	Location Observed:	Associated Take:
4/5/2020	Bottlenose Dolphin	3	West of Channel on PI 1	NA
4/11/2020	Bottlenose Dolphin	16	West of Channel on PI 1	NA
5/15/2020	Bottlenose Dolphin	3	North of Channel on PI	NA
6/25/2020	Bottlenose Dolphin	4	North of Channel on PI 1	NA
6/25/2020	Bottlenose Dolphin	1	SW of PI 1	NA
7/22/2020	Bottlenose Dolphin	9	West of Channel on PI 1	NA
8/8/2020	Bottlenose Dolphin	6	N& W of PI 1	NA
8/10/2020	Bottlenose Dolphin	3	NW of PI 1	NA
8/10/2020	Bottlenose Dolphin	6	SW of PI 1	NA
8/11/2020	Bottlenose Dolphin	5	East of PI 1	NA
8/11/2020	Bottlenose Dolphin	4	North of PI 1	NA
8/11/2020	Bottlenose Dolphin	1	W/ NW of PI 1	NA
8/12/2020	Bottlenose Dolphin	3	N of PI 1	NA
8/13/2020	Bottlenose Dolphin	2	N of PI 1	NA
8/24/2020	Bottlenose Dolphin	7	E of PI 1	NA
8/25/2020	Bottlenose Dolphin	1	NW of PI 1	NA
8/25/2020	Bottlenose Dolphin	2	NE of PI 1	NA
8/26/2020	Bottlenose Dolphin	3	NW of PI 1	NA
8/26/2020	Bottlenose Dolphin	9	SW of PI 1	NA
8/28/2020	Bottlenose Dolphin	12	NE of PI 1	NA
Total D	olphin Sightings:	100	Total Dolphin Takes:	0

Table 3- Occurrence of Marine Mammals Observed

Since Level A or Level B harassment exposures to marine mammals have occurred, the subset of Level A and Level B takes remaining from the 2020 IHA authorization will be sufficient to cover the 2021 pile installation and removal activities in the CTJV's 2021 Renewal Request.

# 5. MITIGATION MEASURES

### 5.1 GENERAL CONSTRUCTION MITIGATION

The Project followed the guidance of NOAA's March 10, 2020 issued IHA Mitigation Measures. These measures include:

- For in-water construction heavy machinery activities other than pile driving (*e.g.*, use of barge-mounted excavators, or dredging), if a marine mammal comes within 10 m, CTJV must cease operations and reduce vessel speed to the minimum level required to maintain steerage and safe working conditions.
- CTJV is required to conduct briefings for construction supervisors and crews, the monitoring team, and CTJV staff prior to the start of all pile driving activity, and when new personnel join the work, in order to explain responsibilities, communication procedures, the marine mammal monitoring protocol, and operational procedures.
- CTJV is required to employ between two and four MMOs per the activity as outlined in the issued March 10, 2020 IHA.
- Marine mammal monitoring must take place from 30 minutes prior to initiation of pile driving activity through 30 minutes post-completion of pile driving activity. Pre-activity monitoring must be conducted for 30 minutes to ensure that the shutdown zone is clear of marine mammals, and pile driving may commence when observers have declared the shutdown zone clear of marine mammals. In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone, animals shall be allowed to remain in the shutdown zone (*i.e.*, must leave of their own volition) and their behavior shall be monitored and documented.

CTJV must establish shutdown zones at the following distances:

- i. 100 meters for harbor porpoise and bottlenose dolphin.
- ii. 15 meters for harbor seal and gray seal.
- iii. For humpback whales isopleths in low-frequency cetaceans, depending on activity type, has a shutdown zone between 90- 2,920 meters.
- If a marine mammal enters or is observed within an established shutdown zone pile driving must be halted or delayed. Pile driving may not commence or resume until either the animal has voluntarily left and been visually confirmed beyond the

shutdown zone or 15 minutes have passed without subsequent detections of the animal.

- Should environmental conditions deteriorate such that marine mammals within the entire shutdown zone would not be visible (e.g., fog, heavy rain), pile driving and removal must be delayed until the MMO(s) is confident marine mammals within the shutdown zone could be detected.
- CTJV must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. A soft start must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of thirty minutes or longer.
- CTJV must use an air bubble curtain system during impact pile driving of steel pipe piles. Bubble curtains must meet the following requirements:
  - i. The bubble curtain must distribute air bubbles around 100 percent of the piling perimeter for the full depth of the water column.
  - The lowest bubble ring must be in contact with the mudline and/or rock bottom for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent mudline and/or rock bottom contact. No parts of the ring or other objects shall prevent full mudline and/or rock bottom contact.
  - iii. The bubble curtain must be operated such that there is proper (equal) balancing of air flow to all bubblers.
  - iv. CTJV must employ the bubble curtain during impact pile driving of all steel piles in water depths greater than 3 m (10 ft.).
  - CTJV must establish Level A harassment and B harassment monitoring zones as.

If a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized takes are met, is observed entering or within the monitoring zones outlined in March 10, 2020 IHA, pile driving activities must shut down immediately using delay and shutdown procedures. Activities must not resume until the animal has been confirmed to have left the area or the 15 minute observation time period has elapsed.

Appendix A:

# 2020 Marine Mammal Monitoring Plan

# Marine Mammal Monitoring Plan for the Parallel Thimble Shoal Tunnel Project

Prepared by:



Chesapeake Tunnel Joint Venture 2377 Ferry Road Virginia Beach, Virginia 23455

Submitted to:

National Marine Fisheries Service Office of Protected Resources 1315 East-West Highway Silver Spring, Maryland 20910-3226

March 2020

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# ACRONYMS AND ABBREVIATIONS

- CT JV Chesapeake Tunnel Joint Venture
- DTH Down the Hole

ft feet

GPS Global Positioning System

IHA	Incidental Harassment Authorization
MHW	Mean High Water
MLW	Mean Low Water
MMMP	Marine Mammal Monitoring Plan
NOAA NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
Nos.	Numbers
PTS	Permanent Threshold Shift
PTST	Parallel Thimble Shoal Tunnel
SOE	Support of Excavation
TBM	Tunnel boring machine
ZOI	Zone of impact

# 1. INTRODUCTION

The Parallel Thimble Shoal Tunnel (PTST) Project consists of the construction of a two-lane parallel tunnel to the west of the existing Thimble Shoal Tunnel, connecting Portal Island Numbers (Nos.) 1 and 2 (Figure 1). Upon completion, the new tunnel will carry two lanes of southbound traffic and the existing tunnel will remain in operation and carry two lanes of northbound traffic. The 6,525 linear feet (ft) of new tunnel will be constructed using a tunnel boring machine (TBM), with 5,356 linear ft located below Mean High Water (MHW).

Pile driving during construction of the PTST Project has the potential to cause sound levels that exceed Level A and Level B acoustic harassment thresholds for marine mammals as defined by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries) Office of Protected Resources (NOAA Fisheries 2016).

During a 12-month construction period extending from September 2019 through August 2020 (Table 1), up to 130 hollow steel piles measuring 36 inches in diameter will be installed to support a temporary dock at Portal Island No. 1. Of these, 64 will be placed in-water and 47 will be placed upland (above the Mean High Water [MHW] line). Up to 30 hollow steel piles (36-inch diameter) will be installed to provide mooring facilities on the west side of the portal islands (a total of 6 dolphin moorings comprised of 5 piles each).

Construction will also include two temporary Omega trestles, each with 28 in-water and 8 upland piles, for a total of 36, 36-inch hollow steel pipe piles offset to the west side of each engineered berm and extending channelward from Portal Island Nos. 1 and 2, respectively. In-water pile driving activities, will also include installation of o-piles for berm Support of Excavation (SOE) walls at each portal island. Up to a total of 488 36-inch diameter hollow steel interlocked piles will be installed in-water for the SOE walls. There will also be driving of landside sheet pile on Portal Island No. 1 to construct the holding bins (muck bin) for excavated tunnel material and to support tunnel excavation activities.

# Table 1. Authorized Amount of Taking, by Level A Harassment and Level B Harassment, by species and stock

Species	Stock	Level A Takes	Level B Takes 12	
Humpback whale	Gulf of Maine			
Harbor porpoise	Gulf of Maine/Bay of Fundy	5	7	
	WNA Coastal, Northern Migratory	142	14,095	
Bottlenose dolphin	WNA Coastal, Southern Migratory	142	14,095	
	NNCES	2	198	
Harbor seal	Western North Atlantic	1,296	2,124	
Gray seal	Western North Atlantic	1	3	

The Chesapeake Tunnel Joint Venture (CTJV) has submitted an Incidental Harassment Authorization (IHA) application to request takes for four species: harbor seals (*Phoca vitulina*), gray seals (*Halichoerus grypus*), bottlenose dolphin (*Tursiops* spp.), and humpback whales (*Megaptera novaeangliae*) by Level B harassment. Fin whales (*Balaenoptera physalus*), North Atlantic right whales (*Eubalaena glacialis*), and harbor porpoise (*Phocoena phocoena*) are expected to be rare in the PTST Project Area, and no takes have been requested for these species. Pile and sheet pile driving operations will cease if any marine mammal species enters the Level A Shutdown Zones (Section 3) or if fin whales, humpback whales, North Atlantic right whales, and harbor porpoise are observed in the level B monitoring zones (Section 3). No takes are requested for airborne noise associated with on-land pile driving. Prior to the issuance of the IHA, pile driving on Portal Islands will cease if gray or harbor seals are observed entering the Level B airborne noise monitoring zone associated with these activities. Takes requested are summarized in Table 2.

Scenario		Level A Harassment Zones				Level B
		Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocid Pinnipeds	Monitoring Zones
Driving Type	Pile Type	Island 1 & 2	Island 1 & 2	Island 1 & 2	Island 1 & 2	Island 1 & 2
Impact	12-in. Timber	90	2221	105		25
	36-in. Steel	2,920	105	3,480	1,565	1,585
Impact with Bubble Curtain	36-in. Steel	1,000	5.0 <b></b>	1,190	535	545
DTH – Impulsive	42-in. Steel	970	122	1,155	520	215
DTH Simultaneous at same island	42-in. Steel	1,535		1,830	825	215
DTH & Impact Hammer with bubble curtain: Simultaneous at the same island	36-and 42-in. Steel	1,970	-	2,400	1,055	545

#### Table 2. Level A and B Harrassment Monitoring Zones During Project Activities (meters)

DTH at PI 1. And Impact with Bubble Curtain Hammer at PI 2	36-and 42-in. Steel	970	-	1,155	520	215 from PI 1 545 from PI 2
Continuous (Vibratory)	12-in. Timber	37 <u>10</u>	<u>111</u> -1	0225	1 <u>200</u> 72	1,360
	36-in. Steel	20	-			21,545
	42- in.** Steel	20		1.12	-	21,545

-- indicates that shutdown zone is larger than calculated harassment zone.

\*\*Activity only planned at Portal Island 1 as part of project pile driving plan.

Level A Shutdown Zones and B Zones of Impact (ZOI) are calculated based on the type of activity occurring and the hearing frequency of the marine mammal. Animals that may inhabit or pass through the area of construction are classified within the following hearing frequencies:

#### High Frequency Cetacean:

• Harbor Porpoise (*Phocoena phocoena*)

#### Mid-Frequency Cetacean:

• Bottlenose Dolphins (*Tursiops spp.*)

#### Low Frequency Cetacean:

- Baleen Whales:
  - Fin Whale (Balaenoptera physalus)
  - Humpback Whale (*Megaptera novaeangliae*)
  - North Atlantic Right Whale (*Eubalaena glacialis*)

#### Phocid Pinnipeds:

- Harbor Seals (*Phoca vitulina*)
- Gray Seals (*Halichoerus grypus*)

This PTST Marine Mammal Monitoring Plan (MMMP) proposes a protocol for monitoring marine mammals during round pile and sheet pile driving activities in the Project Area. The goal of this MMMP is to prevent unauthorized Level A or Level B takes and to minimize Level B harassment using clearly defined methods for monitoring and shutdown procedures during construction. Incidents of harassment and construction shutdown events will be recorded and reported.

# 2. METHODS

# 2.1 MONITORING PROCEDURES

The CTJV, the design-build contractor for the PTST Project, proposes the following MMMP procedures:

- Use of marine mammal observers during pile and sheet pile driving activities. Observers will meet the criteria defined in Section 2.2.
- Monitoring distances, in accordance with the Level A Shutdown Zone and Level B ZOI identified in Section 3, will be determined by using a range finder, scope, hand-held global positioning system (GPS) device or landmarks with known distances from the monitoring positions. Monitoring locations will be based on land at either Portal Island No. 1 or Portal Island No. 2.
- If the entire Level B monitoring zone is not visible, pile driving activities may continue, and the number of individual listed animals within the Level B zone will be estimated and recorded. Estimated numbers of individuals will be extrapolated by dividing the number of observed individuals by the percentage of the monitoring zone that was visible.
- Zones will be monitored for the presence of marine mammals 30 minutes before, during, and 30 minutes after any pile driving activity. Observers will scan the waters within the area of potential sound effects using binoculars (10X42 or similar) or spotting scopes (20-60 zoom or equivalent), and make visual observations.
- Monitoring will be continuous unless the contractor takes a break longer than 2 hours from active pile and sheet pile driving, in which case, monitoring will be required 30 minutes prior to restarting pile installation.
- If marine mammals are observed, their location within the zones, and their reaction (if any) to pile activities will be documented.
- If a marine mammal crosses into the designated ZOIs for that species, additional monitoring or a temporary stop to pile driving activity will occur, in accordance with the procedures outlined in Section 5 of this Monitoring Plan.
- If weather or sea conditions restrict the observer's ability to observe, or become unsafe, pile installation will be suspended until conditions allow for monitoring to resume.
- For in-water pile driving, under conditions of fog or poor visibility that might obscure the presence of a marine mammal within the shutdown zone, the pile in progress will be completed and then pile driving suspended until visibility conditions improve. Visibility will be confirmed and approved by the MMO at the beginning of the shift. Likewise, the certified MMO will determine the number of observers needed to cover the ZOI based on

the visibility conditions anticipated for the following shift and their best professional judgement call.

Monitoring will occur year-round, during pile driving operations, because some marine mammal species have the potential to be present at any time of the year.

# 2.2 **OBSERVER QUALIFICATIONS**

The CTJV will employ NOAA Fisheries-approved marine mammal observers to monitor Level A Shutdown Zones and Level B ZOI. These individuals will be independent (i.e., not construction personnel) trained biologists with:

- Visual acuity in both eyes sufficient to see moving objects on the water's surface; ability to estimate object size and distance.
- The ability to make visual field observations and collect data as described in the protocol.
- Experience or training with identifying marine mammals in the field.
- Sufficient training, orientation or experience with the construction operation to provide for personal safety during observations.
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.
- Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).
- The ability to prepare a status report of monitoring activities that describes the species and number of individuals observed, dates and times of construction activities; dates of when construction activities were ceased or shutdown to avoid Level A harassment to any species or Level B harassment for any species for that the PTST Project is not authorized to take.

If only one marine mammal observer is needed, this individual will have prior experience with observing marine mammals in the field. If teams of two or more observers are needed, one observer will be designated as the lead observer. The lead observer will have prior experience working as a marine mammal observer, and additional observers may substitute education or training for experience.

# **2.3 DATA COLLECTION**

Marine mammal observers at the PTST Project Area will use Observation Record Forms approved by NOAA. An observation record will be completed by each observer for each location and day of survey.

The following data will be included in the observation records:

- Date and time that in-water or upland round pile or sheet pile driving/installation begins and/or ends;
- Sea state using the Beaufort Wind Force Scale and weather including percent cloud cover, percent glare, visibility;
- Species, numbers of individuals, and when possible the sex and age class of observed marine mammals;
- Pile driving or sheet pile activities occurring during each sighting;
- Behaviors exhibited by observed marine mammals, including bearing and direction of travel, and behavioral responses to soft-start and shutdown procedures;
- Location of marine mammal, distance from observer to marine mammal, and distance from the pile driving activities to the marine mammal.
- Whether the observation required implementation of shutdown procedures and the duration of each shutdown;
- Other human activity in the area such as fishing or transit of navy or cargo ships in the navigation channel. Hull numbers of fishing, cargo, or navy vessels will be recorded if possible.

# 2.4 EQUIPMENT

Marine mammal observers will have the following equipment available during monitoring:

- Binoculars
- Range finder
- Logbook
- Cell phone or other wireless communication
- GPS Unit (for all vessel based observations, if implemented).

# 3. LEVEL A AND LEVEL B MONITORING ZONES

Impact hammer and Down-the-hole (DTH) drill will be used to install hollow steel and king piles. Above Mean High Water, sheet piles will be installed using a vibratory and impact hammer. No airborne sound data were available for impact driving of King Piles and Sheet Piles to determine in-air Level B monitoring zones and therefore, the Level B ZOI for impact driving of the hollow steel pile should be followed during such activity. The Level B ZOI will remain constant in size through the daily pile driving activities. The Level A Shutdown Zones will depend on the duration of pile driving activity and the presence of marine mammals per 24-hour period. For impact driving, up to 3 piles will be driven per 24-hour period using the following adaptive monitoring approach: Monitoring will begin each day using the 3-hour (i.e., 3-pile) Level A Shutdown Zone. If after the first pile is driven, no marine mammals have been observed in the Level A Shutdown Zone, then the Level A Shutdown Zone will reduce to the 2-hour Zone.

If no marine mammals are observed within the 2-hour Level A Shutdown Zone during the driving of the second pile, then the Level A Shutdown Zone will reduce to the 1-hour Zone. However, if a mammal is observed entering the 3-hour Level A Shutdown Zone during the driving of the first pile, then the 3-hour Level A Shutdown Zone will be monitored for the remainder of pile driving activities for that day. Likewise, if a marine mammal is observed within the 2-hour Shutdown Zone, then the 3-hour Level A Shutdown Zone will be monitored for the remainder of pile driving activities for that day.

The monitoring zone sizes for Level A (shutdown) depend on the number of piles to be driven each day and whether simultaneous pile driving will occur. For this Project, simultaneous pile driving refers to one hammer operating on each Portal Island or two hammers operating on the same island.

# 4. **OBSERVER LOCATIONS**

Marine mammal observers will be located on Portal Island Nos. 1 and 2.

# 5. **RESPONSE TO OBSERVED MARINE MAMMALS**

# 5.1 OBSERVATIONS OF HEALTHY MARINE MAMMALS

If a whale or harbor porpoise is observed entering the Level A or Level B monitoring zones, the observer will directly contact the construction supervisor to indicate that pile driving needs to be stopped immediately. The observer will track the individual until it has left the Level A Shutdown Zone. After the whale or porpoise has been out of the Level A Shutdown Zone and B monitoring zones for 30 minutes, the observer will notify the construction supervisor that pile driving activities may resume.

If a seal or bottlenose dolphin enters the Level A Shutdown Zones, the observer will directly contact the construction supervisor to indicate that pile driving needs to be stopped immediately. The observer(s) tracks the individual until it has left the Level A Shutdown Zone. After the seal or dolphin has been out of the Level A Shutdown Zone for 30 minutes, the observer will notify the construction supervisor that pile driving activities may resume.

If a seal or bottlenose dolphin enters the Level B monitoring zone for in-water activities, the observer will record a take of the species observed. Each individual marine mammal will count once as a take in a 24-hour period. If a seal enters the Level B monitoring zone for in water or in-air pile driving activities the observer will record a take of the species observed. If the seal hauls out it or is recorded hauled out it is not recorded again in the reciprocal environment. The observer(s) will track the individual until it has left the Level B monitoring zone.

All observations and takes of marine mammals will be documented on observation forms and compiled records will be reported to NOAA in accordance with the reporting procedures described in Section 6.

## 5.2 OBSERVATIONS OF INJURED OR DEAD MARINE MAMMALS

If dead or dying marine mammals are observed in the monitoring zones, regardless of known cause, the observer(s) will:

- Record the species type (if known), date, time, and location of the observation,
- Take a photograph of the specimen, and
- Immediately notify NOAA Fisheries.

# 5.3 UNAUTHORIZED EXPOSURES

If an unauthorized exposure occurs (e.g., a marine mammal occurring in a Level A Shutdown Zone or Level B ZOI without an authorized take), the observer(s) will:

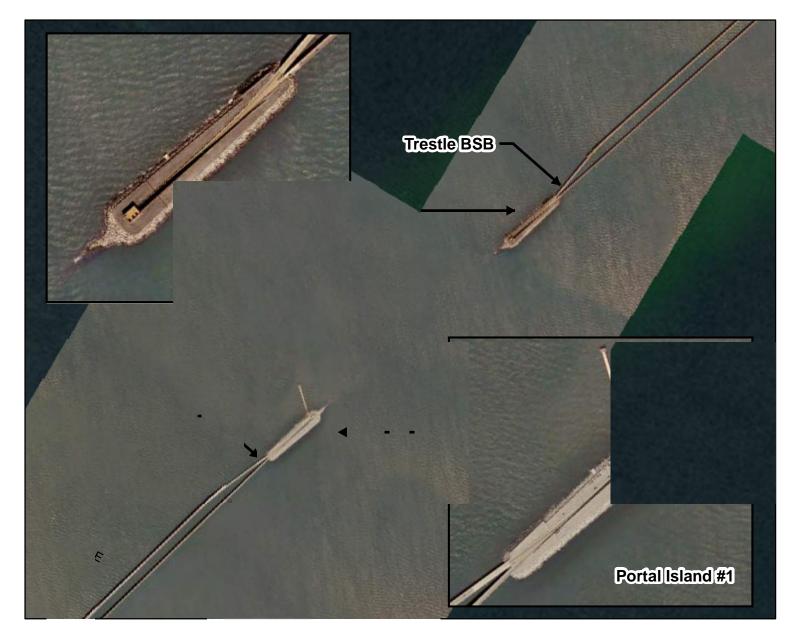
- Record the species type (if known), date, time, and location of the observation,
- Record any behavioral changes that occur during observation,
- Contact the construction manager to cease pile driving activity immediately, and
- Immediately notify NOAA Fisheries.

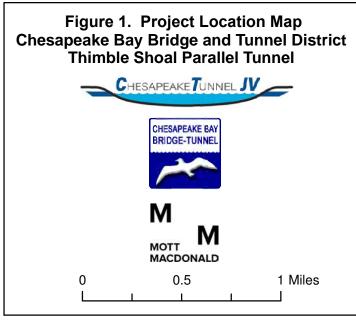
# 6. **REPORTING**

An annual report will be prepared and distributed to NOAA Fisheries once per calendar year that pile or sheet pile driving occurs. The report will be provided to NOAA Fisheries by December 31 of each year where a report is needed. This annual report will include an executive summary, monitoring methodology, tabulation of marine mammal observations (including number, type, and location of observations), dates and times when monitoring occurred, and pile driving was completed, and dates and times when in-water construction was suspended because of marine mammals.

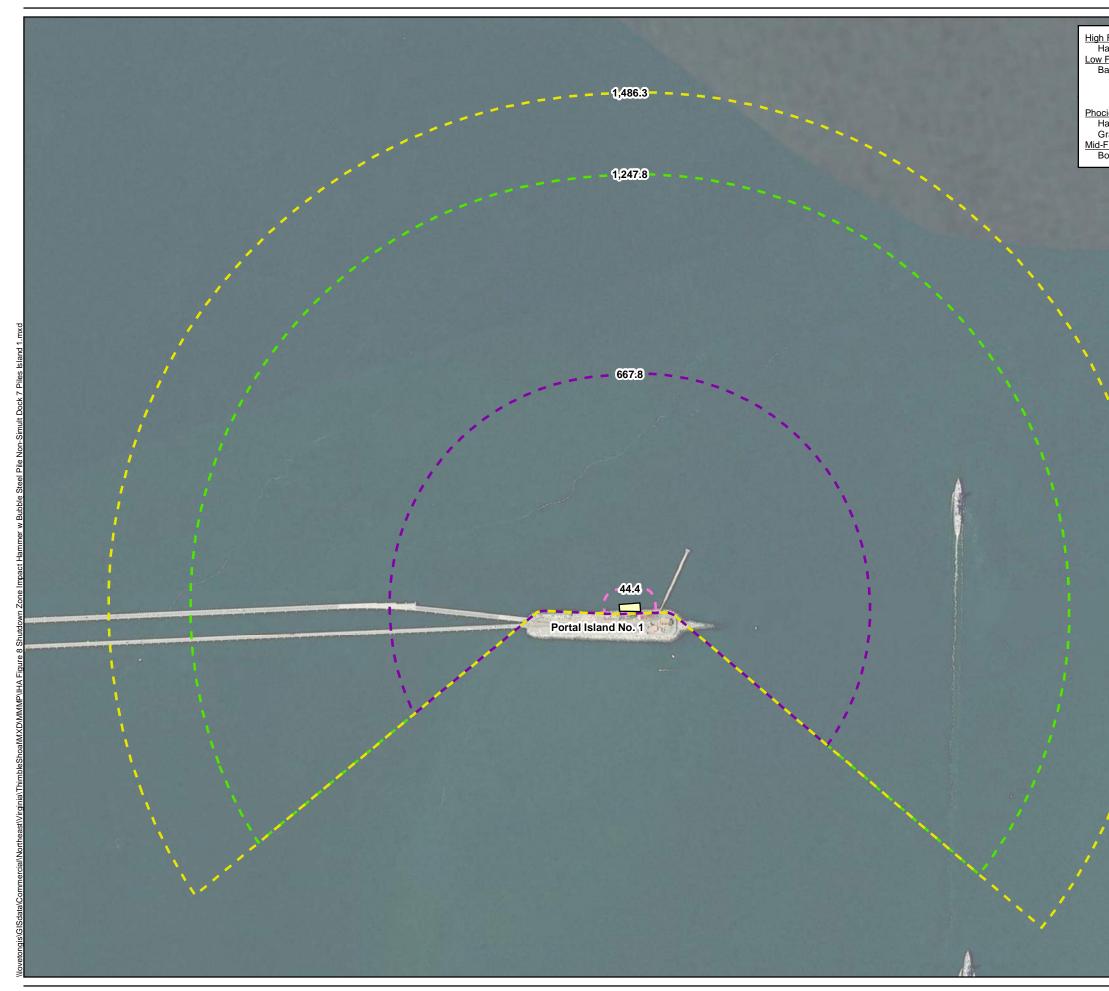
# 7. **REFERENCES**

NOAA. 2016. Underwater Acoustic Thresholds for Onset of Permanent and Temporary Threshold Shifts. Technical Memorandum NMFS-OPR-55.









High Frequency Cetacean: Harbor Porpoise Low Frequency Cetacean: Baleen Whales: Fin Whale Humpback Whale North Atlantic Right Whale Phocid Pinnipeds: Harbor Seals Gray Seals Mid-Frequency Cetacean: Bottlenose Dolphins



#### Legend

Temporary Dock

#### 7 Impact Piles per Day - Shutdown Zone

- 1,486.3 m High-Frequency Cetaceans
- 1,247.8 m Low-Frequency Cetaceans
- 667.8 m Phocid Pinnipeds
- 44.4 m Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2018, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet

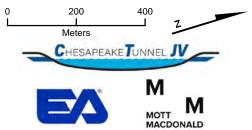
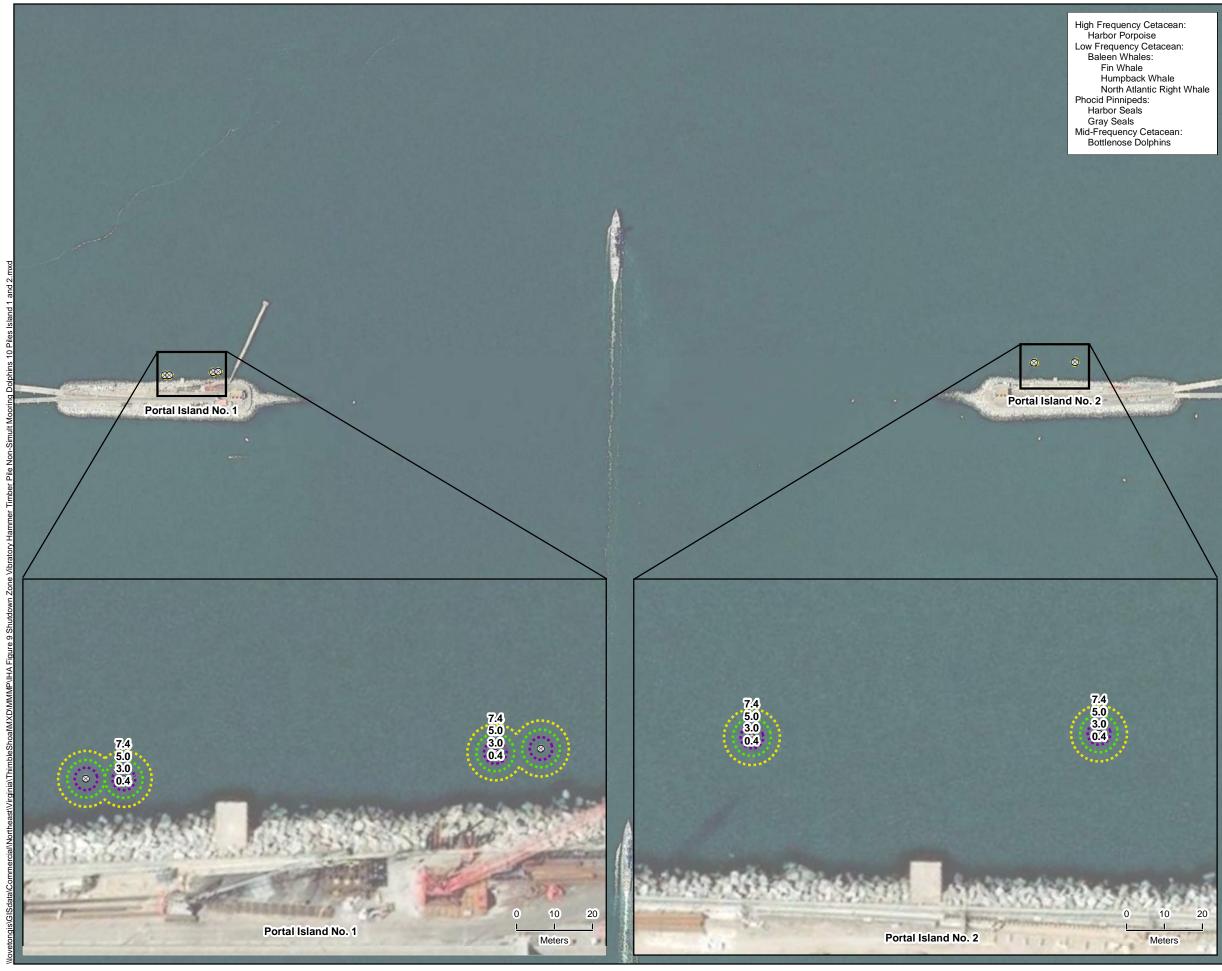


Figure 1 Distance (meters) to Shutdown Zone Using an Impact Hammer with Bubble Curtain for Non-Simultaneous 36- and 42-in Steel Pile Driving for the Temporary Dock – 7 Piles per Day at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

Mooring Dolphin

#### 10 Vibratory Piles per Day - Shutdown Zone

- 7.4 m High-Frequency Cetaceans
- 5.0 m Low-Frequency Cetaceans
- 3.0 m Phocid Pinnipeds
- 0.4 m Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2018, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Fee

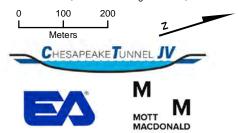


Figure 2 Distance (meters) to Shutdown Zone Using a Vibratory Hammer for Non-Simultaneous Timber Pile Driving for the Mooring Dolphins – 10 Piles per Day at Portal Island Nos. 1 and 2 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

Temporary Dock

#### 10 Vibratory Piles per Day - Shutdown Zone

- 63.8 m High-Frequency Cetaceans
- 43.2 m Low-Frequency Cetaceans
- 26.2 m Phocid Pinnipeds
- 3.8 m Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2018, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet

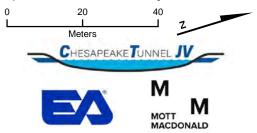
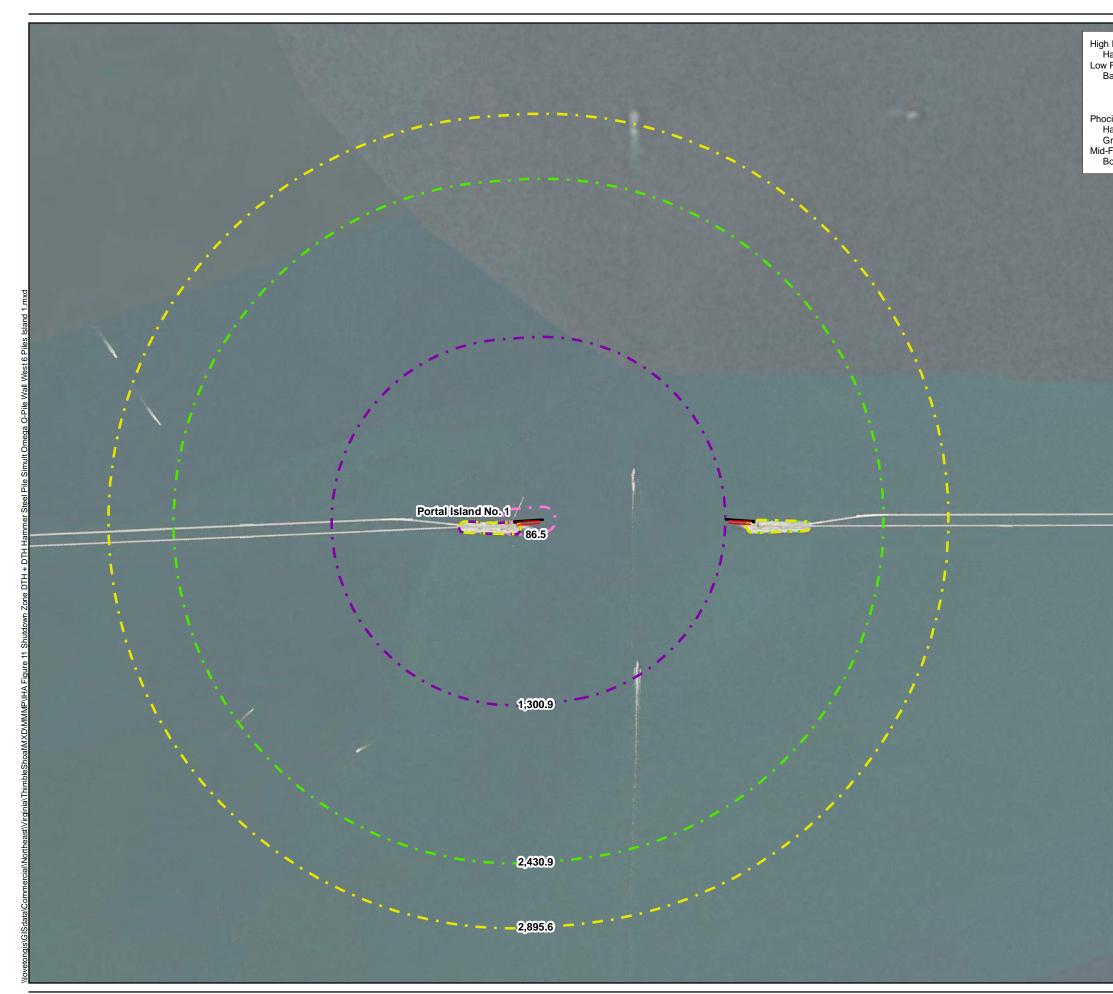
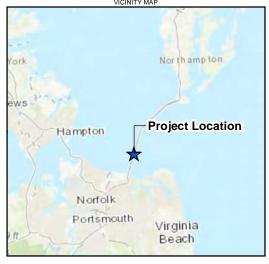


Figure 3 Distance (meters) to Shutdown Zone Using a Vibratory Hammer for Non-Simultaneous 36- and 42-in Steel Pile Driving for the Temporary Dock – 10 Piles per Day at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

- O-Pile Wall
- Omega Trestle

#### 6 Down-the-Hole Piles per Day - Shutdown Zone

- 2,895.6 m High-Frequency Cetaceans 2,895.6 m - High-Frequency Cetaceans 2,430.9 m - Low-Frequency Cetaceans 1,300.9 m - Phocid Pinnipeds

- 72 86.5 m - Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2017, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet

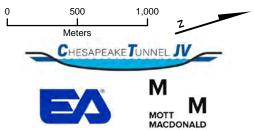
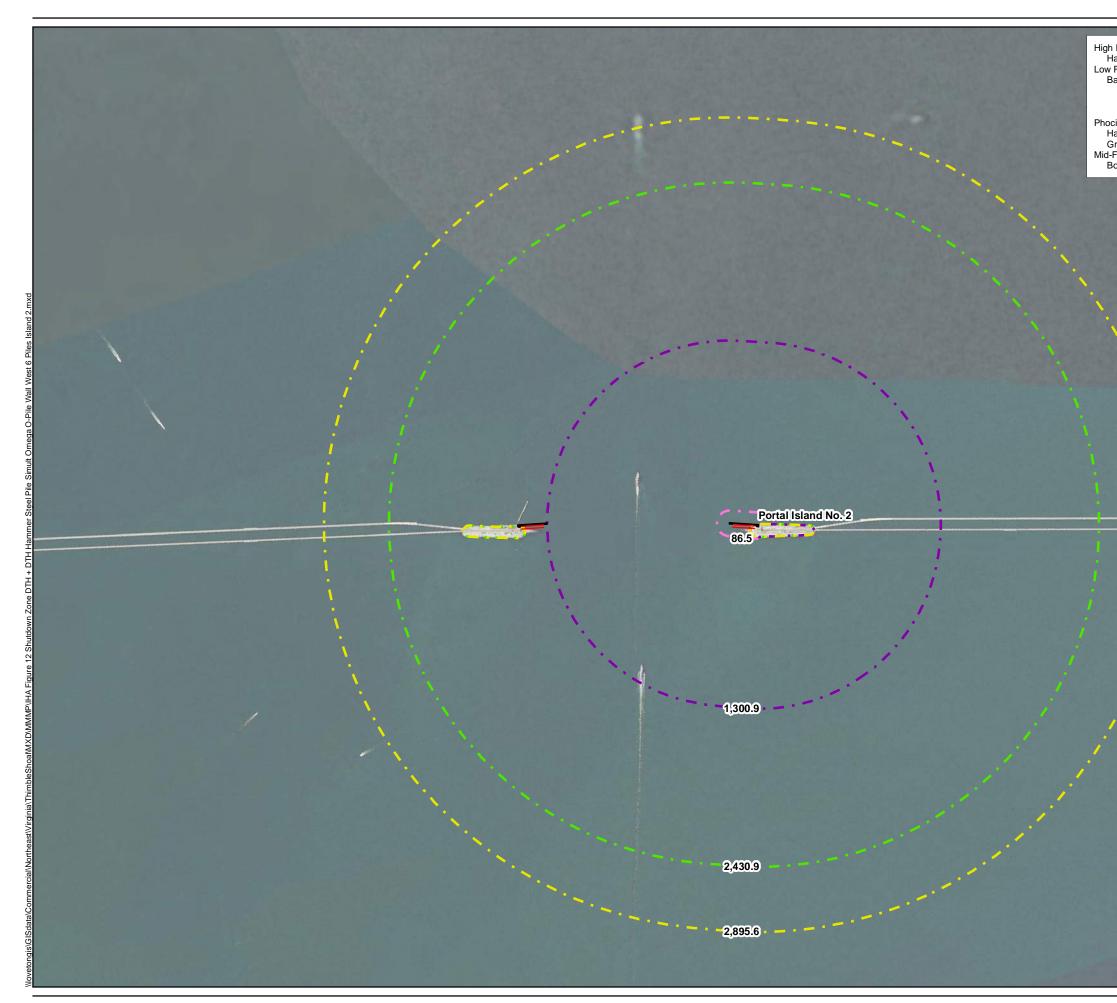


Figure 4 Distance (meters) to Shutdown Zone Using Two Down-the-Hole Hammers for Simultaneous 36- and 42-in Steel Pile Driving for the Omega Trestle/West O-Pile Wall/ Mooring Piles and Templates - 6 Piles per Day at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

- O-Pile Wall
- Omega Trestle

#### 6 Down-the-Hole Piles per Day - Shutdown Zone

- 2,895.6 m High-Frequency Cetaceans
- 2,895.6 m High-Frequency Cetaceans 2,430.9 m Low-Frequency Cetaceans
- 1,300.9 m Phocid Pinnipeds
- 72 86.5 m - Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2017, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feel

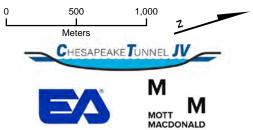
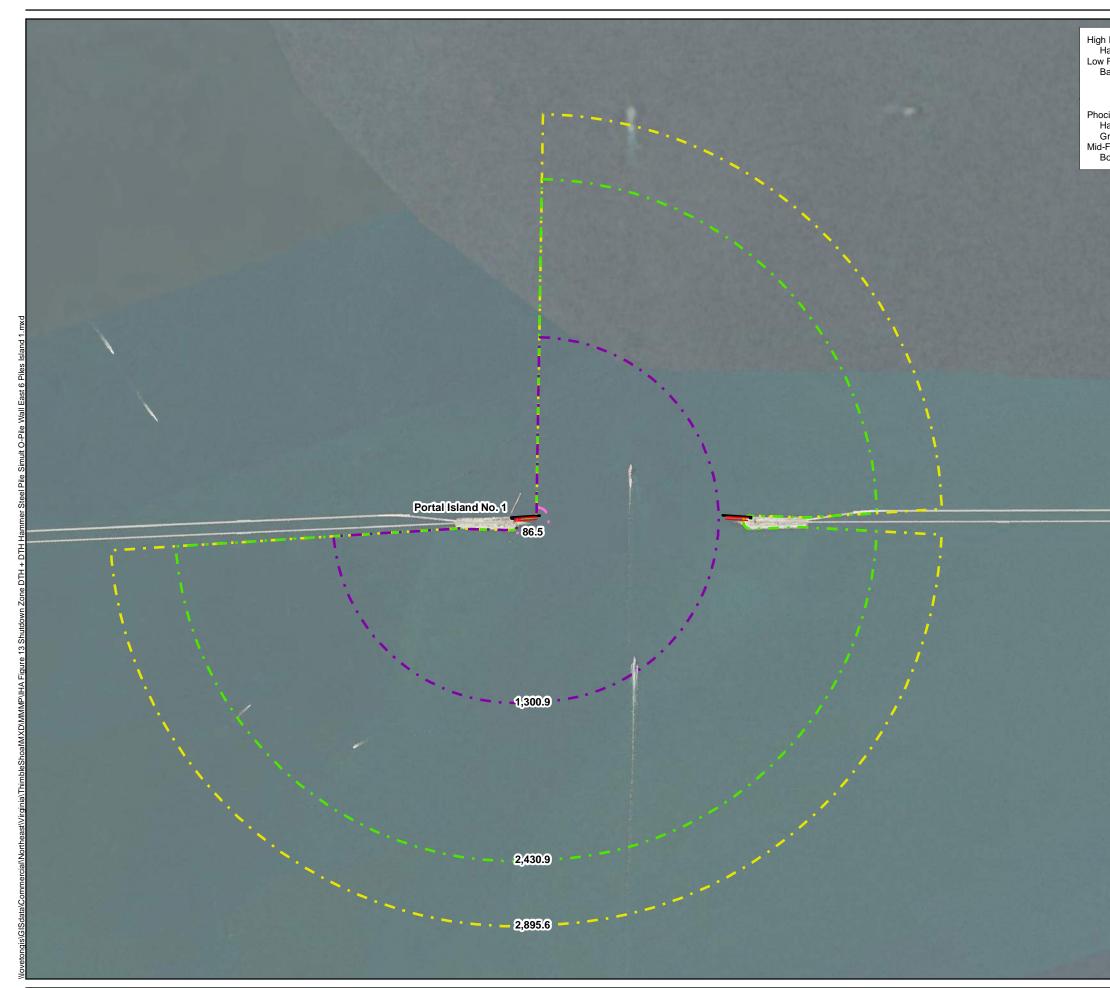
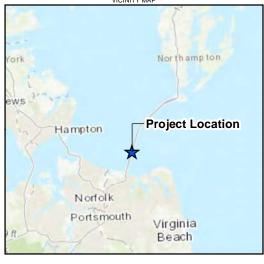


Figure 5 Distance (meters) to Shutdown Zone Using Two Down-the-Hole Hammers for Simultaneous 36- and 42-in Steel Pile Driving for the Omega Trestle/West O-Pile Wall/ Mooring Piles and Templates - 6 Piles per Day at Portal Island No. 2 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

- O-Pile Wall
- Omega Trestle

#### 6 Down-the-Hole Piles per Day - Shutdown Zone

- 2,895.6 m High-Frequency Cetaceans 2,430.9 m Low-Frequency Cetaceans 1,300.9 m Phocid Pinnipeds 2,895.6 m - High-Frequency Cetaceans

- 86.5 m Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2017, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet

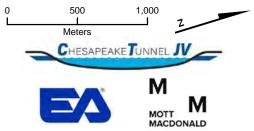


Figure 6 Distance (meters) to Shutdown Zone Using Two Down-the-Hole Hammers for Simultaneous 36- and 42-in Steel Pile Driving for the East O-Pile Wall – 6 Piles per Day at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

- O-Pile Wall
- Omega Trestle

#### 6 Down-the-Hole Piles per Day - Shutdown Zone

- 2,895.6 m High-Frequency Cetaceans
- 2,895.6 m High-Frequency Cetaceans
  2,430.9 m Low-Frequency Cetaceans
  1,300.9 m Phocid Pinnipeds
- 86.5 m Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2017, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feel

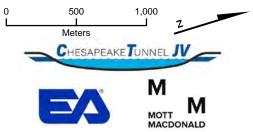
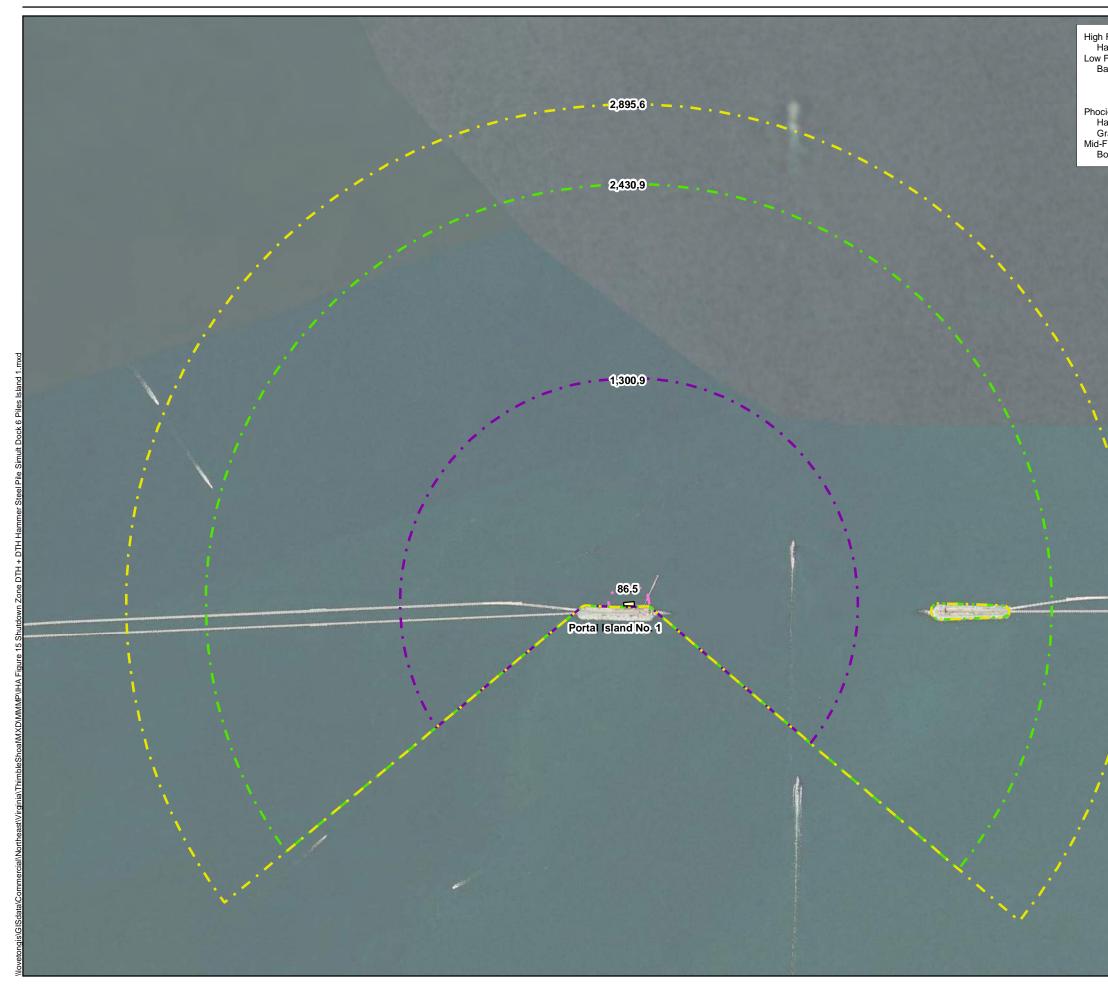


Figure 7 Distance (meters) to Shutdown Zone Using Two Down-the-Hole Hammers for Simultaneous 36- and 42-in Steel Pile Driving for the East O-Pile Wall – 6 Piles per Day at Portal Island No. 2 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

Temporary Dock

#### 6 Down-the-Hole Piles per Day - Shutdown Zone

- 2,895.6 m High-Frequency Cetaceans ÷ -
- 2,430.9 m Low-Frequency Cetaceans 1,300.9 m Phocid Pinnipeds
- 72 86.5 m - Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2018, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feel

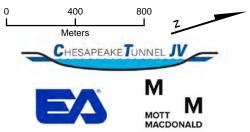
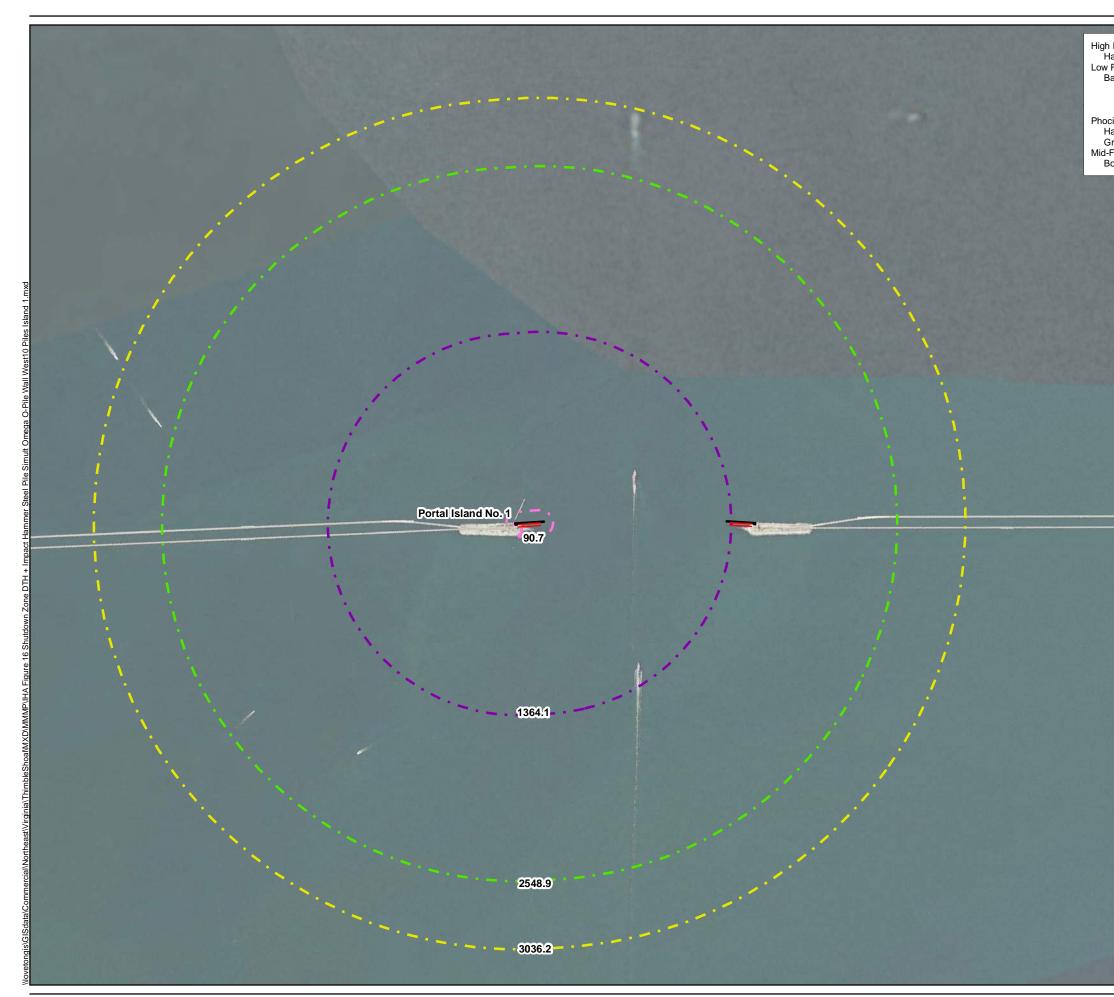


Figure 8 Distance (meters) to Shutdown Zone Using Two Down-the-Hole Hammers for Simultaneous 36- and 42-in Steel Pile Driving for the Temporary Dock – 6 Piles per Day at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

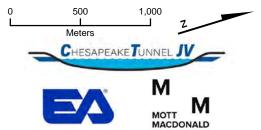
---- O-Pile Wall

Omega Trestle

# 3 Down-the-Hole and 10 Impact Piles per Day - Shutdown Zone

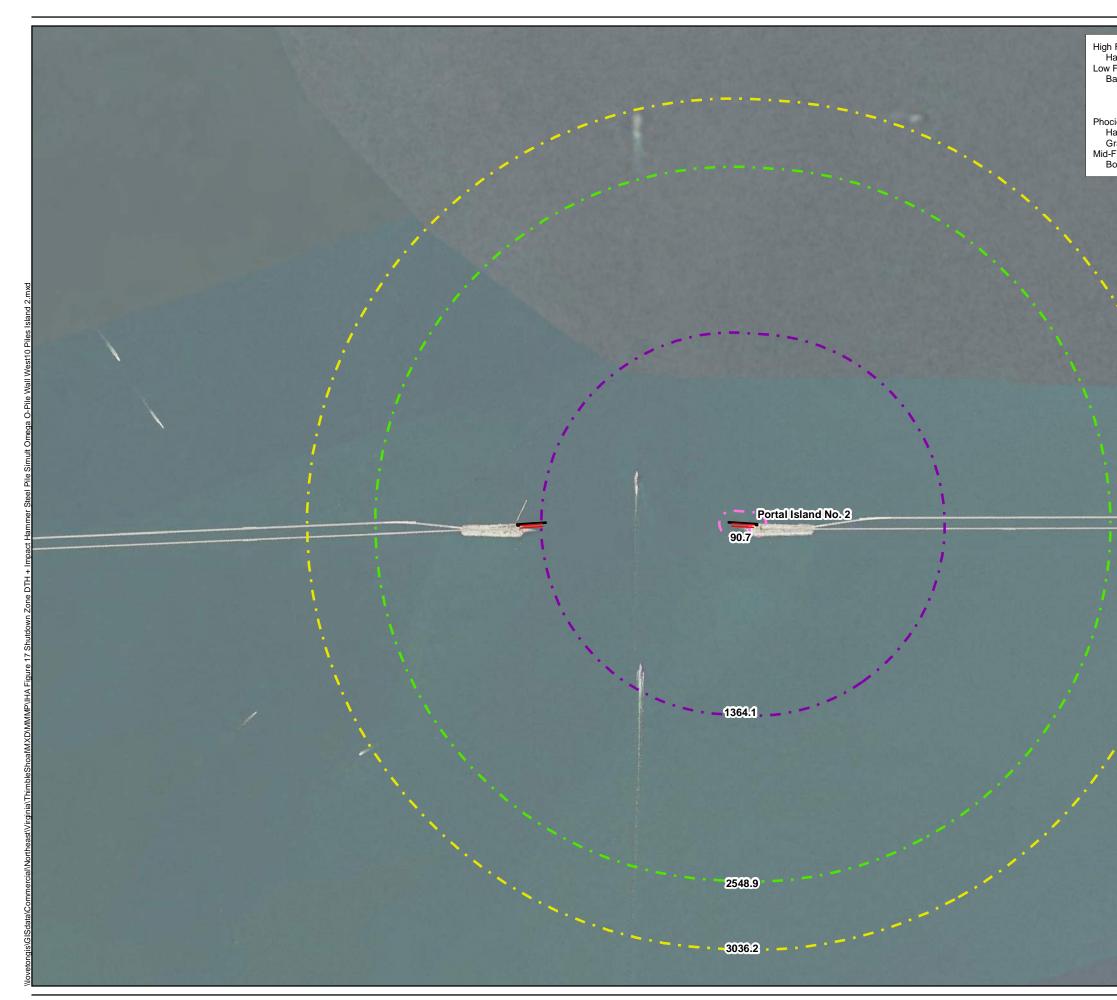
- 3036.2 m High-Frequency Cetaceans
- 2548.9 m Low-Frequency Cetaceans
- 1364.1 m Phocid Pinnipeds
- 90.7 m Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2017, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet



### Figure 9

Distance (meters) to Shutdown Zone Using a Down-the-Hole and Impact Hammers for Simultaneous 36- and 42-in Steel Pile Driving for the Omega Trestle/West O-Pile Wall/ Mooring Piles and Templates – 3 DTH and 10 Piles per Day at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

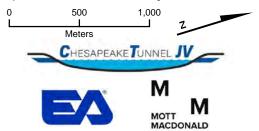
---- O-Pile Wall

Omega Trestle

# 3 Down-the-Hole and 10 Impact Piles per Day - Shutdown Zone

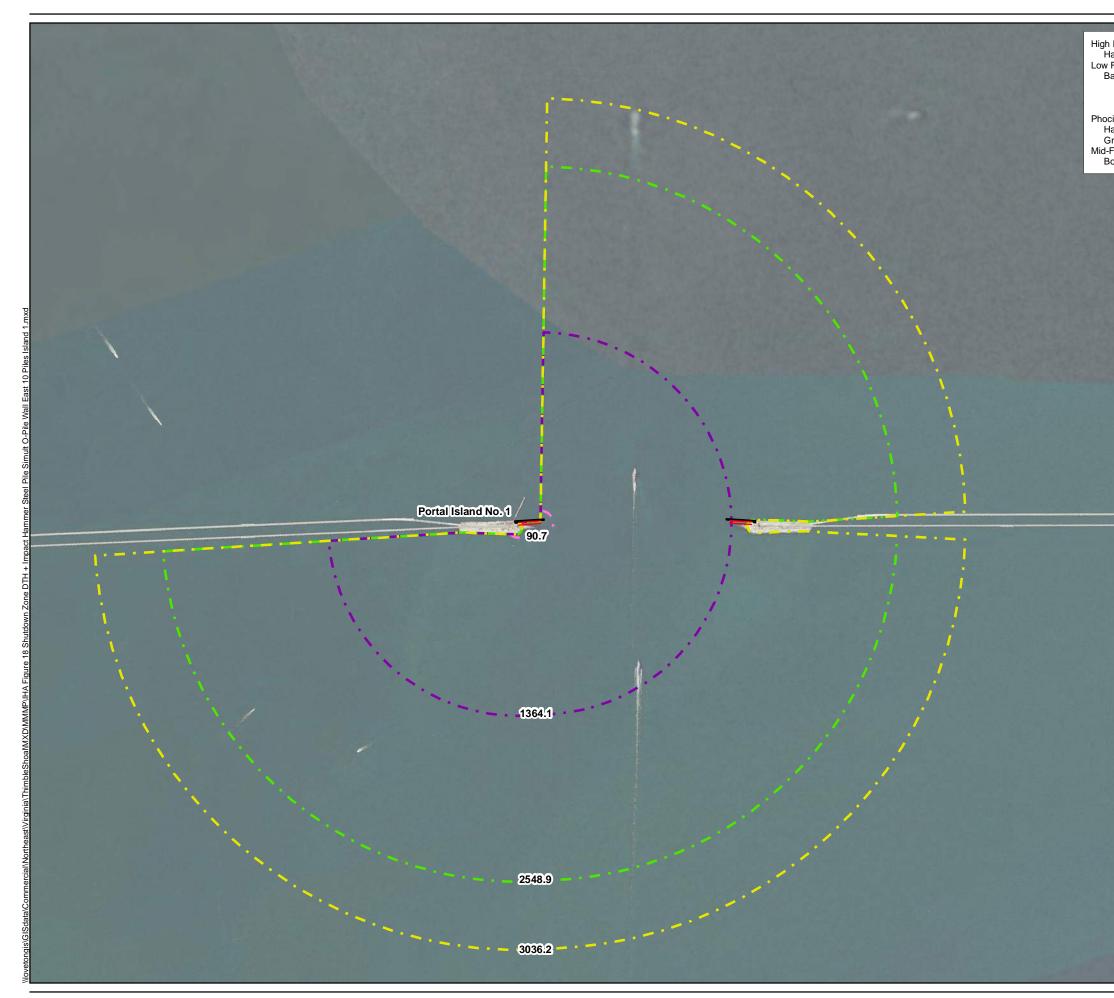
- 3036.2 m High-Frequency Cetaceans
- 2548.9 m Low-Frequency Cetaceans
- 1364.1 m Phocid Pinnipeds
- 90.7 m Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2017, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet



### Figure 10

Distance (meters) to Shutdown Zone Using a Down-the-Hole and Impact Hammers for Simultaneous 36- and 42-in Steel Pile Driving for the Omega Trestle/West O-Pile Wall/ Mooring Piles and Templates – 3 DTH and 10 Piles per Day at Portal Island No. 2 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

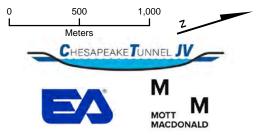
---- O-Pile Wall

Omega Trestle

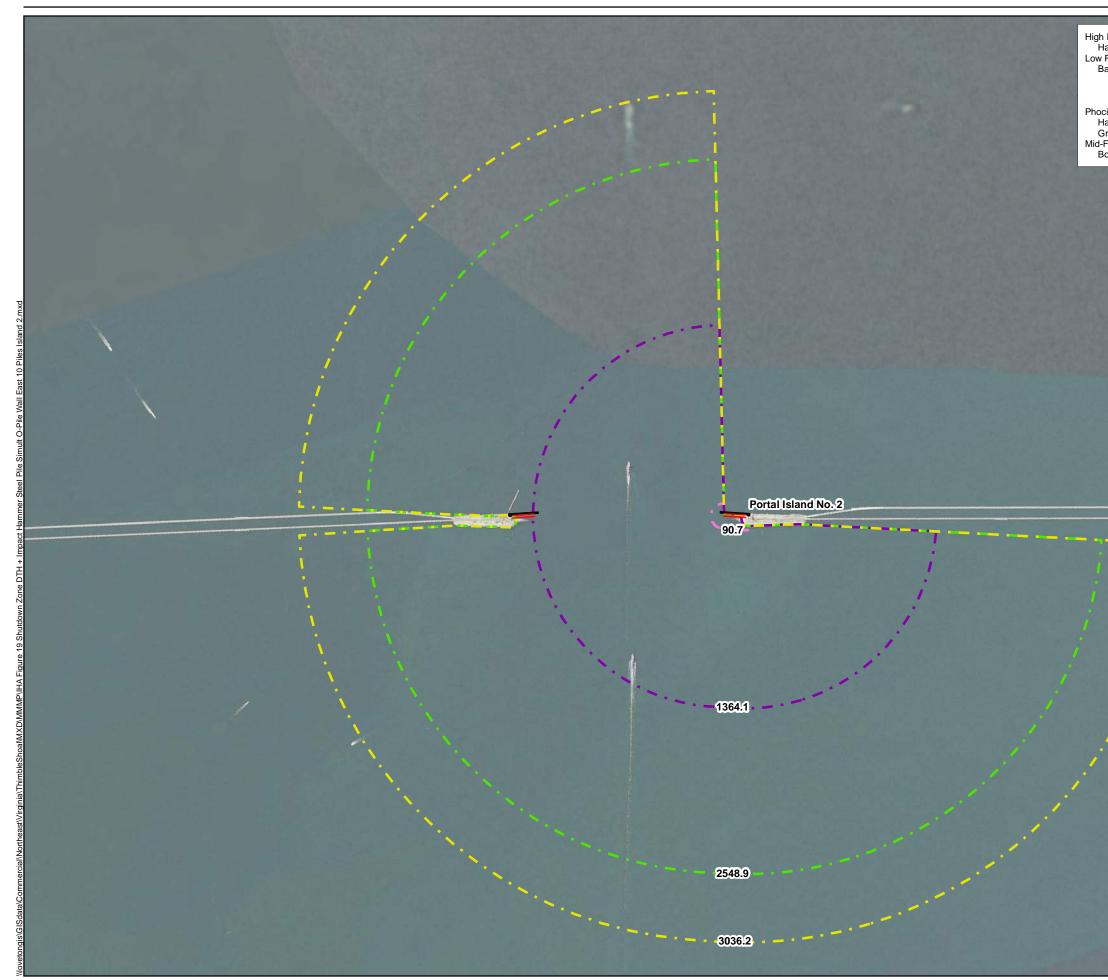
# 3 Down-the-Hole and 10 Impact Piles per Day - Shutdown Zone

- 3036.2 m High-Frequency Cetaceans
- 2548.9 m Low-Frequency Cetaceans
- 1,364.1 m Phocid Pinnipeds
- 90.7 m Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2017, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet



#### Figure 11 Distance (meters) to Shutdown Zone Using a Down-the-Hole and Impact Hammers for Simultaneous 36- and 42-in Steel Pile Driving for the East O-Pile Wall – 3 DTH and 10 Impact Piles per Day at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

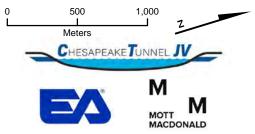
---- O-Pile Wall

Omega Trestle

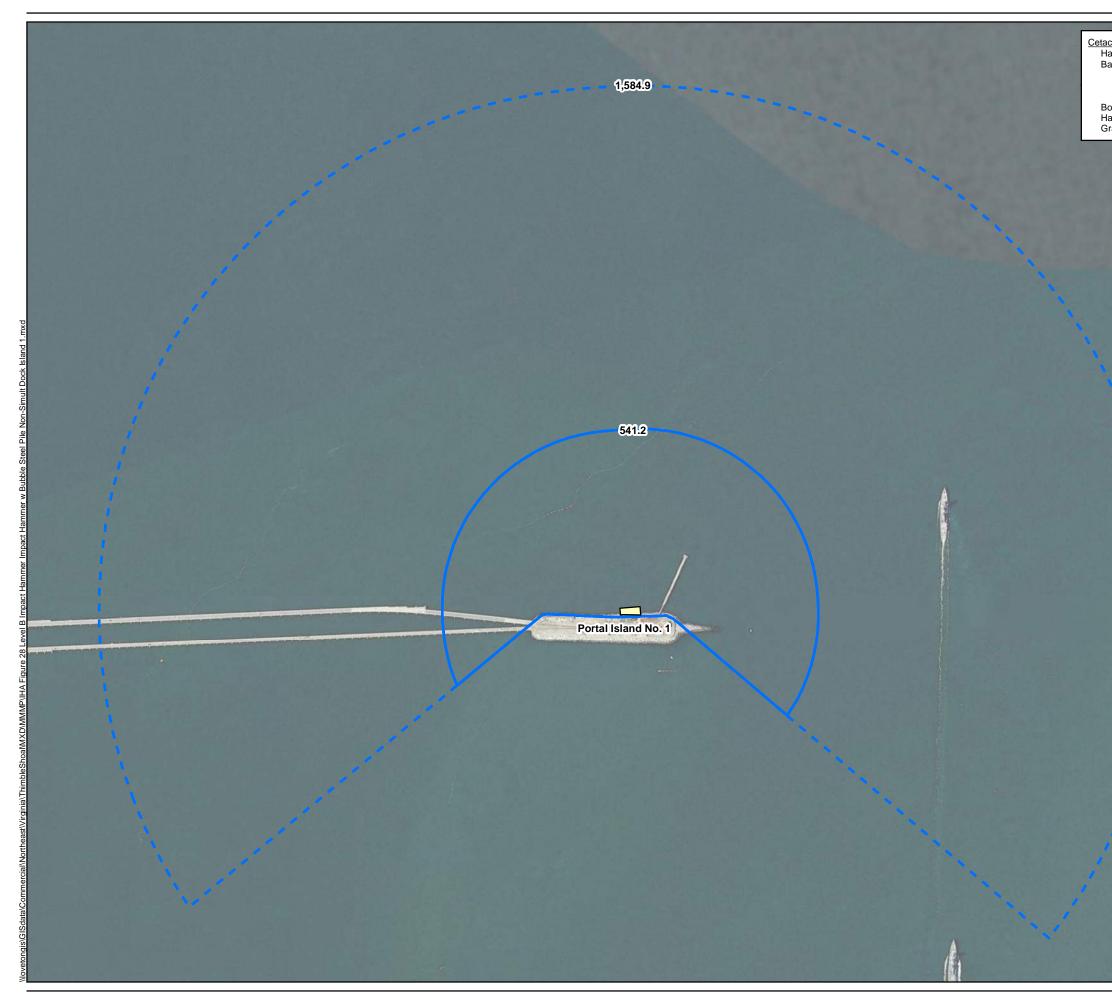
# 3 Down-the-Hole and 10 Impact Piles per Day - Shutdown Zone

- 3036.2 m High-Frequency Cetaceans
- 2548.9 m Low-Frequency Cetaceans
- 1364.1 m Phocid Pinnipeds
- 90.7 m Mid-Frequency Cetaceans

Map Date: 10/3/2019 Source: ESRI 2017, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet



#### Figure 12 Distance (meters) to Shutdown Zone Using a Down-the-Hole and Impact Hammers for Simultaneous 36- and 42-in Steel Pile Driving for the East O-Pile Wall - 3 DTH and 10 Impact Piles per Day at Portal Island No. 2 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





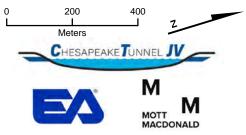
#### Legend

Temporary Dock

Impact Pile - Level B

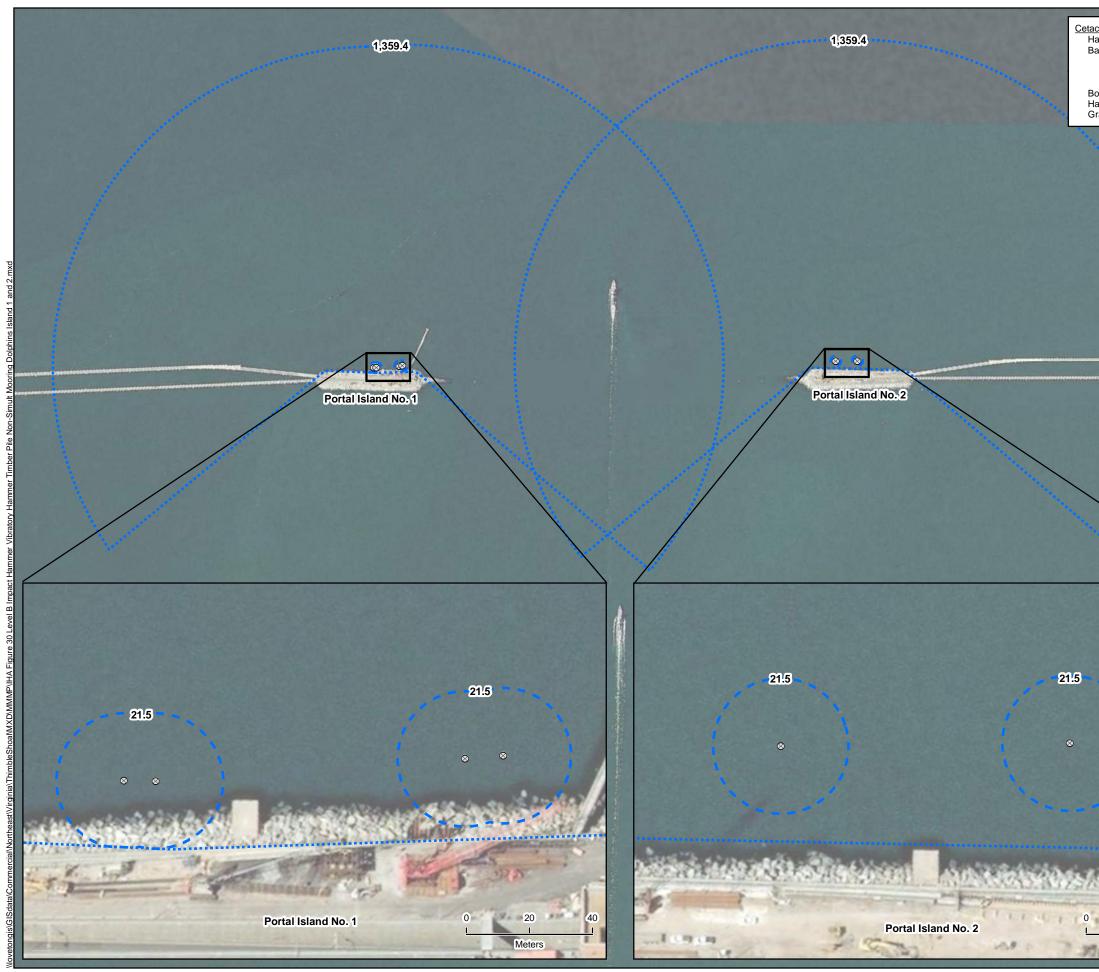
1,584.9 m - Cetaceans and Pinnipeds
 Impact Pile with Bubble Curtain - Level B
 541.2 m - Cetaceans and Pinnipeds

Map Date: 10/3/2019 Source: ESRI 2018, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet



### Figure **13**

Distance (meters) to Level B Threshold Using an Impact Hammer or Impact Hammer with Bubble Curtain for Non-Simultaneous 36- and 42-in Steel Pile Driving for the Temporary Dock at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

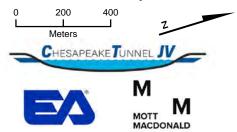
Mooring Dolphin

#### Impact Pile - Level B

21.5 m - Cetaceans and Pinnipeds Vibratory Pile - Level B

1,359.4 m - Cetaceans and Pinnipeds

Map Date: 10/3/2019 Source: ESRI 2018, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet



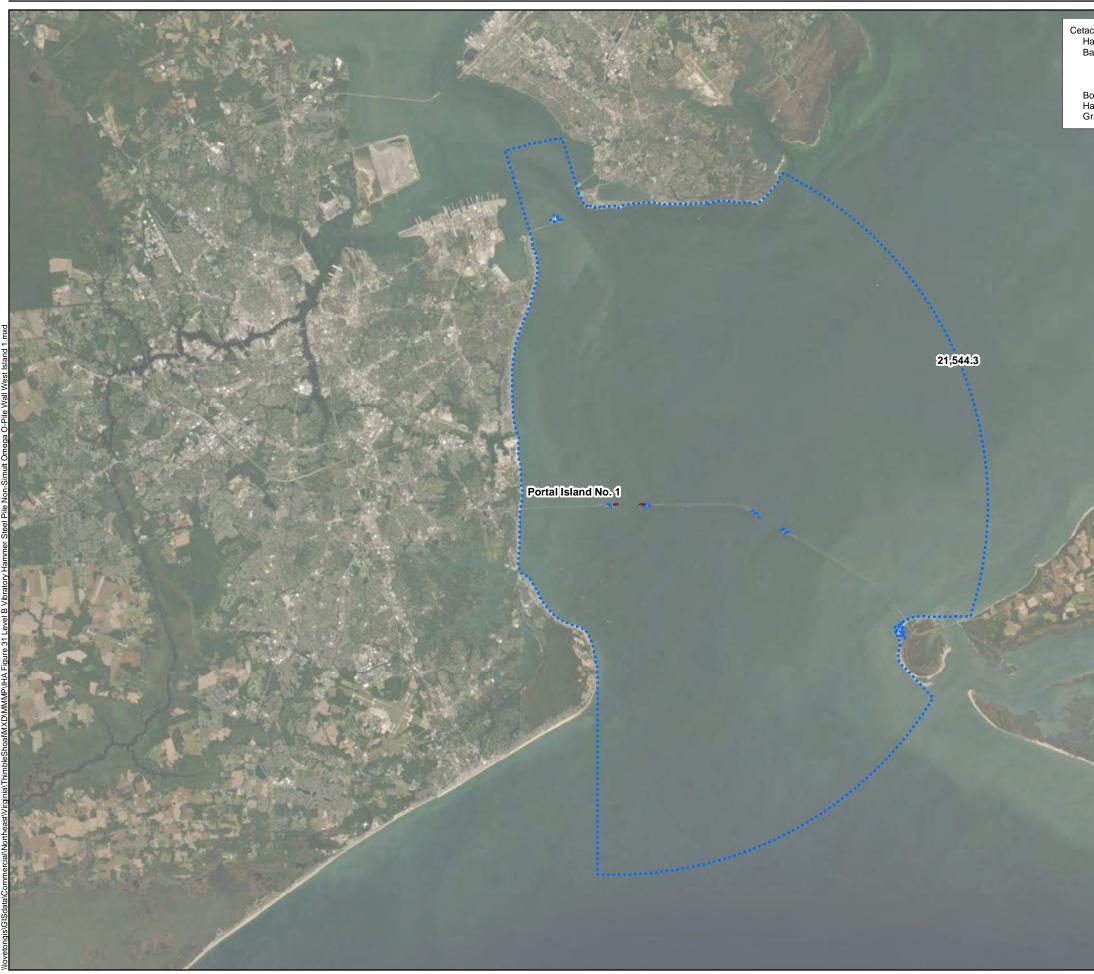
### Figure 14

20

Meters

100

Distance (meters) to Level B Threshold Using an Impact Hammer or Vibratory Hammer for Non-Simultaneous Timber Pile Driving for the Mooring Dolphins at Portal Island Nos. 1 and 2 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

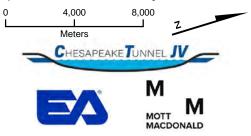
---- O-Pile Wall

Omega Trestle

Vibratory Steel Piles - Level B

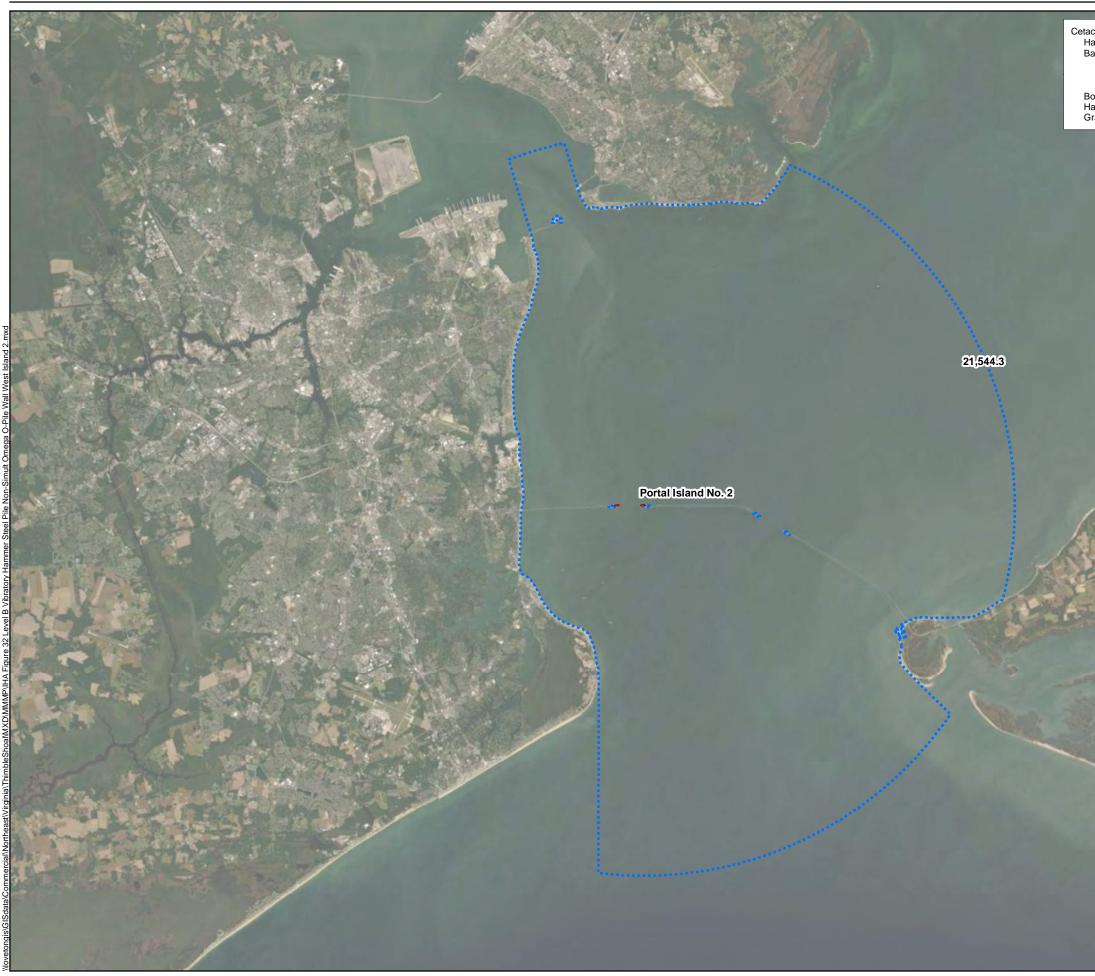
21,544.3 m - Cetaceans and Pinnipeds

Map Date: 10/3/2019 Source: ESRI 2018, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet



### Figure 15

Distance (meters) to Level B Threshold Using a Vibratory Hammer for Non-Simultaneous 36- and 42-in Steel Pile Driving for the Omega Trestle/West O-Pile Wall/ Mooring Piles and Templates at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

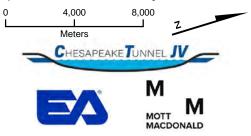
---- O-Pile Wall

Omega Trestle

Vibratory Steel Piles - Level B

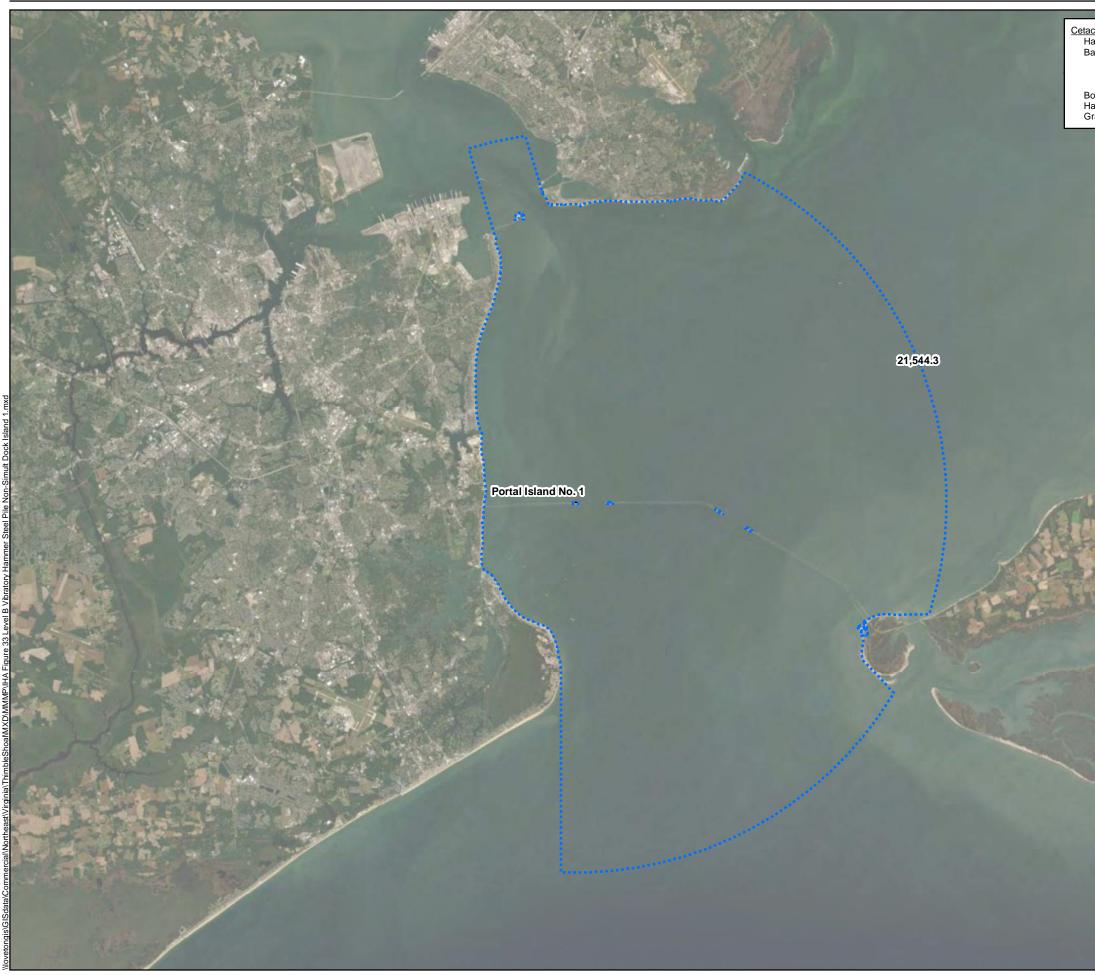
21,544.3 m - Cetaceans and Pinnipeds

Map Date: 10/3/2019 Source: ESRI 2018, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet



#### Figure 16

Distance (meters) to Level B Threshold Using a Vibratory Hammer for Non-Simultaneous 36- and 42-in Steel Pile Driving for the Omega Trestle/West O-Pile Wall/ Mooring Piles and Templates at Portal Island No. 2 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel





#### Legend

Temporary Dock

#### Vibratory Steel Piles - Level B

21,544.3 m - Cetaceans and Pinnipeds

Map Date: 10/3/2019 Source: ESRI 2018, Mott MacDonald 2017 Projection: NAD 1983, State Plane Virginia South, US Feet

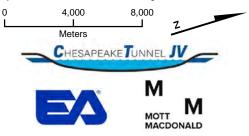


Figure **17** Distance (meters) to Level B Threshold Using a Vibratory Hammer for Non-Simultaneous 36- and 42-in Steel Pile Driving for the Temporary Dock at Portal Island No. 1 Marine Mammal Protection Act Parallel Thimble Shoal Tunnel **Appendix B:** 

# **Daily Protected Species Sighting & Shut- Down Forms**



1092

## Daily Marine Mammal Observer Report

Contractor				and the second second	and the second se	CTJV Parall	the second se			
	AFS Permit: I	A March 2	2020		Observer Loc	ation (Island	): Island	2	11500	
Date: 11 2	520			8	Shift Start: C	de 30				
Sunrise: C	165	Sunse	1 165	5	Shift End:	219				
Weather a	nd Visibility	Informatio	- In					Sel.	Seat Seller	Wall
Location	Time	Air Temp (F)	Water Temp (E)	Visibility (Good, Fau Poor)		Wave Heigh (ft)	Wind Speed & Direction	Precip	oitation	Beaufor Scale
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Observer l	Log		1					-		
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1149	Fint	ined dri	ing pil	e.				-	- Frank	10-11-11-12
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								Children of the		100000
	og Species	Total	# Adults	# of Juveniles	Closest Distance to	or	lown? Sl	ut-	Time of Start Up	the second second second
<b>Fime</b>	Species	Number	7	Juveniles	Distance to Pile Driving	or Behaviors (	lown? St yes/no) do	iut- wn	Start Up	last seci
	Species	Number	# Adults		Distance to	or	lown? Sl	ut-		last see
l'ime	Species	Number	7	Juveniles	Distance to Pile Driving	or Behaviors (	lown? St yes/no) do	iut- wn	Start Up	last see
l'ime	Species	Number	7	Juveniles	Distance to Pile Driving	or Behaviors (	lown? St yes/no) do	iut- wn	Start Up	last see
l'ime	Species	Number	7	Juveniles	Distance to Pile Driving	or Behaviors (	lown? St yes/no) do	iut- wn	Start Up	last see
Гіте 0941	Species	Number	7	Juveniles	Distance to Pile Driving	or Behaviors (	lown? St yes/no) do	iut- wn	Start Up	the second second second
Fime 0941 Daily Sumr	Species	Number	7	Juveniles	Distance to Pile Driving	or Behaviors (	lown? Sł yes/no) do NO	iut- avn Ø	Start Up	last see
Fime 0941 Daily Sumr Species	Species	Number	10 Takes in 2	Juveniles	Distance to Pile Driving 	or Behaviors () Troweling # Shut-Down	lown? Sł yes/no) do NO	iut- avn Ø	Start Up	last see
Daily Sumr Species	Species	Number	10	Juveniles	Distance to Pile Driving 	or de Behaviors ( Traveling	lown? Sł yes/no) do NO	iut- avn Ø	Start Up	last see
Contraction Contractions Contra	Species	Number	10 Takes in 2	Juveniles	Distance to Pile Driving 	or Behaviors () Troweling # Shut-Down	lown? Sł yes/no) do NO	iut- avn Ø	Start Up	last see
Daily Sumr Species	Species	Number	10 Takes in 2	Juveniles	Distance to Pile Driving 	or Behaviors () Troweling # Shut-Down	lown? Sł yes/no) do NO	iut- avn Ø	Start Up	last see

REMSA, Inc. 142 W Queeens Way Hampton, VA 23669 757-722-0113

2012 **Protected Species Sighting & Shut-Down Form** Corresponding sighting # for the day: Shutdown: for the day Date (DD/MM/YYY): 25 11 20 Time of Initial Sighting 0947 Time Animals Left Area: 0949 **CTJV** Thimble Shoals Parallel Tunnel **Project Name:** Island No. Island 2 W of pile driving Upland Pile Driving X In-Water Pile Driving Areas Observed: Air Temp: 52<sup>+</sup> Water Temp: 55.2 + Wave Height 0.7 ft Beaufort Sea State 2 Weather Conditions: Cloudy, Slight breeze Percent Cloud Cover: 901. Percent Glare: OL Visibility Issues: None Animal Location & Distance to Pile Driving: W of Gland 2, Traveling 9, ~ 300 m out Type of Pile Driving DTH Distance From Observer When Initially Observed: 350 M Species Observed: Tursiops truncatus Bottlenose dolphin Number of Animals Sighted (include age classes): Formored about 10 adults UNKNOWI Sex of Animals Observed: Animal Behaviors Observed: Troveling Animal Heading/Direction: 5 along Kland 2, then into channel between bland 182 Human Activities in Area: One large tanker, one rug boat, 3 small fishing boats **Shutdown Information Time Begin:** Shutdown # for the day: Time End: **Total Down Time (mins):** Video or Photograph Taken?: (No, Yes Brief Description of Footage or Photograph. Notes: An estimated pod of about 10 dolphing briefly surfaced along bland 2 as they traveled south toriands Island I, their turned into the channel. They were not spotted again offer passing fishing boats at entrance of channel **REMSA. Inc.** Nichole Pierce 124 W. Queens Way Hampton, VA 23669 **Observer Name / Signature** (757)722-0113

Protected Species Sighting & Shut-Down Form Shutdown: Shutdown: for the day for the day
Date (DD/MM/YYYY): 11232 Time of Initial Sighting 0914 Time Animals Left Area: 1004
Project Name: CTJV Thimble Shoals Parallel Tunnel Island No. 61000 2
Areas Observed: MOA 16/0001 2 Upland Pile Driving In-Water Pile Driving
Air Temp: 59.5 F Water Temp: 58.0 FWave Height 1,04+ Beaufort Sea State 4
Weather Conditions: Sunny, windy
Percent Cloud Cover: 10 Percent Glare: 0 Visibility Issues: White caps as wind speed increased
Animal Location & Distance to Pile Driving: SW of Bland 2, approximately 2000m from Isl Type of Pile Driving DTH
Distance From Observer When Initially Observed: 2100m
Species Observed: Humpback whate (Megaptera novaeangliae)
Number of Animals Sighted (include age classes): 1 juvenile
Sex of Animals Observed: UNLYDOWN
Animal Behaviors Observed: Breaching, traveling
Animal Heading/Direction: Norther J
Human Activities in Area: Navy Submanine with two police escorts, large cargo
Shutdown Information
Time Begin: Shutdown # for the day:
Time End:
Total Down Time (mins):
Video or Photograph Taken?: No Yes
Brief Description of Footage or Photograph:
Notes: One juvenile Humpback spotted at 0914, breaching. The whale slowly moved
North, continuing to breach and fin slap. Last seen around 1004, as it became
difficult to discorn white caps from the blow fin slap.
$\wedge$
REMSA, Inc.
REMSA, Inc. 124 W. Queens Way Hampton, VA 23669 Nichole Rierce Observer Name / Signature



1 of 2

## Daily Marine Mammal Observer Report

6

19 and 2 19 and 2	20 ibility Info Time	Sunset	Water Temp	Visibility (Good, Fair,	Shift Start: ( Shift End: )	1650				
Sunrise: 01.152 Weather and Visit Location 9 and 2 19 and	ibility Info Time	rmation Air Temp (F)	Water Temp		Shift End:	1650				
Veather and Visit Location	Time	rmation Air Temp (F)	Water Temp				1	Telle Sta	Sec.3	1000
Ocation I Sland 2. I Sland 2. I Sland 2. Observer Log Time OU 30 OU 50	Time	Air Temp (F)	Water Temp		Cloud Cover	hir. It. Is	All De la company	and the second	100	other statements of the statement of the
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	Amive.	Laker	10			and the second	Constant, Annual			1. 31
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0914	Human	hary	mydal	a soule	A SIN OF 1	sland 2,	~ 2100m		-	
1015	BRAKO	dailler	10. W	hale has	left the	OTED IN	A ALLANDE	in the		
1031	winds	bt 2	3KD	, quets u	Pto 21 Kt	s, cloudy,	WINDE ID	15	The sector	and a second
1223	End dr			0					9-11-11	and the second
1405	Begin	B	- 0.	10:10 54	COLUMN AD AT	Ac while a	1005		State of the	S That shell
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1450	Leave	6 and	12	y. rom	I SCATES IL	ALC LIFE A				States -
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ighting Log		in the second	Range -	State of the second			NAVE STOL	12		
ime Speci	ies To	tal	# Adults	The Design of the second	Closest	AND ADDRESS OF THE OWNER OF THE	CONTRACTOR OF STREET, STRE	and the second sec	lime of	and the second s
		umber	100	Juveniles	Distance to	And the second se	And the second se	COLUMN TWO IS NOT	Start Up	last see
	<b>这一声</b> 意	THE R			Pile Driving	and the owner of the local division in the l	and the second se	own	-	
0914 Hum	phade	1	9	1	2,000m	Breaching	NO	Ø	ø	1004
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Daily Summary	The start					and the second s			10	- The
	l'otal	T	akes in 4	Lone A T	akes in Zone B	# Shut-Down	s Comment	s	and the second	Na.11
	Number		a lland X.	Con Contraction				- Markell	Sale -	
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		0	2010	/ .1	IIA	E		ST. ST.		
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DSCINCT NEITHES:		and the second se	and the second se		A A A A A A A A A A A A A A A A A A A	Married and a state of the stat	and the second s	all and all all all all all all all all all al		the second s
bserver Names:	NILO	IEV	REMSA	9	V Quecens Way	Hampton, VA	07000	San You		L.



## **Daily Marine Mammal Observer Report**

In the state of the		V / Draga					CTJV Parallel				
NOAA/N	MFS P	ermit: IH	A March 2	020		Observer Locat					
Date: 04	11/2	020				Shift Start: 11	30				
Sunrise:			Sunse	1704		Shift End: 17	36				
Weather	and Vi	sibility I	nformatio								
Location		Time	Air	Water	Visibility	Cloud Cover	Wave Height	Wind Speed	Precipita		aufort
			Temp	Temp	(Good, Fair	, (%)	(ft)	& Direction	1	Sca	le
		Ì	(F)	(F)	Poor)				1	1	
		1010	64	53	Good	5%	2ft	C. 7mph	Ø		<u>२</u>
Island	<u>ál</u>	1210	63	53	Good	5%	245	C. 7mph	Ø	4	2
Toland &	<u>L</u>	1706	6.3		1900/						
		<u> </u>			<u> </u>						
Observer	Log	Number (		timer star	t and stop t	imes for pile driv	ing activities.	shift changes	human ac	tiivties)	
Time		INOTES: [	pre-watch	(IIIICS, Stat	Land Stop C	antes for pite atty					
1130			e at p								
1210		AFFIN	e on 1	Alana.	. ne Like d	500m from	oile driver	beading	west la	act seen	152
1505		Dotte	nose L	DIDAINS	SUDRITER		1	0			
1510			Dre-W								
1544		Otart	pile d	rive.	1	d off brac	kata				
1601		10110-0	ar ve c	1 1 1 4	TO QUE	C DFF MLGC					
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1706		enc	post u	Atch (	De a la tala	1.t		<u></u>			
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Sighting 1	02										
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	og Spec		Total	# Adults	1	Closest	Activity	Shut	1		1
Sighting L Fime			Total Number	# Adults	# of Juveniles	Distance to	or	down?	Shut-	Time of Start Up	1
				# Adults	Juveniles	Distance to Pile Driving	or Behaviors	down? (yes/no)	Shut- down	Start Up	last se
Гime	Spec		Number	# Adults	1	Distance to	or Behaviors	down? (yes/no)	Shut- down n/A	Start Up	last se
Time	Spec Tr Ł	runceture	Number		Juveniles	Distance to Pile Driving	or Behaviors	down? (yes/no)	Shut- down	Start Up	last se
Гime	Spec Tr Ł		Number	10	Juveniles	Distance to Pile Driving	or Behaviors	down? (yes/no)	Shut- down n/A	Start Up	last se
Time	Spec Tr Ł	runceture	Number	10	Juveniles	Distance to Pile Driving	or Behaviors	down? (yes/no)	Shut- down n/A	Start Up	Time last se 152
Time	Spec Tr Ł	runceture	Number	10	Juveniles	Distance to Pile Driving	or Behaviors	down? (yes/no)	Shut- down n/A	Start Up	last se
Time 1505 1519	Spec	runceture	Number	10	Juveniles	Distance to Pile Driving	or Behaviors	down? (yes/no)	Shut- down n/A	Start Up	last se
Time	Spec	runcetur	Number	10 4	Juveniles Ø Q	Distance to Pile Driving 500m 150m	or Behaviors trough / feed trough / feed trough / feed trough / feed trough / feed	down? (yes/no) ha ha ha	Shut- down n/A N/A	Start Up	last se
Гіте 1505 1519 Daily Sum	Spec	runceture	Number	10	Juveniles Ø Q	Distance to Pile Driving	or Behaviors trough / feed trough / feed trough / feed trough / feed trough / feed	down? (yes/no) ha ha ha	Shut- down n/A N/A	Start Up	last se
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Fime	Spec	Total Number	Number	10 4 Takes in 2	Juveniles	Distance to Pile Driving 500m 150m Takes in Zone E	or Behaviors troug/feeding	down? (yes/no) ha ha ha	Shut- down n/A N/A	Start Up	last se
Гіте 1505 1519 Daily Sum	Spec	Total	Number	10 4	Juveniles	Distance to Pile Driving 500m 150m	or Behaviors trough / feed trough / feed trough / feed trough / feed trough / feed	down? (yes/no) ha ha ha	Shut- down n/A N/A	Start Up	last se
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Fime 1505 1519 Daily Sum	Spec	Total Number	Number	10 4 Takes in 2	Juveniles	Distance to Pile Driving 500m 150m Takes in Zone E	or Behaviors troug/feeding	down? (yes/no) ha ha ha	Shut- down n/A N/A	Start Up	last se
Fime	Spec	Total Number	Number	10 4 Takes in 2	Juveniles	Distance to Pile Driving 300m 150m Takes in Zone E	or Behaviors Frauel/Sedime B # Shut-Dov	down? (yes/no) nc hco ncs wns Comm	Shut- down n/A N/A	Start Up	last se
Fime 1505 1519 Daily Sum Species	Spec	Total Number / 6	Number	10 4 Takes in 2	Juveniles	Distance to Pile Driving 300m 150m Takes in Zone E	or Behaviors Frauel/Sedime B # Shut-Dov	down? (yes/no) nc hco ncs wns Comm	Shut- down n/A N/A	Start Up	last so
Fime	Spec	Total Number / 6	Number	10 4 Takes in 2	Juveniles	Distance to Pile Driving 500m 150m Takes in Zone E	or Behaviors Frauel/Sedime B # Shut-Dov	down? (yes/no) nc hco ncs wns Comm	Shut- down n/A N/A	Start Up	last s

Protected Species Sighting & Shut-Down Form Corresponding sighting # for the day: Shutdown:	Pg 2 of 2 <u>I</u> the day
Date (DD/MM/YYYY): 04/11/2020 Time of Initial Sighting 1505 Time Animals Left Area: 1	522
Project Name: CTJV Thimble Shoals Parallel Tunnel Island No.	0
Areas Observed: West orde. Upland Pile Driving In-Water Pile Driving	<u></u>
Air Temp: <u>63</u> Water Temp: <u>53</u> Wave Height <u>2</u> Beaufort Sea State	2
Weather Conditions: Sunny	
Percent Cloud Cover: 5% Percent Glare: 10% Visibility Issues: Sunglare off to the	<u>e left</u>
Animal Location & Distance to Pile Driving: first group 500m from pile second group. Type of Pile Driving upland pile driving	
Distance From Observer When Initially Observed: 500m for first group 150m for seco	ad group
Species Observed: Bottlenose Dolphins (Tursiops truncatus) Number of Animals Sighted (include age classes): 14 adults 2 juveniles 16 to	
	tal
Sex of Animals Observed: unknows	
Animal Behaviors Observed: traveling and feeding	,,,
Animal Heading/Direction: west / north west	
Human Activities in Area:/A	<u></u>
Shutdown Information	
Time Begin: Shutdown # for the day:	·
Time End:	
Total Down Time (mins):	
Video or Photograph Taken?: No Yes	
Brief Description of Footage or Photograph: <u>17/A</u>	
	······································
Brief Description of Footage or Photograph: <u>77/A</u> Notes: <u>Group of six Bottlenose Dolphins signted 500m from pile driver. First signted transformed that changed direction</u>	and to
Brief Description of Footage or Photograph: Notes: <u>Group of six Battlenase Dolphins signted 500m from pile driver - First signted tra southwest where they stopped at channel edge and milled around than changed direction travel in a continuest direction. At 1519 first group was than wined by another group</u>	of dix
Brief Description of Footage or Photograph: Notes: <u>Group of six Battlenase Dolphins signted 500m from pile driver - First signted tra southwest where they stopped at channel edge and milled around than changed direction travel in a continuest direction. At 1519 first group was than wined by another group</u>	of dix
Brief Description of Footage or Photograph: <u>77/A</u> Notes: <u>Group of six Battlenose Dolphins signted 500m from pile driver. First signted travel in a continuent they stopped at channel edge and milled around than changed direction travel in a continuent direction. At 1519 first group was than joined by another group individuals as they traveled in a northwest direction. All animals than milled about</u>	of dix
Brief Description of Footage or Photograph: Notes: <u>Group of six Battlenase Dolphins signted 500m from pile driver - First signted tra southwest where they stopped at channel edge and milled around than changed direction travel in a continuest direction. At 1519 first group was than wined by another group</u>	of dix
Brief Description of Footage or Photograph: <u>M/A</u> Notes: <u>Group of six Battlenose Dolphins sighted 500m from pile driver a First sighted tra- southwest where they stopped at channel edge and milled around than changed direction travel in a northwest direction. At 1519 first group was than joined by another group individuals as they traveled in a northwest direction. All animals than milled about about 1 mile out before traveling beyond wisual contact at 1522.</u>	of six
Brief Description of Footage or Photograph: <u>M/A</u> Notes: <u>Group of six Battlenose Dolphins sighted 500m from pile driver a First sighted tra- southwest where they stopped at channel edge and milled around than changed direction travel in a northwest direction. At 1519 first group was than joined by another group individuals as they traveled in a northwest direction. All animals than milled about about 1 mile out before traveling beyond wisual contact at 1522.</u>	of six
Brief Description of Footage or Photograph: <u>71/A</u> Notes: Group of six Battlenese Dolphins sighted 500m from pile driver. First sighted tra- southwest where they stopped at channel edge and milled around than changed direction travel in a continuest direction. At 1519 first group was than joined by another group individuals as they traveled in a northwest direction. All animals than milled about about 1 mile out before traveling beyond visual contact at 1522. REMSA. Inc.	of six
Brief Description of Footage or Photograph: <u>77/A</u> Notes: <u>Group of six Battlenose Dolphins sighted 500m from pile driver a First sighted tra- southwest where they stopped at channel edge and milled around than changed direction travel in a northwest direction. At 1519 first group was than joined by another group individuals as they traveled in a northwest direction. All animals than milled about about 1 mile out before traveling beyond wisual contact at 1522.</u>	of six



## Daily Marine Mammal Observer Report

-			]	Daily N	1arine M	ammal O					MES
	Contractor: C	TJV / Draga	dos			Project Name	: CTJV Paralle	el Thimble S	hoals T	innel	
	NOAA/NMF			120		Observer Loc	ation (Island #	<sup>1</sup> ):			
	Date: 01					Shift Start:	0945				
	Sunrise: O(			190-	1	Shift End:	75				
	Weather and				<u> </u>	Sunt Cito					
	Location	Time	Air	Water	Visibility	Cloud Cover	Wave Height	Wind Spee	d Prec	ipitation	Beaufort
			Temp		•		(ft)	& Direction	n	•	Scale
			(F)	(F)	Poor)	(70)	(11)		[		
	Fsland	1 1100		76.0		1007.	2.0	ID-OKts	52 11	avur	2
	Island	1450		76.0		1007.	4.0	8.9145E		91	4
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	Observer Lo	Dg									
	Time	Notes: (	pre-watch	times star	t and ston tin	nes for pile driv	ing activities,	shift change	s <u>, huma</u>	n actiivtie	5)
	0945	Arri	ved at	Par 4	An Lat	Get on	van				
	1012	Ami	YE OF	1 75	and						
		1021 Wal		nd II	cland						
		050 Sta		min	pre-wa	tch obs	ervations				
	105	1 Navy	n shio	hard 1	RC tra	velian W	est to	Lagy.			
	1108	Was	tha on	SILVY	y equ		weather	art to		Þ	
	128	Shi		le dri	ally ve	ssel trun	iting e		4000		
	459	Sto	0 PI	e did	vm						
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	1312	Car	NH PI	le d	VI VI VIV	. 0					
	1322	Sh	DO DI	e dri	519-0						
	1549			<u>56()</u>	tmilling	Bast 1	o west				
	1480		0 20 m		ost would	<u></u>					
	1410	8194	rt 30m 1e anv	in p	re wate	<u></u>					
	मिहा		mfer 1	nuvelin	a Bas	w ut f	UCL.				
	1706	Enc	1	divino	14)						
	1736	En		min		watch					
	1730	5 Let	+ Tal	and							
	1751	Ar	rive	Drick	nt ph	igna Lo					
					· · · ·	0					
	Sighting Lo			· · · · ·		10					
	Time	Species	Total	# Adults		Closest	1 1				Time
			Number		Juveniles	Distance to	5 1		Shut-	Start Up	last seen
			ļ			Pile Driving			lown		
	1639	Unidentitie	01	0	0	125 m	dessed	NO	N/A	N/A	644
		Sea furtly	<u> </u>				<u> </u>				
			1								
			+	1							
									· · · · ·		
	Daily Summ			-							
	Daily Summ	ary		Takes in 7	one A Ta	kes in Zone R	# Shut-Down	s Comman	te		
	Daily Summ Species	ary Total		Takes in Z	Zone A Ta	kes in Zone B	# Shut-Down	s Commen	ts		
	Species	Total Numbe	r		Zone A Ta		# Shut-Down			acs flag	ited
	Species	Total Numbe	r	Takes in Z	Zone A Ta	kes in Zone B		decayed	carc	ass floc	ited
-11.0	Species	Total Numbe	r		Zone A Ta			decayed	carc	ass floc	ited
	Species	Total Numbe	r		Zone A Ta			decayed	carc	ass floc	ited
	Species Unidentifi Sea tur	Total Numbe		Ø				decayes Past	carc	ass floc c site	steel

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Childred Charles and a starting of the start of the starting of the start of the st

Protected Species Sighting & Shut-Down Form Corresponding sighting # for the day: 1 Shutdown: N/A for the day
Date (DD/MM/YYYY): 09-17-2020Time of Initial Sighting 1639 Time Animals Left Area: 1644
Project Name: CTJV Thimble Shoals Parallel Tunnel Island No
Areas Observed: South of Pier Upland Pile Driving In-Water Pile Driving X
Air Temp: <u>70.9</u> Water Temp: <u>76.0</u> Wave Height <u>4.0</u> Beaufort Sea State <u>4</u>
Weather Conditions: cloudy, light rain at time of incident
Percent Cloud Cover: 100 Percent Glare: 10 Visibility Issues: F03
Animal Location & Distance to Pile Driving: 125 meters
Type of Pile Driving DTH
Distance From Observer When Initially Observed: <u>20 meters</u>
Species Observed: <u>Sea Turtle Unidentified</u> Number of Animals Sighted (include age classes); <u>1</u>
Sex of Animals Observed:
Animal Behaviors Observed: Deceased and floating
Animal Heading/Direction: South towards Chic's Beach
Human Activities in Area: Navy Ship traffic and recreational anglers
Shutdown Information         Time Begin:       N/A         Shutdown # for the day:       N/A         Total Down Time (mins):       N/A         Video or Photograph Taken?:       No (res)         Brief Description of Footage or Photograph:       Zoo med in iPhone photo of carcass         floating       at surface

1

		Form Corresponding sighting Shutdown:	The second
Date (DO/MM/YYY):	22/08/200 Time of Initial Sig	hting 11/2. Time Animals	Left Area: //22
Project Name:	CTJV Thimble Shoals Parallel	Tunnel Island No.	1
Areas Observed:	North + Fast + PTshald Upis	and Pile DrivingIn-Water	Pile Driving
Air Temp:	Water Temp: Wave	Height Benu	fort Sea State
Weather Conditio	ons:	42.1.2. 清洁的	Sec. Print
Percent Cloud Cov	ver: Percent Glare:	Visibility Issues:	
Animal Location &	Distance to Pile Driving: No.1	in of Island 1. Mid-chan	d. 600 m from t
Type of Pile Drivin	ng Nana Astive merver When Initially Observed:		
Species Observed:	Bottlenose Delphis	120 m	
Number of Animal	is Sighted (include age classes):	12 Adults	
Sex of Animals Ob Animal Behaviors	Observed: UnKnown Observed: Traveling		
	Direction: East	· · · · · · · · · · · · · · · · · · ·	1. S. S. S.
Human Activities	in Area: Light, small boat	- traffic	Harris and Share by
Shutdown Inform	ation Time Begin: Time End: Time (mins):	Shutdown # for the day	: N/A
Video or Photograp	ph Taken?: No Yes		
Brief Description of	of Fuotage or Photograph:		
Tree but are a		and the second	
			AND CONSTRUCTION
Notes: Group of Where trave the trostle	of 12 Dolphins spithed Mit lives East and Approx a Dolphins Eastioned Er	Schennel, Neith of Isi simulary 600 m from	and I. Doll the end of
2Km East	t of Island 1		
REMSA. Inc.	acmsa		
124 W. Queens Way	7	n Fuldes	14.030 - 532
EDVANUES COMPLETENCE			
Hampton, VA 23669 (757)722-0113		ver Name / Signáture	



### **Daily Marine Mammal Observer Report**

VOA A ALLA	Name of Concession, Name of Street, or other	gados	_		I FORCET VAULUE	<b>CTJV</b> Parall	er i minne an	oais i un	nel	
		HA March 2	020	San Charles	Observer Loca		():	and and a	Contraction of	1.5
Date: 08	122/202	19 AN 28 - 18			Shift Start (	041	- Profession	and the local	1.00	Sec
Sunrisc: C		Sunse	: 1931	8	Shift End 1	501	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )			
		Informatio	and the second se	8		and the second				
Location	Time	Air Temp	Water Temp (F)	Visibility (Good, Fair, Poor)	Cloud Cover (%)	Wave Heigh (ft)	Wind Speed		itation	Beaufort Scale
Island	1 119	(F) 5 <b>R</b> 1	\$1	640	80	1.5	GK+ W	No	Int	2
		-+	+				-	-		
Abarman I.	-		-		-			-		
Observer L Time		(non untch	times sta	a and stop to	mes for pile driv	ing a studelag	shi0 changes	human	actinties	
1021				rt and stop to	mes for pile ariv	ing activities	SHIT CHARTERS	, nomen	activites.	
1038		ten Rid		1 (1	wo's lie		A STINC	P.AL.L		
1047	1.4		**	1 47			-			
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- man	the c	alle be	16 100	Cit Pass	hour is	THOMES II	12 2 4-0	6.1	of To	lands
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1146	R		13 145	PERC	Interval	<u></u>	VUIC L. M	TH.F.		
1147	5	and have		lest P.I	- Realing	dell'as		Basti	Ple	
1207	8.		ing a	ch Pile	e. Regin	Linter	al Buch	le Cu	chain	active
12.05	L Fride	ich ford	L D. 1-	64450	Do St Llot	7 h				
1739		un ans	L'EIL	1 883.0	F MAR NOR	11		4. 3	1 5	
			F 1.1 - F		a Since	LINKA	(aund )	ne /	210 - 2	Table ( Second
	1210	tab Ros	T Wat	in tak	e final	WAIK a	lennd	het /	210-0	
124E 1301	160	ten ten	ic to	Yard	<u>e fins</u> (		lennd	[h# /	2/4	
1248	160	ten Riv	ic to	Yard			(engd		214-2	
1245	- <del>*</del>	ten Riv	yand	fard						
124E 130L	- <del>*</del>	ten Riv	ic to	fard	Closest Distance to Pite Driving	Activity or Behaviors	Shut dovyn?		Time of Start Up	Time last seen
12.48	5	Total	yand	for d	Closest Distance to	Activity	Shut dovyn?	Time of Shut-	Time of	Time
1245 1301 Signing La	Species	Total	yand	for #	Closest Distance to	Activity	Shut dovyn?	Time of Shut-	Time of	Time
1245 1301 Signing La	Species Bary	Total Number	# Adults	for d	Closest Distance to Pile Driving	Activity or Behaviors	Shut dovn? (yes/no)	Time of Shut- down	Time of	Time
124K 1301 Sighting L Fime	Species	Total Number	yand	for d	Closest Distance to	Activity or Behaviors	Shut dovn? (yes/no)	Time of Shut- down	Time of	Time
124E 130L	Species mary Tota	Total Number	# Adults	for d	Closest Distance to Pile Driving	Activity or Behaviors	Shut dovn? (yes/no)	Time of Shut- down	Time of	Time

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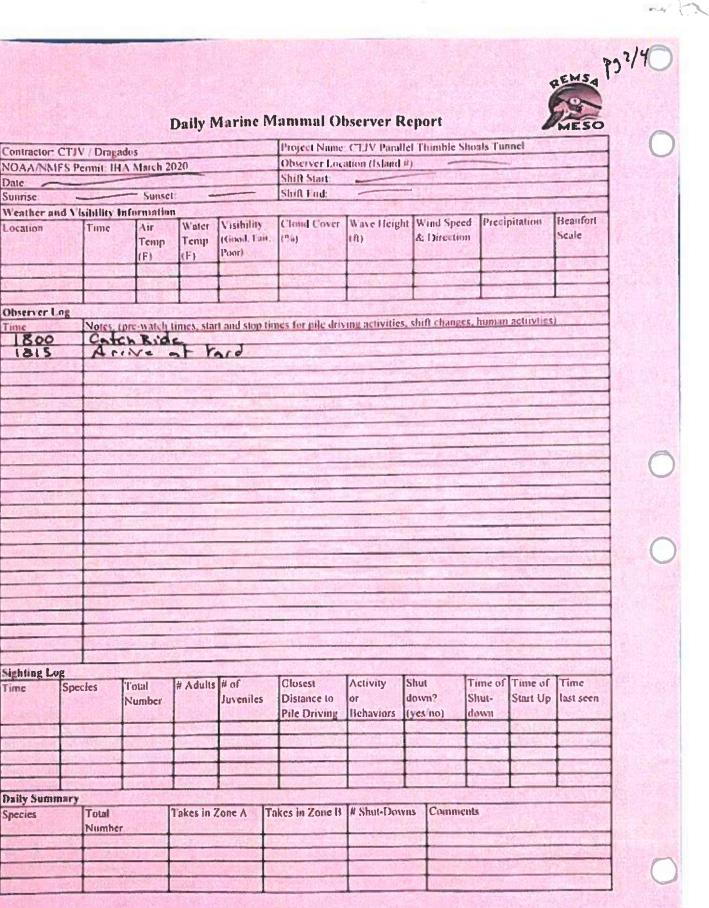


## Daily Marine Mammal Observer Report

Contractor	CTJV / Draj	ados			Project Nam	CUV Par	allet I handet.	Shark To	maal	UNSOLAU		
- VAAAA	CC 0.		2020	Sec. Sec.	Observer Lu	Project Name: CTJV Parallel Thimble Shoats Tunnel Observer Location (Island #):						
ALC: UN	176/2		the second second	a second	Shift Start	0636		- Contraction				
onume O	610	Enne.	ci 1940	2	Shift Lud	-030						
Weather at	nd Visibility	Informati	on	VOR DOLOG						1100		
Location	Time	Air	Water	Visibility	Cloud Cover	In				Ter.		
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REMSA, Inc. 142 W Queeens Way Hampton, VA 23659 767-722-0113



Observer Names

REMSA, Inc. 142 W Quesens Way Hampton, VA 23669 767-722-0113

Date (DD/MMAYNY): 26/06/201° Time of Initial Sighting 1442 Time Animals Left Area: 1456 Project Name: CTJV Thumble Should Plandled Fluncel Island Nn. 2 Areas Observed: South west 1 24-41 Upland Pile Driving In-Water Pile Driving Nr Temp: 80°F Water Temp: 84°F Wave Height 13°P Beaufort Sea State I Weather Conditions: Clesf, Swnwy Percent Cloud Cover: 5 Percent Glare: 10 Visibility Issues: No Animal Location & Distance to Pile Driving: 700 w SW of 1 - p. do's W Type of Pile Driving Move A Cture, Jethry up to Impact on tamp, doc's Number of Animals Observed: Web Initially Observed: 200 M S Species Observed: Betts Area: Small boat State(L Number of Animals Observed: U.S.Knowy Human Activities in Area: Small boat State(L Sbutdown Information <u>Time End:</u> Total Down Time (mins): Video or Photograph Taken? BY Ves Brief Description of Footage or Photograph: Notes: Group of 9 dolphine first spatial 700 m SW of temp. Jock at Delphies travela west and were list sean at 1486 Still Itemati West, appressional of 1.5 Km from tamp. dock	Protected Species Sighting & Shut-Down	Form Corresponding sighting # for the day: 1
Project Name: CTJV Thumble Should Parallel Lunnel Laland No. 2 Areas Observed: South weekt + 2.4-41 Upland Pile Driving In-Water Pile Driving In-Water Pole Driving Market Pile Start 1 (1) 194 Beaufort Sea State 1 Neather Conditions: Clear, Sunny Percent Cloud Cover: S Percent Glare: 10 Visibility Issues: No. Animal Location & Distance to Pile Driving: 700 w SW of famp. dock Distance From Observed: Belliz vosc Number of Animals Sighted tinclude age classes): I Adoutts Sea of Animals Observed: West Muman Activities in Area: Sound Vast State(L Shutdown Information Time End: Time End: Total Down Time (mins): Video or Photograph Taken? B? Viss Brief Description of Footage or Photograph: Notes: Group of I I dolphine first spatial 700 m SW of temp. dock of Dolphines translation weeks and weeks least seen at 1486 Still Intender Notes: Group of I I Skill and West Still Intender Notes: Group of I I Skill weeks and weeks least seen at 1486 Still Intender Notes: Group of I I Skill And West Still Intender Notes: Group of I I Skill And I I E Ken from temp. dock Been Firther J Observer Name (Signature) REMSA. Inc. 124 W. Queen Way tampion, VA 2369 Been Firther J	Date (DD/MM/YYYY): 26/08/202 Time of Initial Sig	State The second state of the second state of
Areas Observed: South weat 12 doub 1 Upland Pile Driving In-Water Pile Driving In-Water Pile Driving Or Water Temp: 84°F Wave Height 13°1 Beaufort Sea State I Neather Conditions: Clear, Sunny Percent Cloud Cover: S Percent Glare: 10 Visibility Issues: None Animal Location & Distance to Pile Driving: 700 m SW of for p. do'th Type of Pile Driving Marx Active, Setting up to Impact on temp, dock Distance From Observed: Balls, rase Number of Animals Sighted (include age classes): A Adalts Sea of Animals Observed: Una know A Animal Bedaing/Direction: We St Human Activities in Area: Small book_time(in Time Begin: Time Begin: Shutdown Information Time Begin: Shutdown Information Mines: Group of 9 delphine first spothed 700 m SW of temp dock a Delphines tractical west, and were last Sean at 1486 Still headi West, appendix A. Inc. 12 Mines Way Ampoint, VA 2369 Been Firther Market.		1
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Type of Pile Driving None Active, setting up to Impact on temp. dock Distance From Observer When Initially Observed: 200 m 3 Species Observed: Batternosci Sex of Animals Observed: Unknown Animal Behaviors Observed: Travelay Animal Heading/Direction: West Human Activities in Area: Grall book traffic Sbutdown Information Time End: Time End: Total Down Time (mins): Video or Photograph Taken? D2 Yes Brief Description of Footage or Photograph: Notes: Graup of 9 delphines first spotted 700 m Swl of temp. dock at Delphines travelad west and were last seen at 1486 Still headi WCSt, approximatel 1.5 km from temp. dock REMSA. Inc. 124 W. Queens Way tampton. VA 23669 Bear Firther Bitter J.	rercent Cloud Cover: S Percent Glare:	Visibility Issues: /V • • •
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Species Observed: Belle A05 c Number of Animals Sighted (include age classes): 9 Adalts Sex of Animals Observed: Unaknow Animals Observed: Unaknow Animals Heading/Direction: West Human Activities in Area: Small book traffic Sbutdown Information Time Begin: Time End: Total Down Time (mins): Video or Photograph Taken? Of Yes Brief Description of Footage or Photograph: Notes: Group of 9 dolphine first spothed 700 m sw of temp. dock at Dolphies traveled west and were last seen at 1466 Still headi West, and were last seen at 1466 Still headi Merest, approximated 1.5 km from temp. dock	Type of Pile Driving None Active, Setting	up to Impact on temp. dock
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Sex of Animals Observed: Unknown Animal Behaviors Observed: Traveling Animal Heading/Direction: West Human Activities in Area: Small beat finder Shutdown Information Time Begin: Shutdown # for the day: N/A Time End: Total Down Time (mins): Video or Photograph Taken? Dr Yes Brief Description of Footage or Photograph: Notes: Group of 9 dolphine first spothed 700 m sw of temp. dock at Dolphines traveled west and were last seen at 1486 Still hundi West; approximately 1.5 km from temp. dock REMSA. Inc. 124 W. Queens Way tampton, VA 23669 Been First def Different Stimpton:		Adults
Animal Heading/Direction: West Human Activities in Area: Small heat findic Sbutdown Information Time End: Total Down Time (mins): Video or Photograph Taken? Dr Yes Brief Description of Footage or Photograph: Notes: Group of 9 dolphine first spathed 700 m SW of temp. dock at Dolphins travelub west and were last seen at 1486 Still head: West, approximatel 1.5 km from temp. dock REMSA. Inc. 124 W. Queens Way tampton. VA 23669 Been Fielder JHW	Sex of Animals Observed: Unknown	and the second s
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Shutdown Information Time Begin: Time End: Total Down Time (mins): Video or Photograph Taken? Drys Brief Description of Footage or Photograph: Notes: Group of 9 dolphing first spothed 700 m swl of temp dock at Dolphing traveled west and were last seen at 1466 still htend: West, approximately 1.5 km from tamp. dock REMSA. Inc. 124 W. Queens Way tampton. VA 23669 Ben Firider Hitter		And the second sec
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REMSA. Inc. 124 W. Queens Way tampton. VA 23669 Ber Fielder HH-	Brief Description of Footage or Photograph:	A CONTRACT OF A
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124 W. Queens Way Hampton, VA 23669 Ben Fielder BH	west, approximately 1.5 km from	
124 W. Queens Way Hampton, VA 23669 Ben Fielder BH	west, approximately 1.5 km from	
tampton, VA 23669		
Tampton, VA 23669 Observer Name / Signature	REMSA, Inc.	<b>D</b>
	REMSA, Inc. 124 W. Queens Way	* Fixider RIH=

	ies Sighting & Shut-Down For	m Corresponding sighting # for the day: 2 Shutdown: for the day
)ate (DD/MM/YYYY):	26/08/243 Time of Initial Sighting	1458 Time Animals Left Area: 1505
Project Name:	CTJV Thimble Shoals Parallel Tunno	cl Island No. 1
Areas Observed:	North + West of L Upland P	ile Driving In-Water Pile Driving
vir Temp: 80"F	Water Temp: 84°F Wave Heig	ht 1.36+ Beaufort Sea State 1-
Veather Conditio	ns: Sunay, Clear	
ercent Cloud Cove		ility Issues: Non-t
Animal Location &	Distance to Pile Driving: 350 m	Nul of tamp. Dock
Type of Pile Drivin;	g Now Active	
Distance From Obs Species Observed:	Betty no67	en North
A REAL PROPERTY OF A READ REAL PROPERTY OF A REAL P	s Sighted (include age classes): 3 A	4/113
Sex of Animals Obs	served: Unknown	The manufacture of the second s
Animal Behaviors	Observed: Traveling	
Animal Heading/D	irection: West n Area: Small Ship traffic	
Shutdown Informa	ation Time Begin:	Shutdown # for the day: N/A
	Time End:	
Total Down	CONTRACTOR AND A CONTRACTOR OF CONTRACT, SAN	
	h Tulon 2 Al Vac	
Video or Photograp	in raken? Of res	
	f Footage or Photograph	
Brief Description of Notes: Delphing	f Footage or Photograph.	~ of Island 1, 350m NU of terry tra last seen at 1505, 750 ft west
Brief Description of Notes: Delphing	f Footage or Photograph.	~ of Island 1, 350m NU of terry ere last seen at 1505, 750 ft west
Brief Description of Notes: Delphing	f Footage or Photograph first spatted Just North a continued West and we t.	r of Island 1, 350m NV of terry tra last seen at 1505, 750 ft west
Notes: Delphing dock. Delphing of temp dost	f Footage or Photograph:	4111
Brief Description of Notes: Delphins dock. Delphins at tomp dost	Footage or Photograph.	4111



of 3

## **Daily Marine Mammal Observer Report**

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NOAANMEST		COLUMN STATE	Project Name: CTJV Parallel Thimble Shoals Tunnel Observer Location (Island #):									
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Weather and V	Inflation In	AND	1 193									
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Location	Time	Air	Water	Visibility		and the second se	ht Wind Spec		cipitation	Beaufort		
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Observation	al and a second	1	1	1	The second second	Martin Mall	1 Maria					
Observer Log Time	INC.	Contraction of the local division of the loc	Contraction of the local division of the loc				1	10,200	111	9.2.40.0		
0630	Innes (p	Notes: (pre-watch times, start and stop times for pile driving activities, shift changes, human activities)										
0651				4 000	and int			e				
0744	Tordi	CACE	1510400	1101	ong wind	2		2.81	1111			
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0837 0839 0921	JOFT	start	00 8 0	ile m s	ighting	batel		II and				
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1051	DO MI	O NOIT	neno	5, 00 3	approx		sor sent			and the second second		
1108	Beam	30 min watch ends, no sightings Begin, Lude of Epile, borr start										
1119	Two	dolph	is abse	ried ~ lo	com from	Epile	an sta			10.00		
1128	DUNIA	N COU	prete,	30 min p	ast whitch	begins		- 1982."N				
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1229	Seam	AL PIO	gress t	anker tr	OVELING E.	ton	and the second	- 346 49	10 training			
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And a state of the	and the second se	otal	# Adults		Closest	State of Concession, Name	and the second se			Time		
the second s		otal lumber	# Adults	# of Juveniles	Distance to	or	down? S	Shut-	A Property of the local division of the	Time last seen		
Time Sp	r	lumber	# Adults		Distance to Pile Driving	or Behaviors	down? S (yes/no) c	Shut- Iown	Start Up	last seen		
Fime Sp 11:19:9 TU	151005		# Adults		Distance to Pile Driving	or Behaviors Traveling	down? S (yes/no) c NO	Shut- Iown NIX	Start Up	last seen		
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Fime Sp 11:19:9 TU	151005	lumber	# Adults		Distance to Pile Driving	or Behaviors Traveling	down? S (yes/no) c NO	Shut- Iown NIX	Start Up	last seen		
Time Spi 11:19:9 TU	151005	lumber	# Adults		Distance to Pile Driving	or Behaviors Traveling	down? S (yes/no) c NO	Shut- Iown NIX	Start Up	last seen		
Fime Sp 11-19-9 TU 15:29 TU	151075 151075	lumber	# Adults		Distance to Pile Driving	or Behaviors Traveling	down? S (yes/no) c NO	Shut- Iown NIX	Start Up	last seen		
Fime Spi 11-19-9 Tu 15:29 Tu Daily Summary	151075 151075	lumber 2 1	# Adults	Juvenites	Distance to Pile Driving UDOM USOM	or Behaviors Traveling	down? S (ycs/no) c NO NO	Shut- Iown NIA NIA	Start Up	last seen		
Fime Spi 11-19-9 Tu 15:29 Tu Daily Summary	151005 151005	lumber 2 1		Juvenites	Distance to Pile Driving UDOM USOM	or Behaviors Traveling	down? S (yes/no) c NO NO	Shut- Iown NIA NIA	Start Up	last seen		
Fime Spanners	Total Number	lumber 2 1		Juvenites	Distance to Pile Driving UDOM USOM	or Behaviors Traveling	down? S (ycs/no) c NO NO	Shut- Iown NIA NIA	Start Up	last seen		
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Time Spi 11-19-9 Tu 15-29 Tu 15-29 Tu Daily Summary Species Tur51005	Total Number	lumber 2 1		Juvenites	Distance to Pile Driving UDOM USOM	or Behaviors Traveling	down? S (ycs/no) c NO NO	Shut- Iown NIA NIA	Start Up	last seen		
Time Spi 11-19-9 Tu 15-29 Tu 15-29 Tu Daily Summary Species Tur51005	Total Number	lumber 2 1		Juvenites	Distance to Pile Driving UDOM USOM	or Behaviors Traveling	down? S (ycs/no) c NO NO	Shut- Iown NIA NIA	Start Up	last seen		
Time Sp	Total Number		Takes in Z	Juveniles one A Tal	Distance to Pile Driving UDOM USOM	or Behaviors Traveling	down? S (ycs/no) c NO NO	Shut- Iown NIA NIA	Start Up	last seen		
Time Spi 11-19-9 Tu 15-29 Tu 15-29 Tu Daily Summary Species Tur51005	Total Number			Juveniles one A Tal	Distance to Pile Driving UDOM USOM	or Behaviors Traveling	down? S (yes/no) c NO NO NO	Shut- town NIA- NIA- NIA- S	Start Up NIA NIA	last seen 11.23~ 1(001		
Fime Spi 11-19-9 Tu 15-291 Tu Daily Summary Species Furstops Thereous	Total Number		Takes in Z	Juveniles one A Tal	Distance to Pile Driving UDOM USOM Kes in Zone B	or Behaviors Traveling	down? S (yes/no) c NO NO NO	Shut- town NIA- NIA- NIA- S	Start Up NIA NIA	last seen		

Protected Species Sighting & Shut-Down Form       Corresponding sighting & for the day         Date 1000/MM/YYYH:       25/08/2020       Time of latital Sighting ILPA       Time Animuls Left Area:       123-         Project Name:       CTIV Thimble Shoals Parallel Tunnel       Island No.       15/03/04       123-         Project Name:       CTIV Thimble Shoals Parallel Tunnel       Island No.       15/03/04       1         Areas Observed:       N. of Island 1       Upland Pile Driving       In-Water Pile Driving       X         Arter Conditions:       Sundy:       Widdy (9.3.65)       Percent Cloud Cover:       Q.       Percent Glar::       Q. Visibility Issues:       North         Project Name:       Contract Glar::       Q. Visibility Issues:       North       Animal Location & Distance to Pile Driving:       Net of Island Tool       Animal Location & Distance to Pile Driving:       Net of Animal State Colon       Species Observed:       Environment State Colon         State Group Observer When failaitly Observed:       LOCAN       Species Observed:       Nather Conditiones       Species Observed:       Nather Colon         Species Observed:       Intractione       Species Observed:       Intraction       Species Observed:       Nather Colon         State of Pile Driving       Intractione       Specis Observed:       Nather Colon <t< th=""><th></th><th></th><th></th></t<>			
Shudown       Ø       for the day         Project Name:       CTIV Thimble Shoals Parallet Tunnel       Island No.       Island No.       Island A         Project Name:       CTIV Thimble Shoals Parallet Tunnel       Island No.       Island No.       Island A         Project Name:       CTIV Thimble Shoals Parallet Tunnel       Island No.       Island No.       Island A         Areas Observed:       NC of Island 1       Upland Pile Driving       In-Water Pile Driving X         Venther       Conditions:       Sundown:       In-Water Pile Driving X         Venther Conditions:       Sundy, Wicky (9.3 (45))       Percent Cloud Cover:       Q         Percent Cloud Cover:       Q       Percent Glare:       Q.       Visibility Issues:       North         Distance From Observed:       Environg:       New field Internation       Distance From Observed:       Island Pile Driving:       No         Studown Information       Inter End:       True End:       True End:       True End:         Total Down Time (mins):       Woldes or Photograph:       Internation       Internation         Studown Information       Shudown # for the day:       NA         Time End:       True End:       True End:       True End:         Total Down Time (mins):       Woldesorthol			
Date (DD/MM/YYY:       25/06/2020       Time of Initial Sighting []: Ac.       Time Animals Left Area:       [] 23-         Project Name:       CTIV Thimble Shoals Parallel Tunnel       Island No.       (Stoard 1         Versee Observed:       NE of [S[6:nd 1]       Upland Pile Driving       In-Water Pile Driving       X         Air Temp:       [] 11       Water Temp:       [] 50 °] Wave Height       [] 10 Ft       Beaufort Sen State       3         Weather       Conditions:       Shundy, Nicdy (] 33 (S2)       Dock       Dock       Animals Location & Distance to Pile Driving:       Net of Sen State       3         Percent Cloud Cover:       [] 0       Percent Glare:       [] Visibility Issues:       Nock         Animal Beading/Drivetion:       [] 0       Percent Glaved ()       [] 000m       Proof Act/         Projectis Observed:       [] 0       Percent Glaved ()       [] 000m       Proof Act/         Projectis Observed:       [] 0       Percent Glave ()       [] 000m       Proof Act/         Set of Animals Sighted (include age classes):       2, withoneach       Shutdown # for the day:       N/A         Shutdown Information       [] 10       Shutdown # for the day:       N/A         Shutdown Information       [] 10       Proof Sighted about to Con NE of pile driving activit	Protected Spec	ies Sighting & Shut-Down Form	Corresponding sighting # for the day
Date (DD/MMAYNYI):       25/06/220D Time of Initial Sighting [][A ~ Time Animuls Left Area: [] 23-         Project Name:       CTIV Thimble Shoals Parallel Tunnel       Island No. (Staard 1)         Areas Observed:       N. OF Islaard 1       Upland Pile Driving In-Water Pile Driving X         Areas Observed:       N. OF Islaard 1       Upland Pile Driving In-Water Pile Driving X         Areas Observed:       N. OF Islaard 1       Upland Pile Driving In-Water Pile Driving X         Areas Observed:       N. OF Islaard 1       Upland Pile Driving In-Water Pile Driving X         Neather       Conditions:       Standy 1, NYAdy (9.3.45)         Percent Cloud Cover:       Q. Percent Glare:       Q. Visibility Issues: NDAL         Animal Location & Distance to Pile Driving:       N. Color Activation       Distance From Observer When Initially Observed: LoOPA         Species Observed:       Devines Addition       Distance From Observed: Intelevence Addition       Sec of Animals Observed: Unity Observed: LoOPA         Animal Behaviors Observed:       Datations & Distance to Pile Driving       Adverved       Shutdown # for the day: N/A         Animal Behaviors Observed:       Intelevence       Material Shurd Doates       Shutdown # for the day: N/A         Shutdown Information       Time Begin:       Shutdown # for the day: N/A       N/A         Notes:       Two Doender Dese Observed H: 23e <td></td> <td></td> <td>Shutdown: Ø for the day</td>			Shutdown: Ø for the day
Project Name:       CTIV Thimble Shoals Parallet Tunnel       Island No. Islaard 1         Arens Observed:       NE of Island 1       Upland Pile Driving       In-Water Pile Driving X         Air Temp:       The of Island 1       Upland Pile Driving       In-Water Pile Driving X         Air Temp:       The of Island 1       Upland Pile Driving       In-Water Pile Driving X         Air Temp:       Temp:       Water Tomp:       Upland Pile Driving       In-Water Pile Driving X         Venther       Conditions:       Sympy Nirdly (9.3 (%).       Percent Gloud Cover:       Q. Percent Glare:       Q. Visibility Issues:       None         Animal Location & Distance to Pile Driving:       NE of Island 1, 1000m from dott       Type of Pile Driving Longate:       None         Animal Behaviors Observed:       UNADONA       Animals Substreet:       UNADONA         Animal Behaviors Observed:       UNADONA       Animals Diberved:       UNADONA         Animal Behaviors Observed:       UNADONA       Animal Behaviors Observed:       UNADONA         Animal Behaviors Observed:       UNADONA       Animal Behaviors Observed:       UNADONA         Animal Behaviors Observed:       UNADONA       Shutdown # for the day:       Nfg         Shutdown Information       Time Begin:       Time Begin:       Nfg <t< td=""><td></td><td></td><td></td></t<>			
Areas Observed:       NE of Island 1       Upland Pile Driving       In-Water Pile Driving X         Air Temp:       Tif Water Temp:       165 0°F Wave Height 1 Uft       Beaufort Sea State 3         Veather Conditions:       Sunny, Windy (9.3.65)       Percent Cloud Cover:       0       Percent Glare:       0, Visibility Issues:       None         Animal Location & Distance to Pile Driving:       NE of Island, 1, UOD from dock       Dock         Distance From Observed:       Unitable Curtain       Distance To Pile Driving:       NE of Island       Doc from dock         Species Observed:       Distance to Pile Driving:       NE of Island       UoD from dock       Dock         Species Observed:       Distance to Pile Driving:       At of the Island       Doc from dock       Dock         Sex of Animals Sighted (include age classes):       2, UNEDDAD       Sex of Animals Sighted (include age classes):       2, UNEDDAD         Sex of Animals Distance for Observed:       Traveling       Animal Beaviors Observed:       Traveling         Animal Beaviors Observed:       Traveling       Automine to as:       NJR         Minus Activities in Area:       Social fishing boats       Shutdown # for the day:       NJR         Time End:       Time End:       No       Yes       Shutdown # for the day:       NJR	ate (DD/MM/YYYY):	25 08 2020 Time of Initial Sighting 1	Ma Time Animais Lett Area: 11 204
Kit Temp: 1916       Water Temp: 15.0°F Wave Height 1.10ft       Beaufort Sea State 3         Neather Conditions: Sunoy, Nordy (9.3.85)         Percent Cloud Cover: 0       Percent Glare: 0, Visibility Issues: NDAL         Animal Location & Distance to Plite Driving: NE of Island 1, 100m from dotk         Type of Plite Driving Loya (1, 10, 00m from dotk         Type of Plite Driving Loya (1, 10, 00m from dotk         Type of Plite Driving Loya (1, 10, 00m from dotk         Species Observed: Externation         Distance From Observed: LOYON         Animal Behaviors Observed: Taykon         Set of Animals Sighted (include age classes): 2, unknown         Animal Behaviors Observed: Taykon         Shutdown Information         Time Endi:         Total Down Time (mins):         Video or Photograph Taken? No Yes         Brief Description of Foolage or Photograph:	roject Name:	CTJV Thimble Shoals Parallel Tunnel	Island No. Island 1
Weather Conditions: Suppy, Wirdy (9.3 (45))         Percent Cloud Cover:	Areas Observed:	NE of Island 1 Upland Pile I	DrivingIn-Water Pile Driving
Percent Cloud Cover:	Vir Temp: <u>19*</u> F	Water Temp: 45 8"F Wave Height	Beaufort Sea State 3
Percent Cloud Cover:          Percent Glare:          Visibility Issues:       None         Animal Location & Distance to Pile Driving:          ME of Pile Driving:          Manual Location & Distance to Pile Driving:               Me of Pile Driving:              Medocity Issues:              Monte Pile Driving:              Medocity Issues:              Monte:              Down from dock              Down from	Weather Conditi	ons: Sunny, windy (9.3 Kts)	
Animal Location & Distance to Pile Driving: ME of Island 1, U00m from dack         Type of Pile Driving Impact of all bubble.currain         Distance From Observed: When Initially Observed: L000m         Species Observed: Botherose dolphin         Number of Animals Sighted (include age classes): 2, U0K00000         Animal Heading/Direction: Edst         Human Activities in Area: Small fishing boats         Shutdown Information         Time Begin:         Time Begin:         Time End:         Total Down Time (mins):         Video or Photograph Taken?         No Yes         Brief Description of Footage or Photograph:         Notes:       Two bothlenose dolphins, sighted abount boom NE of pile driving activity.         Traveled E. Lost Sighted N: 23a         REMSA. Inc.         IJW Queens Way         Humpuon: VA 23669			Issues: None
Type of Pile Driving _Invact_tyl_bubble_Curtain Distance From Observer When Initially Observed: LOCM Species Observed: Battlefores, dolphin Number of Animals Sighted (Include age classes): 2, utblebouxh Sex of Animals Observed: Unvorted: LaCM Animal Behaviors Observed: Invelored Animal Behaviors Observed: Invelored Animal Heading/Direction: Edst Human Activities in Area: _Seque.fishting boats Shutdown Information Time Begin: Total Down Time (mins); Video or Photograph Taken? No Yes Brief Description of Footage or Photograph: Notes: _Two populerose dolphins_sighted about LoCem NE of pile driving activity. Traveled E. Lost sighted II:23a Nichole Rever June / Sig Nichole Rever June / Sig			
Type of Pile Driving _Invact_tyl_bubble_Curtain Distance From Observer When Initially Observed: LOCM Species Observed: Battlefores, dolphin Number of Animals Sighted (Include age classes): 2, util/conucil Sex of Animals Observed: Travelung Animal Behaviors Observed: Travelung Animal Heading/Direction: Edst Human Activities in Area: _Sequil_fishting boats Shutdown Information Time Begin: Time Begin: Time Begin: Total Down Time (mins); Video or Photograph Taken? No Yes Brief Description of Footage or Photograph: Notes: Two populerose dolphins_sighted about 400cm NE of pile driving activity. Travelet E. Lost sighted II:23a Nichole Rever Laway fumpuoi. VA 23669	Animal Location	& Distance to Pile Driving: NE of Islan	nd.1, 400m from dock
Species Observed:       Both (most dolphin)         Number of Animals Sighted (include age classes):       2, ut/KDDLWD         Sex of Animals Behaviors Observed:       Unixown         Animal Behaviors Observed:       Yn Welmag         Animal Heading/Direction:       Eds+         Human Activities in Area:       Second Life/Ning boats         Shutdown Information       Shutdown # for the day:         Time Endi:       Time Endi:         Total Down Time (mins):       Shutdown # for the day:         Video or Photograph Faken?       No Yes         Brief Description of Footage or Photograph:       Sighted about 100cm NE of pile driving activity         Notes:       Two both lenose dolphins, sighted about 100cm NE of pile driving activity         Traveled E       Losat sighted N: 23a         REMSA, Inc.       Nichole Reres       Muchawith Scenner for Me         12 W. Oucers Way       Signature / Signa	Type of Pile Drivi	ng Impact w bubble curtain	
Number of Animals Sighted (include age classes): 2, unkbouch         Sex of Animals Observed: Unknown         Animal Behaviors Observed: Traveluing         Animal Behaviors Observed: Traveluing         Animal Heading/Direction: Edst         Human Activities in Area: Second Lastwog Woats         Shutdown Information         Time Begin:         Time Engin:         Time Engin:         Total Down Time (mins):         Video or Photograph Taken?         No         Prior Description of Footage or Photograph:         Notes:         Two bothlerose dolphins, sighted about Woeth NE of pile driving activity.         Traveled E         REMSA.Inc.         124 W. Queens Way         Impton: VA 23669			
Sex of Animals Observed: UnVnOm Animal Behaviors Observed: TrAveling Animal Heading/Direction: East Human Activities in Area: Sequel_fishing boats Shutdown Information Time Begin: Shutdown # for the day: N/A Time End: Total Down Time (mins): Video or Photograph Taken? No Yes Brief Description of Footage or Photograph: Notes: Two DotHenose dolphing sighted about boern NE of pile driving activity. Traveled E Lost sighted 11:23a REMSA, Inc. 124 W. Queens Way Hampton. VA 2369			
Animal Behaviors Observed: Traveling Animal Heading/Direction: E45+ Human Activities in Area: Sequel_fisturg locats Shutdown Information Time Begin:			anna
Animal Heading/Direction: East Human Activities in Area: Small fishing boats Shutdown Information Time Begin: Time End: Total Down Time (mins): Video or Photograph Taken? No Yes Brief Description of Footage or Photograph: Notes: Two bothlenose dolphins, sighted about woom NE of pite driving activity. Traveled E. Last signed 1:23a REMSA. Inc. 124 W. Queens Way Hampton: VA 23669 Nickhole Reree J. Jack			
Human Activities in Area:       Shall fishing boats         Shutdown Information       Time Begin:         Time End:       Shutdown # for the day:         Total Down Time (mins):       Shutdown # for the day:         Video or Photograph Taken?       No Yes         Brief Description of Footage or Photograph:       Shutdown NE of pile driving activity         Notes:       Two bothlerose dolphins, sighted about woom NE of pile driving activity         Waveled E       Last sighted h: 23a         REMSA. Inc.       Nichole Rerce Manual         I24 W. Queens Way       Nichole Rerce Manual         Isoto vide Scenario (Stenario)       Nichole Rerce Manual         Observer Name / Ste       Marka with Scenario for Ma			
Shutdown Information       Shutdown # for the day: M/A         Time End:       Shutdown # for the day: M/A         Total Down Time (mins):       Wideo or Photograph Taken? No Yes         Brief Description of Footage or Photograph:       Shutdown NE of pile driving activity.         Notes:       Two bothlerose dolphins, sighted about boom NE of pile driving activity.         Yraveled E       Last sighted 1:23a         REMSA. Inc.       Nichole Reree Manual         124 W. Queens Way       Nichole Reree Manual         Hampton, VA 2369       Nichole Reree Manual			
Time Begin:       Shutdown # for the day: NA         Time End:       Time End:         Total Down Time (mins):       Video or Photograph Taken? No Yes         Brief Description of Footage or Photograph:       Shutdown # for the day: NA         Notes:       Two bothlenose dolphins sighted about 400cm NE of pile driving activity         Waveled E       Lost sighted 11:23a         REMSA, Inc.       Nichole Rerect Much         124 W. Queens Way       Nichole Rerect Much         Itempton, VA 23669       State State	Human Activities	in Area: Small tisting boats	
Time Begin:       Shutdown # for the day: NA         Time End:       Total Down Time (mins):         Video or Photograph Taken?       No Yes         Brief Description of Footage or Photograph:	The second second		
Time Begin:       Shutdown # for the day: NA         Time End:       Time End:         Total Down Time (mins):       Video or Photograph Taken? No Yes         Brief Description of Footage or Photograph:       Shutdown # for the day: NA         Notes:       Two bothlenose dolphins sighted about 400cm NE of pile driving activity         Waveled E       Lost sighted 11:23a         REMSA, Inc.       Nichole Rerect Much         124 W. Queens Way       Nichole Rerect Much         Itempton, VA 23669       State State			
Time Begin:       Shutdown # for the day: NA         Time End:       Time End:         Total Down Time (mins):       Video or Photograph Taken? No Yes         Brief Description of Footage or Photograph:       Shutdown # for the day: NA         Notes:       Two bothlenose dolphins sighted about 400cm NE of pile driving activity         Waveled E       Lost sighted 11:23a         REMSA, Inc.       Nichole Rerect Much         124 W. Queens Way       Nichole Rerect Much         Itempton, VA 23669       State State			State of the second
Time End:         Total Down Time (mins):         Video or Photograph Taken?         No Yes         Brief Description of Footage or Photograph:         Notes:       Two bothlenose dolphins, sighted about 400cm NE of pile driving activity         Traveled E       Loser sighted 11:23a         REMSA, Inc.       Nichole Rerce 1000000000000000000000000000000000000	Shutdown Inform		
Total Down Time (mins):         Video or Photograph Taken?         No         Brief Description of Footage or Photograph:         Notes:         Two bottlenose dolphins, sighted about 400cm NE of pile driving activity.         Traveled E         Last sighted 11:23a         REMSA. Inc.         124 W. Queens Way         Hampton, VA 23669         Nichole Rerea         Mada with Scappor for Me			Shutdown # for the day: NR
Video or Photograph Taken? No Yes Brief Description of Footage or Photograph: Notes: Two bothlerose dolphins sighted about woom NE of pile driving activity Traveted E Lost sighted 11:23a REMSA. Inc. 124 W. Queens Way Hampton. VA 23669			
Brief Description of Footage or Photograph:         Notes:       Two bottlenose dolphins sighted about boom NE of pile driving activity         Traveled E Lost sighted 11:23a         REMSA, Inc.         124 W. Queens Way         Hampton, VA 23669	Total Down	Time (mins):	
Brief Description of Footage or Photograph:         Notes:       Two bottlenose dolphins sighted about boom NE of pile driving activity         Traveled E Lost sighted 11:23a         REMSA, Inc.         124 W. Queens Way         Hampton, VA 23669	Midao or Dhotour	wh Takan? No Vac	
Notes: Two bottlenose dolphins sighted about 600m NE of pile driving activity. Traveled E Lost sighted 11:236 REMSA.Inc. 124 W. Queens Way Hampton VA 23669	VIDEO OF FILOLOGIE	ipir rakeni (No) rea	
Notes: Two bottlenose dolphins sighted about 600m NE of pile driving activity. Traveled E Lost sighted 11:236 REMSA.Inc. 124 W. Queens Way Hampton VA 23669	Brief Description	of Footage or Photograph:	
REMSA, Inc. 124 W. Queens Way Hampton, VA 23669 REMSA Hampton, VA 23669 REMSA Hampton, VA 23669 Hampton, VA 23669 Hampt	Bher Description	of Footage of Friendsham	
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REMSA, Inc. 124 W. Queens Way Hampton, VA 23669 Remotion, VA 23669 Remotion VA 23669 Remotion VA 23669 Remotion VA 23669	Notes: Two by	#lenose dolphins sighted about 1	DOOM NE of pile driving activity.
REMSA, Inc. 124 W. Queens Way Hampton, VA 23669 Remotion, VA 23669 Remotion VA 23669 Remotion VA 23669 Remotion VA 23669	Traveled E	Last sighted 11:23a	
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1	Protected Species Sighting & Shut-Down Form 3
	Corresponding Sighting # for the Day: <u>2</u> Shutdown # for the Day: <u>6</u>
	Date (OD MM YYYY): 25 08 2020 Time of Initial Sighting 3:59e Time Animals Left Area: 4:0 e
	Broject Name: CTJV Thimble Shoals Parallel Tunnel Island No. (6104001)
	Areas Observed: NW of Gland 1 Upland Pile DrivingIn-Water Pile Driving X
	Air Temp: 89rr Water Temp: 10.8°F Wave Height 10ft Beaufort Sea State 3
	Weather Conditions: Surry, Windy (11.7Kts)
	Percent Cloud Cover: 107. Percent Glare: 0 Visibility Issues: None
	Animal Location & Distance to Pile Driving: NW of 19/0nd1, 450m from temp dock Type of Pile Driving Continuous (Vibration)
	Distance From Observer When Initially Observed: ~500m
	Species Observed: Bottlemese dolphin Number of Animals Sighted (include age classes): 4 odwit
	Sex of Animals Observed: 1/1/2/10/09/1
	Animal Behaviors Observed: Traveling
	Animal Heading/Direction: E Human Activities in Area: None
)	
	Shutdown Information
	Time Begin: Shutdown # for the day: NIA
	Time End: Total Down Time (mins):
	Video or Photograph Taken?: No Yes
	Brief Description of Footage or Photograph
	Notes: One adult dolphin sighted 450m from temporary dexk. Initially pressued
	Notes: One adult dolphin sighted 450m from temporary dock. Initially observed to be possibly Feeding, then headed E and was not seen again
	REMSA, Inc. QEMSA
	124 W. Queens Way Nichole Pierce Munth
1	Hampton, VA 23669 Observer Name / Sta
	(757)722-0113 Observer Name / Sig Made with Scanner for Me

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## Daily Marine Mammal Observer Report

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	FS Permit 1H		020		Observer Location (Island #): 1							
	24/1 2				Shift Start: 1135							
Suntise 0			194		Shift End: 19	210						
	d Visibility I						and the second second			Beaufort		
ocation	Tune	Air Temp	Water Temp	Visibility (Good, Fair, Port)	Cloud Cover (%)	Wave Heigh (R)	Wind Speed & Direction	Precip	itation	Scale		
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the start error	Canada Concentration		-		No. Free St. A.	1.121	The second	1	1000	1 - Stranger		
Observer U	ng	-	1					1	1933			
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			Shutdown	Street and a street of the	for the day
Date (DD/MM/YYYY):	Time of I	Initial Sighting /	Yan Time	Animals Left Area	19-27-
Project Name:	CTJV Thimble Shoal	Parallel Tunnel	Island No	·	
Areas Observed:	Poster comme	Upland Pile	Driving	n-Water Pile Drivi	og
Air Temp: 32	Water Temp: <u>80</u>	Wave Height	194	Beaufort Sea Sta	
Weather Condition	S: Land	and the second s	رو مسیر دوری رو در می داد. می رو سیر دوری رو در می داد.	ana ang ang ang ang ang ang ang ang ang	ana u nana di Balgina manan
Percent Cloud Cover	Percent Gla				
Animal Location & I	Distance to Pile Driving				
a provide a sector de la construcción de la					
	Ver When Initially Ob Boillengoe Dolpho				
lumber of Animals S	Sighted (include age cla	10			
nimal Behaviors Of					
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luman Activities in a	Area: none				
					and a read
hutdown Informatio					
	me Begin: Time End:		Shutdown # for	the day: N/4	4
Total Down Tin		Name and Address			
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ideo or Photograph 1	aken? (No ) es				
rief Description of Fo	otage or Photograph:				
				1000	
	Contractor and a life		Contraction of the second		
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ites: animals fin Iphino were trai ve channel			COLVE LEFT COLVE		
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lphino were trav ve channel					-10-5
ASA, Inc.	REMSA				
ASA, Inc. W. Qucens Way					
ASA, Inc.	REMSA	Elica Ublff Observer Name	Signature		

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## **Daily Marine Mammal Observer Report**

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ntractor: CT.	IV / Dragado:	\$			Project Name: CTJV Parallel Thimble Shoals Tunnel Observer Location (Island #): 1							
AA/NMFS	Permit: IHA	March 202	20		Observer Loc	ation (Island	#): 1					
te: 8/13/	2020				Shift Start: 0630							
nrise: 062	1		1958	)	Shift End: 18	300						
ather and V	lisibility Info	ormation										
cation	Time	Air	Water	Visibility	Cloud Cover	Wave Heigl			ipitation	Beaufo		
		Temp	Temp	Good, Fair,	(%)	(ft)	& Direct	ion		Scale		
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and I	0700	79		Good	20		7KŁ (	$n \mid \alpha$	one	S		
sland I	1785	79		6000	90	4	9 Kt	22 n	ne	3		
oserver Log												
me	Notes: (pr	e-watch ti	mes, start	and stop tin	mes for pile driv	ving activities	s, shift chan	ges, huma	<u>n actiivtie</u>	5)		
630	nichol	e catc	hes bu	5								
653		e arri	ives or	Tolon	2							
0700	Erica	catch										
753	Erica			Tolon	d				÷			
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633	Tua a	nà hour	e bora	in char	nnel (1) to	e .						
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735	5400	watch										
800	Icatch	ride	at your	<u>b</u>								
810	Arrive	e at	yard									
01.1.41			<u> </u>									
Sighting Log		T-4-1	# Adults	4.5	Closest	A states	Church .	TT:	Time of	In:		
Time	Species Total		# Adults			Activity	Shut		1	1		
		Number	1	Juveniles	Distance to	or	down?	Shut-	Start Up	last seen		
623	T. truncativ	a	a	Ø	Pile Driving	Behaviors	(yes/no)	down 17/A	n/A	1627		
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D. 0. 0	L			L					I	L		
Daily Sumn						14.01						
Species	Total Number	_	Takes in 2	Lone A	Fakes in Zone B	# Shut-Dow	ms Comm	ents				
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1. DEMOCO	<u>ma o</u>		Ø			ø						
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Protected Spec	ies Sighting & Shut-Down Form	Corresponding sighting # for	2 of the day:
		Shutdown: 7)/A	for the day
Date (DD/MM/YYYY):	13/08/2020 Time of Initial Sighting 1	623 Time Animals Le	it Area: 162 💭
Project Name:	CTJV Thimble Shoals Parallel Tunnel	Island No.	
Areas Observed:	North of Island   Upland Pile		
Air Temp: <u>79</u>	Water Temp: <u>85</u> Wave Height	39t Beaufort	Sea State <u>3</u>
Weather Conditio	ns: Cloudy with winds of 9	kts ne	
Percent Cloud Cove	er: 90% Percent Glare: 1% Visibility	y Issues: <u>none</u>	
Animal Location &	Distance to Pile Driving: <u>300m</u>		·····
Type of Pile Drivin	g impact		
Species Observed	Berver When Initially Observed: <u>300m</u>	<u> </u>	
Species Observed: Number of Animal	Bottle nose Dolphins		
Sex of Animale Ob-	s Sighted (include age classes): <u>+wo</u>		
Animal Rehaviore	served: <u>unknown</u>		
Animal Boadt-am	Observed: traveling	······································	
Autual Licautug/D	irection: North n Area: <u>N/a</u>		
Shutdown Informa 	Time Begin: Time End:	Shutdown # for the day:	
Video or Photograp			
Notes: Final and	held include and DOLL		
to shore (In	shted single pair of Dolphins ice animals dove did not	traveling North an	d parrallel
	ice animals hove did not	see next surfacing	·
······			,
			(
REMSA, Inc.	GEMS		
124 W. Queens Way	Erica Wolf	1811-1111	
Hampton, VA 23669			
(757)722-0113	Observer Name	Signature	

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### Daily Marine Mammal Observer Report

Contractor: (			CONTRACTOR OF		Project Name			Colorester in the		in the second se	
	FS Permit IH	A March 2	020		Observer Loc		11: 1	- 200	200	for a second	
Date OR	12/2020	REAR AND			Shift Start: 0	650			Sec. 20	121.000	
Sunrise 66		Sunset	2021	Contraction of the	Shift End: 0162						
	d Visibility I	formation	1				Sc. 1977.				
Location	Time	Air Temp (F)	Water Temp (F)	Visibility (Good, Fair, Poor)	Cloud Cover (%)	Wave Heigl (R)	t Wind Spec		pitation	Beaufort Scale	
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Island			86	6000	80	-2	13kt A	NN	1-2	2	
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Observer L									1000000000		
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Observer Names: Ben Fieldst, Nichola Pieren

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	<b>Protected Species Sighting &amp; Shut-Down Form</b>
orresponding Sightin	g # for the Day: Shutdown # for the Day:
Date (DD/MM/YYYY)	12/88/100 Time of Initial Sighting 1820 Time Animals Left Area: 1133
A BASIS	
Project Name:	CTJV Thimble Shoals Parallel Tunnel Island No.
Areas Observed:	East North, North Work Upland Pile Driving In-Water Pile Driving
Air Temp: <u>90</u> *F	Water Temp: 31 Wave Height 17 Beaufort Sea State 2
Weather Conditio	ma: Sunny, Wind GKT NWE
Percent Cloud Cove	er: 10 Percent Glare: 1 Visibility Issues: Nonz
Animal Location &	Distance to Pile Driving:
Type of Pile Drivin	8 Inpact with Bubble Curtain
Species Observed	Bettlenges Polthy
umber of Animal	s Sighted (include age classes): 2. Adults 1 Juranile
Sex of Animals Obs	served: Dakabara
Animal Behaviors (	Observed: Feeding, Transling
Animal Heading/Di	irection: Eget then wat
tuman Activities in	Area: Impact Hammer With Bubble Critein Large Ship
<b>建筑,整理的主义</b> 。	
Week and she was	
Shutdown Informa	
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REMSA, Inc. 24 W. Queens Way Iampton: VA 23669 7571722-0113	Ben Fit (Jet Steff- Observer Name / Signature
24 W Queens Way lampton. VA 23669	





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·	Protected Species Sighting & Shut-Down Form Z ~4
Corresponding Sight	ing # for the Day: N/K
Date (DD MM-YYY	W: 01/03/100 Time of Initial Sighting 1130 Time Animals Left Area: 1140
Project Name:	CTIV Thimble Shoals Parallel Tunnel Island No. 2
Areas Observed:	W/NV of Island 1 Upland Pile Driving NA In-Water Pile Driving NA
Air Temp: 55	Water Temp: 25" Wave Height 1ft Beaufort Ses State 1
Weather Condi	Hons: Swary, wind 7kin NNW
	over: 20 Porcent Glare: 5 Visibility Issues: North
Distance From Q	& Distance to Pile Driving: Som South of Pier, 75m West of Jaland ing None Active, Setting of for DTH + Impact Observer When Initially Observed: 50m
Number of Anim	d: Battle asse Dalpha ials Sighted (include age classes): 1 Adult
	Deserved: Jlateling
8 miles 8 8 8 10 10	
Human Activitie	s in Area: Sphall boot fla flic
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Shuidown Infor	
	Time Begin: Shutdown # for the day://A Time End:
Total Dow	n Time (mins)
Video or Photogr	aph Taken?: No Yes
Brief Description	of Footage or Photograph:
-	
	- First Spottad So an south of pier, hending N. Passed unlar Controved North, Lost Soon at 1140 still herded North, 90000
RPASA, Inc. 124 W. Cuerni WØS	Ben Fielder / BAL
RFAISA, Inc 124 W. Queens Was Humpton, VA 23669	Ber-Fielder/ Black

Corresponding Sighting # for the Day: 2 Shutdown # for the Day:	
	N/A
Date (DD MMYYYY): 1)/09/2000 Time of Initial Sighting 11.55 Time Animals Left At	
Project Name: CTJV Thimble Shoals Parallel Tunnel Island No.	-
Areas Observed: North of Jol-d 1 Upland Pile Driving rove In-Water Pile Dr	iving
Air Temp: 34 Water Temp: 85 Wave Height 184 Beaufort Sea	State
Weather Conditions: Summy	
Percent Cloud Cover: 470 Percent Glare: 1% Visibility Issues: Flon e -	
Animal Location & Distance to Pile Driving: 700000	
Species Observed: <u>Delete nove</u> Delonin's Number of Animals Sighted (include age classes): <u>4 adults</u>	
Sex of Animals Observed: <u>uncharance</u> Animal Behaviors Observed: <u>Date: b.e. deeding</u> unch <u>trave</u> !	
Agimal Behaviors Observed: 2000 C. ALLANA LUISA TRAVE	
Animal Heading/Direction: Southeaston	
ADIMAT PREADING THE COURT AND THE PREAD THE PR	
Shutdown Information Time Begin:	
Shutdown Information       Time Begin:     Shutdown # for the day:	
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Shutdown Jaformation       Time Begin:       Time End:       Total Daws Time (mins):   Video or Photograph Taken?: No Yes	
Animal reading Direction         Human Activities in Area:	
Animal reading Direction       Imail Craft Passing         Human Activities in Area:       Imail Craft Passing         Shutdown Information       Shutdown # for the day:         Time Begin:       Shutdown # for the day:         Time End:       Total Daws Time (mins):         Video or Photograph Taken?:       No Yes         Brief Description of Footage or Photograph:	a travela high-as i Reserve
Animal reading Direction         Human Activities in Area:         Image:	a travela high-as i Reserve
Shutdown laformation Shutdown laformation Shutdown laformation Shutdown laformation Shutdown laformation Shutdown # for the day: Time Ead: Total Dawn Time (mins): Video or Photograph Taken?: No Yes Brief Description of Footage or Photograph: Notes: First :::ghled ewinming: in a light circle with very short distance hime o Draiting intervels oral finght circle with very short distance hime o Draiting intervels oral finght circle with every the orea. I hime oral light circle with result contervely direction ist 12.21 carting in a light circle with contervely direction ist 2.21 carting in a light circle with result contervely direction ist 2.21 carting in a light circle with result contervely direction ist 2.21 carting in a light circle with result carting and rese t, are Diphing using Tod, from cortanize to milling the orea until last sighting a temport later with the orea with sighting and the orea.	a travela high-as i Reserve
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20 a	ng = for the Day: 3 Shutdown # for the Day: 114
orresponding Sighter	ng = for the Day: Shutdown # for the Day:
Date (DD MM YYYY)	1:11/08/2020 Time of Initial Sighting 1546 Time Animals Left Area: 1600
roject Name:	CTJV Thimble Shoals Parallel Tunnel Island No.
reas Observed:	Last Pik Upland Pile Driving In-Water Pile Driving
ir Temp: <u><i>2</i>4</u>	Water Temp: 85 Wave Height ALL Beaufort Sea State
Veather Condition	ons: douising with scruterich showers
ercent Cloud Cov	ver: 90% Percent Glare: 19% Visibility Issues: Enone
Animal Location 6	& Distance to Pile Driving: 200m britering invords pilling.
i i be of i ne meran	
	server When Initially Observed: 200m
pecies Observed:	Bolenne Digrans
Sumber of Anima	Is Sighted (include age classes): <u>5 o'i adu" =</u>
	Observed: Isayet na Direction: Torkh
fuman Activities	in Area: The Dina Polarus passed in toi a: 1552
Shuidown Inform	
	Time Begin: Shutdown # for the day:
Total Dawa	Time (mins);
Video or Photogray	ph Taken?: No Yes
	Containe of Photostranh'
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Votes: First sight	nled and of 15 Riphins trace in paratel to cast share. They than unel and towards a to it is a at about 200m The Dina Riperia cannot the process on delations made their ance The next
Hotes: First sight word into ins	ned pod of 15 Riphins Linne na paratel to cast share They than net and towards a to it is a at about 200m The Dina Relation pared through the area as delphins made their area. The next dologing had six insulting within 105m of art driving
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Notes: First sight Lucred all cons was have been	ned pod of 15 Riphins Line in paratel to cost share They than net and somerids othering of about 200m The Dina Relation pared through the area of delphins mode their area. The next delphins had six insultands coming within 105m of oile driving a the red of pod staged out 250m. Lighting watch come into a hold or operations complemented.
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### Daily Marine Mammal Observer Report

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REMSA, Inc. 142 W Queeens Way Hampton, VA 23668 767-722-0113

Protected Species Sighting & Shut-Down Form Z + F 3
Corresponding Sighting 4 for the Day 1 Shutdown # for the Day N/
Date (DD MM YYYY): 81(0/2020) me of Initial Sighting 6:20. Time Animals Left Aren: 1145
Project Name: CTJV Tlumble Shoals Parallel Tunnel Island No. 1
Areas Observed: Nest + Neith + Fided Upland Pile Drivingin-Water Pile Driving
Air Temp: 19 Water Temp: 14 Wave Height 24 Beaufort Sea State
Weather Conditions: Surry
Percent Cloud Cover: O Percent Glare: O Visibility Issues: N/A
Animal Location & Distance to Pile Driving: 400 m Sw of Teny dack Type of Pile Driving OTH (Not Antive)
Distance From Observer When Initially Observed: 550 m. Species Observed: <u>BOHLONOSE DOIPHING</u>
Number of Animals Sighted (include age classes): 5 115 one juneritie
Animal Behaviors Observed: Julffore feedure Traveleet
Animal Heading/Direction: Valious Human Activities in Area: DTH - teasp. dock small claft the fire
(Aof Active)
Shutdown Information Time Begin: Shutdown # for the day: N/A
Time End:
Total Down Time (mins)
Video or Photograph Taken?
Brief Description of Footage or Photograph:
Notes Jatiel Sighting @8:30, 400m pulatremp dock feeding. Last tight at 9:30 heading E. Spotted again @1123 300m W of Island L. Familing. Last
seen of of Island in neadly NEG1145.
<i>A</i>
REMSALING QEMSO BONFolder
124 W Queens Way Nichole Pierce Min Ver 18442
Hampion, VA 23669 Observer Name / Signature
(157)/122-0113 MESO

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## Protected Species Sighting & Shut-Down Form

	: 8/10/202 Time of te	itial Sighting 04	Shudown # 6 10 _ Time Anhu	als Left Areat: 093
Project Name:	CTIV Thimble Shoals	ParuBel Finnel	Island No.	1
Areas Observed:	NW of they a	Cpland File Driv	Ing <sub>an</sub> In-Wa	ter Pile Drising 🗶
Air Temp: <u>80.</u>	Water Temp:	. Wave Height	Er Bei	ulori Sea State
Weather Conditio	ns: Cleur, Sunn	7		
Percent Cloud Cove	r: 1.0 Percent Glar	e: 0 Visibility Iss	urs: Mon-L	
Type of Pile Driving	Distance to Pile Driving: p DTH (Aot Achy	ru)	لمرا ل	
	ersor When Initially Uhs Ballic wear Del		-	
	Sighted (include age class			
vex of Animals ()bs	erved: Unknow	n		
Animal Behaviors (	Married Frading	Trading		
Animal Heading Di	rection: Wast	L H Ar D	Ell Cianata	4-1
Shutdown Informa 1	tion Time Begin: Time End;	Shy	iduwn # for the di	y: <b>V/A</b>
Total Down T	Linte ( db) 05 11			
Total Down T				
Video or Photograph				
Video or Photograph	Taken'/: No Yes			- 4
Video or Photograph Brief Description of	Taken': No Yes Footage or Photograph	chart theme 2		
Video or Photograph Brief Description of	Taken': No Yes Footage or Photograph	short time ( w/ (20937.	D 0930 NW	+ Is /and 1.
Video or Photograph Brief Description of	Taken'/: No Yes	short time ( w/ (\$) 0937.	D 0930 N-	-4 Js/2.
Video or Photograph Brief Description of	Taken': No Yes Footage or Photograph	short time ( w/ (\$) 0937.	D 0930 NW	• + J = /and 1.
Video or Photograph Brief Description of	Taken': No Yes Footage or Photograph	short time ?	0930 NV	-4 Js/2.
Video or Photograph Brief Description of Nutres First gate States in	Taken': No Yes Footage or Photograph	······································	+31/	• f Js/and 1.
Video or Photograph Brief Description of	Taken'': No Yes Footage or Photograph' the families_fet_a and the families_fet_a	Short time ( short time ) Short time ( Short time ) Sh	r <del>- 16</del> 11/2	• 4 J 5 / 1 .



## Daily Marine Mammal Observer Report

Tr. 815. ----

Contractor (	CHAN DIANA				Project Name: CTJN Parallel Thimble Shoals Tunnel						
	S Permit IH		020		Observer Location (Island #) Island 2						
	108/2020	· ···	720	States States	Shift Start (				-		
SUBRISC DI		Sunse	1 200	5	Shift End /						
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ocation	Time	Air	Water	Visibility							
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	¥.	telma ca Ci	and 3	ten D	Cillin . Mordar	cating in	the sh	Ŧ <sup>t</sup> U	1411 tzh		
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# Protected Species Sighting & Shut-Down Form

Corresponding Sighting # for the Day:	1	Shutdown # for th	ne Day: NA
Date (DD/MM/YYYY): 08/08/02	Time of Initial Sighting	07/0 Time Animals	Left Ares: ARA
	mble Shoals Parallel Tunnet	island No.	2
Areas Observed: North ar	S Wost Island 1 Upland Plie	Drivingin-Water	Pile Driving
Air Temp: 78 Water Te	emp: <u>83</u> * Wave Height	.7++ Beauf	ort Sea State
Weather Conditions: Clea	s mostly cland	Y. WIND 5Kt E	3E
Percent Cloud Cover: 75%			
Animal Location & Distance to Type of Pile Driving/A ( Distance From Observer When Species Observed: The ( \$ 100 Number of Animals Sighted (in Sex of Animals Observed: Animal Behaviors Observed: Animal Heading/Direction; Human Activities in Area:	clude age classes): <u>6 Ad</u> Duknowin Tiavilia Jest, Twen Ea	ults	
Shutdown Information Time Begin Time End Total Down Time (mins) Video or Photograph Taken?:	:	Shutdown # for the day	: N/A
Brief Description of Footage or			
97.4 (198-			
Notes: <u>6 Adatt Battle</u> Dalphons spetted m of view by 9	Nose originaly sp. gain of 925 \$0.	Had at 710 be. hading Buck	Wing Wost. East and out
REMSA, Inc. 124 W. Queens Way Hampton, VA 23669 (757)722-0113		me / Signature	4/



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Contractor: C	TJV / Draga	4								(CRO)
VOAAANAT	S Permit: 11	aos				e: CTJV Paral		Shoals T	unnel	
Date: 11	s remit: 11	A March 2	020			cation (Island	#): 1			
and and	- JULY	-207	$\infty^{-}$		Shift Start:	140				
Sunrise: O	60/ ,	Sunse	1: 202	0		650				
Neather an	d Visibility I	nformatio			Built Bud					
Location	Time	Air	Water	A.P. 10 101		The second				
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Pier	-	(F)	(F)	Poor)						1
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Pill	150	5 87	82,6	Garow	15%	2				2
21						<u> </u>		15 1	die	/
Observer La									· · · · ·	
lime	Notes; (	pre-watch	times, star	t and stop I	limes for pile dri		110.1			
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ime	Species	Total	# Adults	# of	Closest	Activity	Shut	Time of	Time of	Time
		Number		Juveniles	Distance to	- · ·	down?	Shut-		
			1		Pile Driving	1 1			Start Up	last seen
325	T. turc.	3	3	0	Price Ditving	Behaviors	(yes/no)	down		
					40 m	traveling	no	N/H	N/A	133
349		12	<u>q</u>	3	900 m	Paraging /	NO	N/A	N/A	135)
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aily Summ	ary									
pecies	Total	- T	Takes in 2	lone A	Fakes in Zone B	# Shut-Dow	ns Comme	ents		
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### Daily Marine Mammal Observer Report

NOAA/NMES Permit: IHA March 2020     Observer Location (Island #);       Date;     Shift Start;       Sumrise:     Sunset;       Shift End;	examination: V LTV	Dragado	s				roject Name	CTJV Paral	lel TI	himble Sh	oals Tu	innel	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $				20									
Summe:       Summet:       Shift End:         Weather and Visibility Information       I.ocation       Time       Air       Water Visibility       Cloud Cover       Wave Height       Wind Speed       Precipitation       Beaufor         Location       Time       Air       Temp       (Good, Fair.       (%)       (R)       & Direction       Precipitation       Scale         (F)       (F)       (F)       Poor)       (%)       (R)       & Direction       Scale         Observer Log       Time       Notes: (pre-watch times, start and stop times for pile driving activities, shift changes, human activities)       IS       IM       Crew goices of on Mon 11F1 to repain 1 num bad on pile in Casing       Pile         (%)       Crew goices of on Mon 11F1 to repain 1 num bad on pile in Casing       Image: Start 1 casing       Image: Start 1 casing         (%)       Crew goices of on Mon 11F1 to repain 1 num bad on pile in Casing       Image: Start 1 casing       Image: Start 1 casing         (%)       Crew goices of on Mon 11F1 to repain 1 num bad on pile in Casing       Image: Start 1 casing       Image: Start 1 casing         (%)       Crew goices of on Mon 11F1 to casing       Image: Start 1 casing       Image: Start 1 casing       Image: Start 1 casing         (%)       Crew goices of on file file       Start 1 casing       Image				211									
Weather and Visibility Information         Location       Time       Air       Water       Visibility       Cloud Cover       Wave Height       Wind Speed       Precipitation       Scale         Location       Time       Air       Temp       Temp       (Good, Fair, 1%)       (R)       & Direction       Scale         Costion       (F)       (F)       (F)       (F)       (R)       & Direction       Scale         Observer Log       Fine       (F)       (F)       (F)       (F)       (F)       (F)         Time       Notes: (pre-watch times, start and stop times for pile driving activities, shift changes, human activities)       (F)       (F)         15 1/0       Crew going act on Man 11 ft to repaint num bas on pile in Casing       (F)       (F)         (F)       Stop       Stop       (F)       (F)       (F)         (F)       Stop <td>and the second se</td> <td></td> <td>Supset</td> <td></td> <td></td> <td></td> <td>the state of the local division of the local</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	and the second se		Supset				the state of the local division of the local						
Location Time Air Water Visibility Cloud Cover Wave Height Wind Speed Precipitation Beaufor Temp Temp (Good, Fair, 1%) (A) Direction Precipitation Scale (F) (F) Poor) (A) Direction Precipitation Scale Observer Log Time Notes: (pre-watch times, start and stop times for pile driving activities, shift changes, human activities) [5] 16 Orew going of on Man 1, ff to repaint number on pile in Casing (S) (C) Start halfing and pile [5] 20 Creat activity of pile		ibility lof											
Temp     Temp     Temp     (Good, Fair. 1%)     (R)     & Direction     Scale       (F)     (F)     Poor)     Poor)     Image: Construction     Scale     Image: Construction     Scale       Observer Log     Image: Construction     Image: Construction     Image: Construction     Image: Construction     Image: Construction     Image: Construction       Time     Notes: (pre-watch times, start and stop times for pile driving activities, shift changes, human activities)     Image: Construction     Image: Construction       1516     Crew going and on Man II of the repaint number on pile in Construction     Image: Construction     Image: Construction       1521     Stop     Antified pile     Image: Construction     Image: Construction       1530     Stop     Antified pile     Image: Construction     Image: Construction       1531     Stop     Antified pile     Image: Construction     Image: Construction       1531     Stop     Antified pile     Image: Construction     Image: Construction       1605     Stop in iting     Crew of the construction     Image: Construction     Image: Construction       1605     Stop in iting     Construction     Construction     Image: Construction     Image: Construction       1605     Stop in iting     Construction     Construction     Image: Construction </td <td></td> <td></td> <td>1</td> <td></td> <td>Visibility</td> <td>i lo</td> <td>'loud Cover</td> <td>Wave Heigh</td> <td>nt W</td> <td>ind Speed</td> <td>Prec</td> <td>initation</td> <td>Beaufort</td>			1		Visibility	i lo	'loud Cover	Wave Heigh	nt W	ind Speed	Prec	initation	Beaufort
(F) (F) Poor) (F) (F) Poor) Observer Log Time Notes: (pre-watch times, start and stop times for pile driving activities, shift changes, human activities) IS 16 Crew goi croat on Man 1, ft to repaint num bas on pile in Casing (D24) Shert hitling 3rd pile IS 30 Shert is full 3rd pile IS 30 Shert is full 3rd pile IS 31 vesting. (B337 Stop finishul 3rd pile IS 31 vesting. (B337 Stop finishul 3rd pile IS 31 stor to hitling (th pile IS 31 stor to cat draws, Vince said it is y no MMO's (M hit Fridland for days, Vince said it is y no MMO's (M hit Fridland for days)			1					-					Scale
Observer Log       Time     Notes: (pre-watch times, start and stop times for pile driving activities, shift changes, human activities)       15     10     Crew going at an Man lift to repaint number on pile in casing       15:10     Crew going at an Man lift to repaint number on pile in casing       15:11     Shart hutting 3rd pile       15:30     Stept to stop       15:31     Stept to stop       15:32     Stept to stop       15:31     Stop hitting (trinish d fire dag       15:31     Stop hitting (trinish d fire dag       16:35     Stop hitting (trinish d fire dag       16:36     Stop hitting (trinish d fire dag       16:37     Million to cat dag as fire			· ·	· ·				(,			1		
Time Notes: (pre-watch times, start and stop times for pile driving activities, shift changes, human activities) 1516 crew going at on Man 1, ft to repaint numbers on pile in casing 1524 shop 1530 stept + stop 1530 stept + stop 1531 regime. 1531 regime. 1531 stop, finished of pile 1551 stort hitting (finished for dag 1605 stoph; thing (finished for dag 1605 stoph; thing (finished for dag 165 end watch to cat dates, Vince said file hy no MMO/s Mhi Fridom 1620 cot chows to vard			<u> </u>	<u>k</u> ,							1		
Time Notes: (pre-watch times, start and stop times for pile driving activities, shift changes, human activities) 1516 crew going at on Man 1, ft to repaint numbers on pile in casing 1524 shop 1530 stept + stop 1530 stept + stop 1531 regime. 1531 regime. 1531 stop, finished of pile 1551 stort hitting (finished for dag 1605 stoph; thing (finished for dag 1605 stoph; thing (finished for dag 165 end watch to cat dates, Vince said file hy no MMO/s Mhi Fridom 1620 cot chows to vard													
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1924 Stort hilling 3rdpile 1538 Stop 1530 Stort & stop 1531 veging. 1531 veging. 1531 stor finishy 3rd pile 1531 stor & hilling 4th pile 1532 stop hi thing 4th pile 1532 stop hi thing 4th pile 1633 stop hi thing 4th pile 163 stop hi thing 4th pile 164 stop		Notes: (pr	e-watch ti	imes, star	t and stop	times	s for pile driv	ing activities	<u>, shif</u>	t changes,	human	activities	)
1539 Stop 1530 Stort + stop 1531 versing 1531 versing 1531 stop, finishy 3rd pile 1540 placing 4th pile 1551 stort hitting 4th pile 1551 stort hitting (finishy fir dag 1605 stop hitting (finishy fir dag 1605 stop hitting (finishy fir dag 165 end watch to cat da levs, Vince said file hy no MMO's Mhi Friday 1620 cot ch bus to vard	1516	crew .	BOICE	art or	Mal	lef <i>t</i>	to repo	unt nun	1.69	501	pile	in ca	smg
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1605 Istophitting (finished for dag 165 End watch to cat dy lows, Vince said litely no MMO's (Mfi) Friday 1020 Cot ch bus to yard	1551	Story	hitt	N 47	h vil								
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1020 artch busto vora	16 15	kna u	ust C	to to	cata		a/s, ~v	ince so	<u>- CI</u>	- Ir ar l	<del>1 ^C</del>	HALM IO	<u></u>
ILGO Arrive at yard	1.20	IM til	Frich	い レ .							<u> </u>		
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Sighting Log Time Species Total # Adults # of Closest Activity Shut Time of Time of Time						- 12		Antinity	Sheet		meof	Time of	Time
Time Species Total # Autus # of Constant from the Start Lin last seen	Time Spec			# Adults		1							
Number         Juveniles         Distance to Pile Driving         Or         down?         Shut- Start Op         Start Op         fast scen		N	umber		Juvennes			•••					
Pile Diffying Definition Control						-r	ne Driving	Denaviors	0.001				
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Daily Summary	Daily Summary										-		
Species Total Takes in Zone A Takes in Zone B # Shut-Downs Comments		Total	1	akes in Z	lone A	Take	s in Zone B	# Shut-Dow	ns (	Comments			-14
Number									_				
	1 · ·												

Observer Names:

REMSA, Inc. 142 W Queeens Way Hampton, VA 23669 757-722-0113

	Protected Species Sighting & Shut-Down Form
Corresponding Sightin	g = for the Day: $01$ Shutdown # for the Day: $05$
	:22/07/2020 ime of Initial Sighting 1325 Time Animais Left Area: 1351
Project Name:	CTJV Thimble Shoals Parallel Tunnel Island No
Areas Observed:	WOF Bridge Upland Pile Driving NO In-Water Pile Driving Notyet
Air Temp: 87°	Water Temp: Wave Height 2.1 Beaufort Sea State 2
Weather Conditio	ns: Sunny, slight breeze
Percent Cloud Cove	er: 20 Percent Glare: none-Visibility Issues: None
Distance From Obs Species Observed: Number of Animals Sex of Animals Obs Animal Behaviors ( Animal Heading Di	Deserved: Traveling + for aging rection: MUltiple directions Area: none directly, hud fishing boarts in area
Shutdown Informa 1 Total Down T	Time Begin: Shutdown # for the day: $DV$
Video or Photograph	Taken?: (No)Yes
Brief Description of	Footage or Photograph:
Notes: <u>First</u> 1325 to 15 diving at that dista	observed single dolphing heading N, W, E from 3,31, 800 to 1000 m from pier, observed is dolphins that distance " last sighting of 3 dolphins at new heading post at 1351
	aemsa (



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contractor (	TJV Dr	arados	·			Project Name	CLIV Paral	lel fhi	mble Sho	als Fu	nnel	
OA VINME	S Permit	HIA M	arch 201	20			ation (Island		2			
ale OG	26/20	020				Shift Start:						
unrise: o	5:46		Sunset	20:2		Shift End						
eather and	d Visibili	ty Inform	mailon			Tanta Lind						
ocation	Tim		\ir	Water	Visibility	Claud Cause	Wave Heigh	a Win	d Sneed	Preci	pitation	Beaufor
		12	cnip		(Good, Fa				irection	l'ice	pitation	Scale
			enip F)	(F)	(сноц. га Рон)	u. 1 <u>7</u> 0)	(ft)		rection			
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					6000	100%	1.7ft	1/2	the second s		ME	1
				10.1		/00/0				114		
)bserver La	ng		200							A		
ime	Not	es: (pre-)	watch ti	mes, star	t and stop	times for pile driv	vine activities	. shift	changes.	human	nctilytics	)
0630	C	atch.	803	to.	I.slan	22						
0653	A	rive	Te	land	1				_			
0705		<u>Meet</u>		fine.	<u>e's çr</u>	ein Plan f	o prile 2	Cat	<u>fring a</u>	180	<u> 1</u>	<u>H</u>
0740		Jalk	(QM)		Piel	2tor	Notch_	-				
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1524		<u>n 6 n</u>	13	45Ca	da ro	maling ul	telin	C.C.E	hand the			
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1625		ten	<u> </u>	+ 1	c.d	···-		_				
1645												
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ighting Lop	2						-					
ime	Species	Tou	al i	# Adults	# of	Closest	Activity	Shut	Ti	me of	Time of	Time
	l '	Nun	nber		Juveniles	Distance to	or	down?	si	iut-	Start Up	
	-		- 1			Pile Driving	Behaviors	(yes/n	0) do	wn		
0920	1.1	1	7	4	0	N/A	Freding	n		NA	D/A	(100
1410	(.STe.as	4.	1		0	N/A	limating	Δ	•	Na		1415
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	Тоіа 	al nber		akes in 2		Takes in Zone B	# Shut-Dow	ns C	onments			
pecies	64	ς		Ċ		0	0	-				_
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T(Waca)							<b>n</b> - 0 1					
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Offeenonding Sighting	for the Deut	2	Shutdow	n # for the Day: N/I	A
ale (DD/MM/YYYY)	: 25/AL/200 TI	Ime of Initial Sightin	a 14117 Time.	nimals Left Ares: 14	115
	A CONTRACTOR OF			NET 2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	No line
roject Name:		e Shoals Parallel Tunr	and the second se	and the second second second second	
reas Observed:	Sintly Wist	of 1 Upland	Pile Driving <u>10</u> II	-Water Pile Driving	<u>Að</u>
Ir Temp: 73°F	Water Temp	: 76 of Wave Hel	ght	Besufort Sea State	1.5
cather Conditio	ins: 100% c	hudy, no p	ecipitation		
		and the second		~~	
ype of Pile Drivin Distance From Obs pecies Observed: lumber of Animal	s Sighted (includ	Driving: <u>300</u> <u>Ast</u> <u>active</u> tially Observed: <u>50</u> <u>Truce_tes</u> le age classes): <u>1</u>	ð m		
iex of Animals Ob	served: <u>Va</u>				
nimal Heading/D	irection: En	at		Constitution of the second	
luman Activities i	a Area:e	<u> </u>			
Shutdown Informa	Time Begin: Time End:	NA NA NA	Shutdown # for	the day: NA	
Total Down			1		
	h Taken?: No Y	(cs			and the second se
Video or Photograp					a di seria
Video or Photograp					
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Total Down					
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Video or Photograp Brief Description of	f Footage or Photo	ograph:	a m Friles /		

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Date (DIMMNTTTT	ng # for the Day:	Sighting 0930 Time Animais Left Area: 1/00
Project Name:	CTJV Thimble Shoals Paral	lel Tunnel Island No.
Areas Observed:	North of Blind 1 u	Jpland Pile Driving In-Water Pile Driving
	Water Temp: 76% Wa	ave Height Beaufort Ses State
		1. Visibility Issues: Non z
Animal Location	& Distance to Pile Driving:	FOOM NW
Type of Pile Drivi	ng/A	
Smanles Ob.	server When Initially Observed	
Species Observed:	B- Hende Dolp	NIA N. TL.
Sex of Animale O	is Sighted (include age classes): pserved: Un uneque	4 Hours
Animal Behavior	Observed: Fredure	
Animal Heading/	Observed: Feeding	
	In Area: A-ne	
Sbutdown Inform	aation Time Begin: //A Time End: ///A	Shutdown # for the day: 0//4
Total Down	Time (mins):	
	ph Taken?: No Yes	
	and the second s	
No. Contraction of the second se		
Notes:		
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REMSA, Inc.	REMS Y	
REMSA, Inc. 124 W. Queens Way	REMSA W	2Mond Turner / D. A
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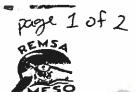
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	Protected Species Sighting & Shut-Down Form
Offering Stability	a # for the Day U
	a: [S/05/202] type of Initial Sighting [SO] Time Animals Left Area: [S [3
Project Name!]	CTJV Thimble Shoals Parallel Tunnel Island No
Areas Observed:	Inchannel Nof Upland Pile Driving N/A In-Water Pile Driving X
Alt Temp: 83	Water Temp: 62. 8 Wave Height 1' Beaufort Sea State 3
Weather Conditio	ns: Sunny with SW word 11.7kts
Percent Cloud Cove	er: 15% Percent Glare: 0% Visibility Issues: white cups in channel
Animal Location & Type of Pile Drivin	Distance to Pile Driving: 90-150 m
Distance From Obs	erver When Initially Observed: 200 M
Species Observed:	Tursias Truncatus
Number of Animals	s Sighted (include age classes): _C. OPIDX 3 C. du)+>
Sex of Animals Obs	served: N/At
Animal Behaviors (	Observed; traveling / diving irection; East through channel then N to Island 2 and
Animal Heading/Di Human Activities in	
Fishing	1 bouts (2 +2 3)
Total Down 7 Video or Photograpi	Time Begin:       1527         Time End:       1527         Time (mins):       24 min         A Taken?:       No (res)         Footage or Photograph:       dolphins Seen N of DTH
Notes:	
REMSA, Inc. 124 W. Oucens Way	Elizabeth Janz / E Com
REMSA, Inc. 124 W. Queens Way Hampton, VA 23669	Elizabeth Janz / Erzo Observer Name / Signature

					page 5	
	Protected Spe	cies Sighting &	Shut-Down	Form		
	ng # for the Day			for the Day: mais Left Are	0-	
Project Name:	CTJV Thimble Sho		Island No.			
*	w of dunne	el/ Upland Pile D	riving <u>N/A</u> In-W	ater Pile Driv	ing DTH (	10 MC
Air Temp: 380	Water Temp:	Wave Height	1′ B	eaufort Sea Si	tate <u>3</u>	
Weather Conditi	ons: SUMMY					
Percent Cloud Cov	ver: 16 Percent C	ilare:	Issues: <u>Some (</u> Sor	white hor ec of si	shring a	nel
Animal Location a Type of Pile Drivi	& Distance to Pile Driv. ng DTH Graves a server When Initially	1 stare bud not	hitting		sa. 1 pout	
Distance From Of	server When Initially	Observed: <u>~ 1,000</u>	2m			
Species Observed: Number of Anima	TV- SLOWS TCL Is Sighted (include age	classes): 3 ach 1	1>			
Sev of Animals Ob	1000000 $10000000$	C / Manual C				
<b>Animal Behaviors</b>	Observed: 180 p. n.	1 in a circu	lor for ma	tion (pe	sibly for	Sile
Human Activities	Direction; <u>West</u> N	10111 Vacan 4301	Vile a tong	leal Ene	Faf	
that loca East of	the turned	sail boont hea	ded towar	ds then	L DOM	
Shutdown Inform	Hun avid a Hun Unnel ation Time Begin: Time End:	sail bornt her	hutdown # for the	ds then		
Shutdown Inform	Hun avid a Hun LUNNE. ation Time Begin: Time End: Time (mins):	sail bornt her	ted towar	ds then		
Shutdown Inform Total Down Video or Photograp	Hun avid a Hun Unnel ation Time Begin: Time End:	sail bornt hea	ted towar	ds then		
Shutdown Inform	ALL GUEL A H. LUNNEL ation Time Begin: Time End: Time (mins): th Taken?: No Yes	sail bornt hea	ted towar	ds then		
Shutdown Inform Total Down Video or Photograp	ALL GUEL A H. LUNNEL ation Time Begin: Time End: Time (mins): th Taken?: No Yes	sail bornt hea	ted towar	ds then		
Shutdown Inform	ALL GUEL A H. LUNNEL ation Time Begin: Time End: Time (mins): th Taken?: No Yes	sail bornt hea	ted towar	ds then	grabbed 2 clay	7

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		ies Sighting & Shut-Down Form	
- WALC (DD MM-YYYY); 04	for the Day /	and the second se	
	CTJV Thimble Sho		
11.0	+ S PILE SITE	Upland Pile Driving N/A In-Water Pile Driving N/A	
Air Temp:54	Water Temp: 50	). 7 Wave Height 3. 54 Beaufort Sea State 2	
Weather Conditions:	4-9-dited with the same second se		
Percent Cloud Cover:	25% Percent G	ilare: 10% Visibility Issues: NoNE	
Type of Pile Driving Distance From Observ	er, When Initially (	ng: 300° NW of UBSERVER; 200°S of PIER; 100 Deserved: 1000 + M	Ur
Species Observed: Number of Animals Si	whited (include age	classes): 2; ADULT LJUVENILE	
Sex of Animals Observ	ed: <u>N/A</u>	ING, SURFACING	
Animal Behaviors Obs	erved <u>: Sioniuu</u> tion: SW		
Human Activities in Ar	rea: (2) SEN	ARD MARINE TUES MOORED	-
To Mo	ORING BI	DUYS	-
Tiı	e Begin: 1100 ne End: 1115 : (mins): 0 m ken?: No(7es)	Shutdown # for the day: 9	_
Brief Description of Foo ONE LARGE	tage or Photograph <u>{</u> <u>BLON</u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u>	AS SECONDS IN. THE TYPE OF ANMAL DEFEMENT WOULD BE WHALE.	
Notes:			
	· · · · · · · · · · · · · · · · · · ·		
REMSA, Inc. 24 W. Queens Way Jampton, VA 23669 757)722-0113	REMSA	Observer Name / Signature GABBY THORNTON Are	



	CTIT	1								M	
NOAAAU	CIIV	/ Dragado	\$	_		Project Name:	CTJV Paralle	l Thimble Shoa	ils Tunnel		
	VIPS Per	<u>mit: IHA</u>	August I,	2018- N	Aarch 10,*	Observer Loca	tion (Island #	: 1			
		rch -	ww			Shift Start: 🔿	630				
sumrise:	654		Sunset:	1922		Shift End: 13	30				
Weather	and Visi	bility Inf	ormation								
Location		Гime	Air	Water	Visibility	Cloud Cover	Wave Height	Wind Speed	Precipita		ufort
			Temp	Temp	(Good, Fair,		(ft)	& Direction		Sci	le
			(F)	(F)	Poor)		(-9	(K+S)			
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Гіте	1	Notes: (pr	-watch ti	mes sta	t and stop tir	nes for pile driv	ing activities.	shift changes,	human ac	<u>stiivties)</u>	
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aily Summ pecies	To		Ta	kęs in Z	one A Ta	kes in Zone B	# Shut-Dov	vns Comme	nts		
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