Appendices

Chevron Carpinteria Oil and Gas Facility
Decommissioning Project

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Appendix A

Project Design Information

Appendix A – Project Design Information

Carpinteria Oil & Gas Plant Inventory August 2020 (updated March 2021)

Operational Area	Plant Area No. (if Applicable)	Type	Equipment No.	Equipment Description	Dimension	Quantity	System/Comment	On Map
				Buildings, Concrete Pads, Asphalt, Misc.				
Main Plant Area	9	Building	IR Bldg	IR Compressor Building	30' X 170' X 27'	5,100 SQFT	Cinder block construction, 188' long x 17' high cinder block wall at NE corner and along east side of building with (4) 6' gaps and (1) 8' gap (156' total linear feet x 17' high) and (6) 8' X 13' high cinder block partitions; Buidling has 44" high permiter footing above ground surface and 18" X 18" support columns on 15' centers that correlate to (11) rebar and concrete reinforced A-frame supports; A-frame supports are 14" X 18" at eye level that increase in thickness vertically; (2) 1' X 6" X ~170' I-beams run the length of the building; Metal grating covers approx 75% of the raised floor and pier supported concrete and (5) compressor footings cover the remaining surface area; metal grating walkway extends 6' from west wall; (2) 10' X 10' doors located on either end of bldg (1) metal and (1) wood; 5' X 5' circulation fans located in wood / metal siding at south end of bldg; (6) standard metal doors; (6) IR Compressors	
Main Plant Area	10	Building	Cooper Bldg	Cooper Compressor Building	30' X 48' X 24'	1,440 SQFT	Cinder block contsruction, but north wall is wood siding and 10' X 12' rollup door; (4) 8" X 12" I-Beam A-Frames from N-S; (2) 4" X 12" I-Beam N-S; (1) 4" X 12" I-Beam E-W, (2) 6" X 6" lateral support I-beams N-S, Cooper Compressor rests on massive concrete foundation 7' X 20', (3) metal doors, Two (2) control panel Units 1.5' X 4' x 6.5' and 1' X 3' X 6' located within next to Lube Oil tank.	
Main Plant Area	10	Building	M-Cooper Bldg	Mini-Cooper Silencer Building	8' X 11' X 10'	88 SQFT	Cinder block contsruction; (1) standard door; concrete floor	
Main Plant Area		Building	Cntrl Bldg	Control Building	24' X 67' X 10'	1,608 SQFT	Cinder block contsruction; (5) double wide doors and (3) standard doors; 50'L X 5'W awning with metal supports; 20' X 20' sheet metal awning with metal supports	
Main Plant Area		Building		Control Building Leg	5' X 8' X 8'		Extension at NW corner of Cntrl Bldg, three cinder block walls with flat metal/wood roof	
Shop and Maintenance Area		Building	Maint Shop	Maintenance Shop	30' X 100' X 12'	3,000 SQFT	I-Beam A-Frames (4) from E-W, (8) metal lateral support beams from N-S, shallow pitched roof to support narrow second story office area; Sheet metal siding and roof; 30' X 5' wood and sheet metal awning and 21' X 11' sheet metal awning with post supports; (4) 10' X 10' metal rollup doors; (8) 3' x 7' metal doors, concrete floor, a 2,000-lb. jib crane is located at SW corner adjacent canopy.	X
Shop and Maintenance Area		Building	Covering East / Weld Shp West	Welding Shop Area Coverings	23' X 34', 24' X 40'	1,742 SQFT	(W) 3-4" metal pipe framing on ~5' centers N-S, sheet metal roof; (E) I-beam framing (4) 3" X 12" X 23' I-beams N-S and (8) 2" X 5" X 35' C-beams E-W; sheet metal roof;	X
Chevron Pipeline Area		Building	CPL-Bldg	Pipeline Office	15' X 34' X 10.5'	510 SQFT	Cinder block contsruction; 37 of the 98 linear feet of building is metal framing, glass windows, and doors; 23' X 25' metal roof/awning; 20'L X 10'H attached cinder block screens, 3' X 9' x 7' Electrical panelboard located within.	X

Chevron Pipeline Area		Building		Stormwater Sump and Canopy	10' X 15'		Canopy covers XXX-gal concrete sump and motor/pump, (4) 8' metal posts	X
Former Marketing Terminal Area		Building	Annex Office	Shorebase Office Bldg	13' X 83' X 10'	1,079 SQFT	Metal siding, roof extends 2' beyond buldg footprints; (5) metal doors and (7) 5' X 5' windows, wood and drywall build out, LBP and potential ACM	
Former Marketing Terminal Area		Building	Annex Wrhse	Shorebase Warehouse Bldg	19' X 70' X 15'	1,330 SQFT	Metal siding, (2) 12' X 14' rollup doors at either end, concrete floor, LPB and potential ACM	
Shop and Maintenance Area		Building	Kiosk	Guard Kiosk	7' X 12' X10'	84 SQFT	Metal Construction shell rests on minimum 6 concrete footings, glass windows on west end	
MSRC Lease Area		Building	MSRC Offc / Conf Bldgs	MSRC Office / Conference Bldgs	60' X 48' X 12'	2880 SQFT	Metal siding and steel beam construction "Butler building", Concrete slab foundation, (2) 10' X 10' metal rollup doors, (1) 3' X 7' standard door; Conference Bldg has wood and drywall build out, galley and 2 restrooms; 20' X 35' sheet metal roofed awning with wood framing and steel support posts, plywood south wall with steel door; 10' X 25' sheet metal roofed awning with wood framing and support posts	
MSRC Lease Area		Building	MSRC Maint Shop	MSRC Maintenance Shop	25' X 30' X 16'	975 SQFT	Metal siding and steel beam construction "Butler building", Concrete slab foundation, (1) 10' X 10' metal rollup doors, (1) 6' X 7' double door, loft, wood and paneling build out, 4' X 15' sheet metal awning	
MSRC Lease Area		Building	MSRC Fab / Strge Bldg	MSRC Fabrication and Storage Building	15' X 80' X 16'	1,200 SQFT	Metal siding and steel beam construction "Butler building", Concrete slab foundation, (8) 15' X 15' metal rollup doors	
MSRC Lease Area		Carport	MSRC Carport	Carport	25' X 35' X 15'	875 SQFT	Metal shell and framing with pitched roof, Concrete slab foundation	
Casitas Pier		Building	Pier OB-1	Pier Out-Building #1	20' X 10'	200 SQFT		
Casitas Pier		Building	Pier OB-2	Pier Out-Building #2	15' X 8'	120 SQFT		
Casitas Pier		Building	Pier OB-3	Pier Out-Building #3	11' X 7'	77 SQFT		
Main Plant Area		Concrete		Concrete, Plant		7,782 SQYD	Inside Plant area only	
Main Plant Area		Asphalt		Asphalt, Plant		25,802 SQYD	Inside Plant area only	
Former Marketing Terminal Area		Asphalt		Asphalt, Dump Rd. to RR Tracks		6,222 SQYD		
Former Marketing Terminal Area		Asphalt		Asphalt, Shorebase		4,000 SQYD		
Pier Parking Lot		Asphalt		Asphalt, Pier Area from RR Tracks		7,405 SQYD		
		Concrete		Concrete, Castias Pier			Causeway: 20’ x 30’ = 600’ x 13’ = 7800 SF. Pier: 152’ x 44.5’ = 6764 SF Total SF: 14, 564.	
		Fire Hydrants		Fire Hydrants		9		
		Fire Hose Reels		Fire Hose Reels		25		
		Deluge Sprinklers		Deluge Sprinklers		6		
		UG Firewater Piping		Underground Firewater Piping		5,300'	Pier firewater tied into Plant system	
		Storm Drains		Stormwater Drains		5		
		Towers		Towers		1	Wind/Weather, 40', next to plant control room	
		Light Towers		Light Towers		27		
		Concrete Vessel Supports		Concrete Vessel Supports		1,000 CUFT		
		Concrete Vertical Pipe Supports		Concrete Vertical Pipe Supports		24	18" x 18" x 15' HT	
		Power Poles		Power Poles		12		
				Compressors/Pumps/Filters				
Main Plant Area	9	Compressor	IR-1	Ingorsoll Rand - IC Engine	10' x 25'	1	Gas Processing System, IR Compressor Building	
Main Plant Area	9	Compressor	IR-2	Ingorsoll Rand - Electric	10' x 25'	1	Gas Processing System, IR Compressor Building	
Main Plant Area	9	Compressor	IR-3	Ingorsoll Rand - IC Engine	10' x 25'	1	Gas Processing System, IR Compressor Building	
Main Plant Area	9	Compressor	IR-4	Ingorsoll Rand - IC Engine	10' x 25'	1	Gas Processing System, IR Compressor Building	
Main Plant Area	9	Compressor	IR-5	Ingorsoll Rand - IC Engine	10' x 25'	1	Gas Processing System, IR Compressor Building	

Main Plant Area	9	Compressor	IR-6	Ingorsoll Rand - IC Engine	10' x 25'	1	Gas Processing System, IR Compressor Building	
Main Plant Area	10	Compressor	K-3	COOPER BESSEMER COMPRESSOR	10 x 30'	1	Gas Processing System, Cooper Compressor Building	
Main Plant Area	10	Compressor	K-30 (C-1)	AIR COMPRESSOR	5' x 5'	1	Utility Air, Cooper Compressor Blg.	
Main Plant Area	9	Compressor	K-40 (C-2)	AIR COMPRESSOR	5' x 5'	1	Utility Air, Main Compressor Blg.	
Main Plant Area	9	Compressor	K-50 (C-3)	AIR COMPRESSOR	5' x 5'	1	Utility Air, Main Compressor Blg.	
Chevron Pipeline Area		Pump	P-1	WATER SKIM PUMP, T861	5' x 5'	1	T861, 20hp, 440 V	
Main Plant Area	6	Pump	P-17	COOLING WATER PUMP	5' x 5'	1	Therminol System, 3 HP, 230 V	
Main Plant Area	6	Pump	P-22A	THERMINOL CIRCULATION PUMP	5' x 5'	1	Therminol System,15 HP, 230 V	
Main Plant Area	6	Pump	P-22B	THERMINOL CIRCULATION PUMP	5' x 5'	1	15 HP, 230 V	
Main Plant Area	3	Pump	P-28	PIPELINE BOTTOM PUMP	5' x 5'	1	LACT UNIT	
Main Plant Area	9	Pump	P-31	IR 1 & 2 JACKET WATER PUMP	5' x 5'	1	IR Compressor Building	
Main Plant Area	9	Pump	P-32	IR 3 JACKET WATER PUMP	5' x 5'	1	IR Compressor Building	
Main Plant Area	9	Pump	P-33	IR 4 JACKET WATER PUMP	5' x 5'	1	IR Compressor Building	
Main Plant Area	9	Pump	P-34	IR 5 JACKET WATER PUMP	5' x 5'	1	IR Compressor Building	
Main Plant Area	9	Pump	P-35	IR 6 JACKET WATER PUMP	5' x 5'	1	IR Compressor Building	
Chevron Pipeline Area		Pump	P-4	SHIPPING PUMP	5' x 10'	1	T-861 Shipping Pump	X
Chevron Pipeline Area		Pump	P-5	SHIPPING PUMP	5' x 10'	1	T-861 Shipping Pump	X
Chevron Pipeline Area		Pump	P-42	SKIM OIL RECYCLE PUMP	5' x 5'	1	T1 & T1 Waste Water System, 7.5 HP, 230 V	
Chevron Pipeline Area		Pump	P-5090	CENTRIFUGAL PUMP	5' x 5'	1	T-861, 12,000GPM, 350 HP, 480 V	
Main Plant Area	9	Pump	P-52	GLYCOL STRIPPER FEED PUMP	5' x 5'	1	Glycol Regeneration System, 6 GPM	
Main Plant Area	9	Pump	P-53	GLYCOL STRIPPER FEED PUMP	5' x 5'	1	Glycol Regeneration System, 6 GPM	
Main Plant Area	9	Pump	P-56	GLYCOL CIRCULATION PUMP	5' x 5'	1	Glycol Regeneration System, 6 GPM	
Main Plant Area	9	Pump	P-57	GLYCOL CIRCULATION PUMP	5' x 5'	1	Glycol Regeneration System, 6 GPM	
Chevron Pipeline Area		Pump	P-FS	FIELD SERVICES SUMP PUMP	5' x 5'	1	T1 & T2 Waste Water System	X
				Vessels				
Main Plant Area	6	Vessel	V-13	FREE WATER KNOCKOUT	8' OD X 37'	1	VRU System	X
Main Plant Area	6	Vessel	V-61	DRIP POT	16" X 3'	1	Glycol Regeneration System	
Main Plant Area	6	Vessel	V-530	GLYCOL FLASH DRUM	20" X 10'	1	Glycol Regeneration System	X
Main Plant Area	6	Vessel	V-16	BLOW DOWN	8' OD X 28'	1	VRU System	
Main Plant Area	9	Vessel	V-2	LOW VAPOR RECIEVER	24" X 9'	1	Gas Processing System	
Main Plant Area	9	Vessel	V-3	HI VAPOR INTAKE SCRUBBER	48" X 10'	1	VRU System	
Main Plant Area	9	Vessel	V-4	LOW PRESSURE INTAKE SCRUBBER	3' X 10'	1	Gas Processing System	
Main Plant Area	9	Vessel	V-5	LOW FIELD 500# DISCHARGE SCRUBBER	48" X 10'	1	Gas Processing System	
Main Plant Area	9	Vessel	V-6	LTS INTAKE SCRUBBER	5' X 12'	1	Gas Processing System	
Main Plant Area	9	Vessel	V-7	H. P. INTAKE SCRUBBER	36" X 10'	1	Gas Processing System	
Main Plant Area	9	Vessel	V-9	ACCUMULATOR	16' X 4'	1	Gas Processing System	
Main Plant Area	9	Vessel	V-50	PULSATION DAMPENER	2' X 20'	1	Gas Processing System	
Main Plant Area	9	Vessel	A-RECEIVER	AIR PRESSURE TANK	30" DIA x 17' HT	1	Compressor Utility System	
Main Plant Area	9	Vessel	B-RECEIVER	AIR PRESSURE TANK	30" DIA x 17' HT	1	Compressor Utility System	
Main Plant Area	9	Vessel	C-INSTRUMENT AIR	AIR PRESSURE TANK	20" DIA x 17' HT	1	Compressor Utility System	
Main Plant Area	9	Vessel		Vessel	24" DIA X 17 HT		Gas Processing System	
Main Plant Area	9	Vessel		Vessel	24" DIA X 17 HT		Gas Processing System	
Main Plant Area	9	Vessel		Vessel	24" DIA X 17 HT		Gas Processing System	
Main Plant Area	9	Vessel		Vessel	24" DIA X 17 HT		Gas Processing System	
Main Plant Area	9	Vessel		Vessel	24" DIA X 17 HT		Gas Processing System	
				Heat/Air Exchangers/Coolers/Heaters/Dryers				
Main Plant Area	9	Fin Fan	E-20	OIL COOLING FAN	6' X 14'	1	Compressor Utility System	
Main Plant Area	9	Fin Fan	E-28	OIL COOLING FAN	6' X 14'	1	Compressor Utility System	
Main Plant Area	9	Cooler	E-50	Air Discharge Cooler	4' X 5.5' X 4'	1	Compressor Utility System, 30" high metal frame support, LBP?	
Main Plant Area	9	Reboiler	E-109	GLYCOL CIRCULATION REBOILER	15" X12'	1	Glycol Rengeneration System	
Main Plant Area	9	Heat Exchanger	E-115	HEAT EXCHANGER	15" X 24'	1	Gas Processing System	
Main Plant Area	9	Heat Exchanger	E-117	GLYCOL PIPE JACKET HEAT EXCHANGER	6' X 14'	1	Gas Processing System	
Main Plant Area	9	Fin Fan	E-118	COOLING FAN	6' X 14'	1	Gas Processing System	
Main Plant Area	9	Fin Fan	E-119	COOLING FAN	6' X 14'	1	Gas Processing System	

Main Plant Area	9	Cooler	E-140	100# DISCHARGE COOLER	6' X 14'	1	Gas Processing System	
Main Plant Area	9	Cooler	E-160	LOW FIELD 500# DISCHARGE COOLER	6' X 14'	1	Gas Processing System	
Main Plant Area	9	Cooler	E-180	LOW FIELD 500# DISCHARGE COOLER	6' X 14'	1	Gas Processing System	
Main Plant Area	6	Heater	H-101	THERMINOL HEATER	8' X 20'	1	Therminol System	
Main Plant Area	9	Vessel		IR 1 HEAT EXCHANGER VESSEL	2' DIA x 6' Long	1	Compressor Utility System, vessels connected to 10-inch steel pipe, set in 5.5' X 3.5' x 3' rack comprised of 4.5" steel pipe, LBP?	
Main Plant Area	9	Vessel		IR 3 HEAT EXCHANGER VESSEL	2' DIA x 6' Long	1	Compressor Utility System, vessels connected to 10-inch steel pipe, set in 5.5' X 3.5' x 3' rack comprised of 4.5" steel pipe, LBP?	
Main Plant Area	9	Vessel		IR 5 HEAT EXCHANGER VESSEL	2' DIA x 6' Long	1	Compressor Utility System, vessels connected to 10-inch steel pipe, set in 5.5' X 3.5' x 3' rack comprised of 4.5" steel pipe, LBP?	
Main Plant Area	9	Vessel		IR 6 HEAT EXCHANGER VESSEL	2' DIA x 6' Long	1	Compressor Utility System, vessels connected to 10-inch steel pipe, set in 5.5' X 3.5' x 3' rack comprised of 4.5" steel pipe, LBP?	
Main Plant Area	9	Vessel		IR 1 HEAT EXCHANGER VESSEL	2' DIA x 8' Long	1	Compressor Utility System, vessels connected to 10-inch steel pipe, steel mesh protective cages at 2 locations, LBP?	
Main Plant Area	9	Vessel		IR 3 HEAT EXCHANGER VESSEL	2' DIA x 8' Long	1	Compressor Utility System, vessels connected to 10-inch steel pipe, steel mesh protective cages at 2 locations, LBP?	
Main Plant Area	9	Vessel		IR 5 HEAT EXCHANGER VESSEL	2' DIA x 8' Long	1	Compressor Utility System, vessels connected to 10-inch steel pipe, steel mesh protective cages at 2 locations, LBP?	
Main Plant Area	9	Vessel		IR 6 HEAT EXCHANGER VESSEL	2' DIA x 8' Long	1	Compressor Utility System, vessels connected to 10-inch steel pipe, steel mesh protective cages at 2 locations, LBP?	
Main Plant Area	9	Vessel		IR 4 HEAT EXCHANGER VESSEL	2.5' DIA x 10' Long	1	Compressor Utility System, vessel connected to 10-inch steel pip, LBP?	
Main Plant Area	9	Exhaust		Air Exhaust	2.5' X 2.5' X 1.5'	5	4 way screened intake unit connected to 10-inch steel pipe	
				Pipeways/Tanks				
		Pipeline		Small (<6") AG Line		16,000'		
		Pipeline		Small (<6") BG Line		TBD'	TBD	
		Pipeline		Large (>=6") AG Line		6,500'		
		Pipeline		Large (>=6") AG Line		TBD'	TBD	
		Pipeline		Small (<6") AG Insulated Line		2,000'		
		Pipeline		Large (>=6") AG Insulated Line		900'		
Main Plant Area	6	Tank	T-102	GLYCOL SURGE TANK	15" X 10'		Glycol Regeneration System	
Main Plant Area	6	Tank	T-103	EXPANSION TANK	4' X 8'		Therminol System	
Chevron Pipeline Area		Tank	T-1	WASTE WATER TANK	30' DIA x 10' HT		Waste Water System, 2000 BBL	X
Chevron Pipeline Area		Tank	T-2	WASTE WATER TANK	30' DIA x 10' HT		Waste Water System, 2000 BBL	X
Main Plant Area	3	Tank	T-25380	WASTE WATER TANK	35' DIA X 30' HT		Chevron Pipeline Area	X
Chevron Pipeline Area		Tank	T-861	STORAGE TANK, Floating Roof	180' DIA X 48' HT		Crude Oil Shipping Syste, 217,000 BBL	X
Main Plant Area	9	Tank		Lube Oil Tank	5' DIA X 5' HT		IR Compressors, rests on 9' X 9' elevated bolted metal frame platform, +55-gal drum of compressor oil	
Main Plant Area	10	Tank		Lube Oil Tank	3' DIA X 15' Long		Cooper Compressor, rests on 8' L X 2' W x 9' H rack	
Chevron Pipeline Area		Tank	CF-185-5	Foam Tank	42" DIA X 10' HT		Red Foam tank on concrete padf, connected to 4.5" pipe (13') and 3.5" pipe (10')	X
Shop and Maintenance Area		Tank	AST-Diesel	Diesel Fuel AST	3.5'L X 4'W X 4'HT		350-gal capacity AST to contain Diesel Fuel	
Chevron Pipeline Area		Tank	AST-MS	Above Ground Storage Tank	3.5'L X 4'W X 4'HT		350-gal capacity AST to contain Mineral Spirits, in concrete secondary containment	X
				Electrical				
Main Plant Area		Electrical Cabinet	E-8 (MCC-1)	Electrical Cabinet	8' X 4' X 8'		High Voltage, Electrical Cabinet on concrete slab	
Main Plant Area		Sub-station		Sub-Station and Chain link pen	30' X 30' X 10'		Sub-Station with metal framing on concrete slab, High Voltage	
Main Plant Area	10	Electrical Cabinet	E-1 (MCC-2)	Electrical Cabinet	30' X 4' X 8'		Electrical Cabinet, High Voltage	
Main Plant Area	10	Generator		Backup Generator	15' X 6' X 7'		Generator on concrete slab	

Main Plant Area	7/8	Electrical Cabinet	E-4 (MCC-3)	Electrical Cabinet	13' X 4' X 8'		High Voltage, Electrical Cabinet on concrete slab	
Main Plant Area	7/8	Chain Link Pen		Sub-Station and Chain link pen	30' X 13' X 10'		(3) transformers with PCB-containing oils; and substation on concrete slab inside the chain link fence pen	
Main Plant Area	7/8	Shed		Shed	15' X 10' X 8'		Corrugated metal roof and walls with metal angle iron and pipe framing	
Main Plant Area	8	Electrical Cabinet	E-3 (MCC-4)	Electrical Cabinet	10' X 4' X 8'		High Voltage, Electrical Cabinet on concrete slab	
Main Plant Area	8	Electrical Cabinet		Electrical Cabinet	8' X 5' X 9'		High Voltage, Electrical Cabinet on concrete slab	
Main Plant Area	8	Transformer		Transformer (1)	7' x 7' x 6'		(1) transformer on concrete slab,	
		Canopy		Metal Canopy	11' X 11' X 8'		with 11' X 11' X 8' metal canopy constructed of (4) 4.5-inch diameter X 8' vertical support pipes and roof contains (7) 3-inch diameter X 11' pipe	
Main Plant Area	10	Electrical Cabinet	E-7 (MCC-5)	Electrical Cabinet	9' X 4' X 8'		North of Control Room, Electrical Cabinet on concrete slab	
Chevron Pipeline Area		Chain Link Pen	E-12 (CPL Electrical Equipment)	Electrical Cabinet	11' X 5' X 8'		On concrete slab	X
Chevron Pipeline Area		Chain Link Pen		Electrical Cabinet	5' X 2' X 8'		On concrete slab	X
Chevron Pipeline Area		Chain Link Pen		Electrical Cabinet	6' X 3' X 7'		On concrete slab	X
Chevron Pipeline Area		Transformer		(5) Transformers			(3) large transfomers (similar to MCC-3), (1) transformer 6' X 3' X 4.5' (similar to MCC-4), and (1) 1' X 3' small can syle transformer, all on on concrete slabs	X
Chevron Pipeline Area		Chain Link Pen		Chain link pen	33' X 25' X 11'			X
Main Plant Area		Elec Cabinet	E-11 (Main Switchgear)	High Voltage	27' X 13' X 8'		High Voltage, on concrete slab with (8) 6.5-inch diameter X 6' metal pipe crash posts (4' above ground),	
Main Plant Area	8/9	Vessel	E-2	Electrical panel (I/O#1)			Electrical panel in P/L corridor between IR Builing and frm White Compressors; pitched metal frame and sheet metal roof canopy; panels mounted on post supported metal backing	
Main Plant Area	7	Elec Panel	E-5	Electrical panel			Electrical panel in fmr Gasoline Recovery Plant	
Main Plant Area	7	Elec Panel	E-6	Electrical panel			Electrical panel in fmr Gasoline Recovery Plant	
Main Plant Area	3	Elec Panel	E-9	Electrical panel			Electrical panel immediately west of tank 25380	
Main Plant Area		Elec Panel	E-10	Electrical panel			Electrical panel south of tank 25380	
Main Plant Area		Elec Panel	E-13	Electrical panel			Electrical panel immediately east of fmr Deisel Fuel UST	
Main Plant Area		Elec Panel	E-14	Electrical panel			Electrical panel in southeast corner of Site	
MSRC Lease Area		Elec Panel	E-15	Electrical panel (Abndnd)	4' X 8'			X
MSRC Lease Area		Sub-station		Sub-station			Wood and metal framing on concrete slab, no transformers	
MSRC Lease Area		Chain Link Pen		Chain link pen	20' X 20 X 11'		Electrical panel mounted on post supported metal backing	X

Appendix B

Air Quality Calculations

Appendix B – Air Quality Calculations

Carpinteria Oil & Gas Processing Facilities Decommissioning
Chevron Pipeline Area

OFF-ROAD SOURCES

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr [1]								Total English Tons							
					NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	2	576	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.233	0.022	0.008	0.006	0.149	69.680	0.004	0.002
Wheeled loader (Caterpillar 966)	Diesel	278	2	720	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.484	0.044	0.016	0.014	0.208	84.029	0.005	0.002
Dozer (Caterpillar D6)	Diesel	215	1	120	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.054	0.005	0.003	0.003	0.041	6.441	0.000	0.000
Backhoe	Diesel	104	1	720	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.088	0.009	0.005	0.004	0.108	16.101	0.001	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	240	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.074	0.008	0.004	0.004	0.055	8.299	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	80	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.023	0.002	0.001	0.001	0.013	4.334	0.000	0.000
Boomlift	Diesel	75	1	416	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.017	0.001	0.000	0.000	0.034	5.596	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding machine	Diesel	25	2	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge crane	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug generator	Diesel	150	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge generators (2)	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survey vessel (2 outboards[2])	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
													0.975	**0.091**	**0.037**	**0.032**	**0.607**	**194.480**	**0.0104**	**0.0050**

ON-ROAD SOURCES

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile [3]								Total English Tons							
			NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers)[4]	20	2440	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0055	0.0008	0.0001	0.0001	0.0571	17.4877	0.0002	0.0004
Heavy-duty truck (equipment/piping)	25	88	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0031	0.0000	0.0000	0.0000	0.0002	3.4866	0.0000	0.0004
Heavy-duty truck (surface materials)	25	200	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0071	0.0001	0.0001	0.0001	0.0006	7.9242	0.0000	0.0008
Heavy-duty truck (surface materials-oil spray)	50	60	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0042	0.0001	0.0001	0.0001	0.0003	4.7545	0.0000	0.0005
Heavy-duty truck (soil removal-hazardous)	201	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0006	0.0000	0.0000	0.0000	0.0000	0.6371	0.0000	0.0001
Heavy-duty truck (soil removal-non-hazardous)	50	58	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0041	0.0001	0.0001	0.0000	0.0003	4.5960	0.0000	0.0005
Heavy-duty truck (backfill)	45	60	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0038	0.0001	0.0000	0.0000	0.0003	4.2791	0.0000	0.0004
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
										Totals =>	**0.0284**	**0.0011**	**0.0004**	**0.0003**	**0.0589**	**43.2**	**0.0003**	**0.0031**
										SB County	**0.0068**	**0.0008**	**0.0001**	**0.0001**	**0.0572**	**18.97**	**0.0002**	**0.0005**
										Ventura Co	**0.0211**	**0.0003**	**0.0003**	**0.0003**	**0.0017**	**23.72**	**0.0000**	**0.0025**
										LA County	**0.0001**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.12**	**0.0000**	**0.0000**
										Kern County	**0.0003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.29**	**0.0000**	**0.0000**
										Kings County	**0.0001**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.06**	**0.0000**	**0.0000**
										Off-Road & On-Road Source Totals	**1.003**	**0.092**	**0.038**	**0.032**	**0.666**	**237.6**	**0.0106**	**0.0080**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of work in the subject area

Greenhouse Gas Emissions Summary

Metric Tons	212.183	0.009	0.007
CO2E	212.183	0.265	1.895
Total CO2E			**214.3**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Former Marketing Terminal Area

OFF-ROAD SOURCES

					Emission Factors: pounds/BHP-hr [1]								Total English Tons							
Source	**Fuel**	**BHP**	**Number**	**Total Hours per Source**	**NO_x**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**	**NO_x**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**
Excavator (Caterpillar 330)	Diesel	272	2	160	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.065	0.006	0.002	0.002	0.041	19.356	0.001	0.000
Wheeled loader (Caterpillar 966)	Diesel	278	2	700	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.471	0.043	0.016	0.014	0.202	81.695	0.004	0.002
Dozer (Caterpillar D6)	Diesel	215	1	240	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.108	0.011	0.006	0.005	0.081	12.882	0.001	0.000
Backhoe	Diesel	104	1	700	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.086	0.008	0.005	0.004	0.105	15.654	0.001	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	240	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.074	0.008	0.004	0.004	0.055	8.299	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	80	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.023	0.002	0.001	0.001	0.013	4.334	0.000	0.000
Boomlift	Diesel	75	1	120	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.005	0.000	0.000	0.000	0.010	1.614	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding machine	Diesel	25	2	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge crane	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug generator	Diesel	150	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge generators (2)	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survey vessel (2 outboards[2])	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
													0.832	**0.078**	**0.034**	**0.029**	**0.507**	**143.833**	**0.0076**	**0.0037**

ON-ROAD SOURCES

			Emission Factors, grams/mile [3]								Total English Tons							
On Road Sources	**Miles/One-way Trip**	**Total One-Way Trips**	**NOx**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**	**NOx**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**
Light-duty truck (workers)[4]	20	1840	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0042	0.0006	0.0000	0.0000	0.0431	13.1874	0.0002	0.0003
Heavy-duty truck (equipment/piping)	25	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.0792	0.0000	0.0000
Heavy-duty truck (surface materials)	25	260	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0092	0.0001	0.0001	0.0001	0.0007	10.3014	0.0000	0.0011
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-hazardous)	201	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0057	0.0001	0.0001	0.0001	0.0005	6.3710	0.0000	0.0007
Heavy-duty truck (soil removal-non-hazardous)	50	1864	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.1316	0.0020	0.0017	0.0016	0.0105	147.7067	0.0001	0.0154
Heavy-duty truck (backfill)	45	1884	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.1197	0.0018	0.0015	0.0014	0.0096	134.3624	0.0001	0.0140
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
									Totals =>		**0.2704**	**0.0046**	**0.0034**	**0.0032**	**0.0643**	**312.0**	**0.0004**	**0.0314**
									SB County		**0.0155**	**0.0008**	**0.0002**	**0.0002**	**0.0440**	**25.90**	**0.0002**	**0.0016**
									Ventura Co		**0.2507**	**0.0037**	**0.0031**	**0.0030**	**0.0200**	**281.39**	**0.0002**	**0.0293**
									LA County		**0.0010**	**0.0000**	**0.0000**	**0.0000**	**0.0001**	**1.17**	**0.0000**	**0.0001**
									Kern County		**0.0026**	**0.0000**	**0.0000**	**0.0000**	**0.0002**	**2.92**	**0.0000**	**0.0003**
									Kings County		**0.0006**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.64**	**0.0000**	**0.0001**
									Off-Road & On-Road Source Totals		**1.102**	**0.082**	**0.037**	**0.032**	**0.571**	**455.8**	**0.0080**	**0.0350**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of work in the subject area

Greenhouse Gas Emissions Summary

Metric Tons	407.001	0.007	0.031
CO2E	407.001	0.200	8.291
Total CO2E			**415.5**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Shop and Maintenance Area

OFF-ROAD SOURCES

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr [1]								Total English Tons							
					NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	2	80	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.032	0.003	0.001	0.001	0.021	9.678	0.001	0.000
Wheeled loader (Caterpillar 966)	Diesel	278	2	240	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.161	0.015	0.005	0.005	0.069	28.010	0.002	0.001
Dozer (Caterpillar D6)	Diesel	215	1	80	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.036	0.004	0.002	0.002	0.027	4.294	0.000	0.000
Backhoe	Diesel	104	1	240	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.029	0.003	0.002	0.001	0.036	5.367	0.000	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	80	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.025	0.003	0.001	0.001	0.018	2.766	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	40	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.012	0.001	0.000	0.000	0.006	2.167	0.000	0.000
Boomlift	Diesel	75	1	40	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.002	0.000	0.000	0.000	0.003	0.538	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding machine	Diesel	25	2	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge crane	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug generator	Diesel	150	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge generators (2)	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug mains	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survey vessel (2 outboards[2])	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
													0.297	**0.028**	**0.012**	**0.010**	**0.181**	**52.820**	**0.0028**	**0.0013**

ON-ROAD SOURCES

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile [3]								Total English Tons							
			NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers)[4]	20	600	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0014	0.0002	0.0000	0.0000	0.0140	4.3003	0.0001	0.0001
Heavy-duty truck (equipment/piping)	25	8	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0003	0.0000	0.0000	0.0000	0.0000	0.3170	0.0000	0.0000
Heavy-duty truck (surface materials)	25	286	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0101	0.0001	0.0001	0.0001	0.0008	11.3316	0.0000	0.0012
Heavy-duty truck (surface materials-oil spray)	50	10	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001
Heavy-duty truck (soil removal-hazardous)	201	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0006	0.0000	0.0000	0.0000	0.0000	0.6371	0.0000	0.0001
Heavy-duty truck (soil removal-non-hazardous)	50	38	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0027	0.0000	0.0000	0.0000	0.0002	3.0112	0.0000	0.0003
Heavy-duty truck (backfill)	45	40	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0025	0.0000	0.0000	0.0000	0.0002	2.8527	0.0000	0.0003
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
										Totals =>	**0.0182**	**0.0004**	**0.0002**	**0.0002**	**0.0154**	**23.2**	**0.0001**	**0.0021**
										SB County	**0.0024**	**0.0002**	**0.0000**	**0.0000**	**0.0141**	**5.52**	**0.0001**	**0.0002**
										Ventura Co	**0.0154**	**0.0002**	**0.0002**	**0.0002**	**0.0012**	**17.25**	**0.0000**	**0.0018**
										LA County	**0.0001**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.12**	**0.0000**	**0.0000**
										Kern County	**0.0003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.29**	**0.0000**	**0.0000**
										Kings County	**0.0001**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.06**	**0.0000**	**0.0000**
										Off-Road & On-Road Source Totals	**0.315**	**0.028**	**0.012**	**0.010**	**0.196**	**76.1**	**0.0029**	**0.0034**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of work in the subject area

Greenhouse Gas Emissions Summary

Metric Tons	67.912	0.003	0.003
CO2E	67.912	0.072	0.806
Total CO2E			**68.8**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Marketing/Marine Terminal Pipeline Bundle

OFF-ROAD SOURCES

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr [1]								Total English Tons							
					NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	1	120	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.024	0.002	0.001	0.001	0.016	7.258	0.000	0.000
Wheeled loader (Caterpillar 966)	Diesel	278	1	150	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.050	0.005	0.002	0.001	0.022	8.753	0.000	0.000
Dozer (Caterpillar D6)	Diesel	215	1	16	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.859	0.000	0.000
Backhoe	Diesel	104	1	160	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.020	0.002	0.001	0.001	0.024	3.578	0.000	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flush pump	Diesel	20	1	120	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.009	0.001	0.000	0.000	0.006	1.112	0.000	0.000
Air compressor	Diesel	20	1	100	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.927	0.000	0.000
Dive compressor	Diesel	50	1	160	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.018	0.003	0.001	0.001	0.022	2.407	0.000	0.000
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000
Derrick barge crane[6]	Diesel	375	1	200	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.101	0.009	0.004	0.004	0.042	12.566	0.001	0.000
Derrick barge tug generator	Diesel	150	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.131	0.012	0.006	0.005	0.053	8.296	0.000	0.000
Derrick barge tug mains[5]	Diesel	1500	2	63	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.494	0.039	0.025	0.022	0.143	31.400	0.001	0.001
Derrick barge winch	Diesel	200	1	120	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.087	0.008	0.004	0.004	0.036	5.531	0.000	0.000
Derrick barge generators	Diesel	200	2	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.348	0.033	0.015	0.014	0.143	22.124	0.001	0.001
Materials barge tug mains[5]	Diesel	1500	2	63	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.494	0.039	0.025	0.022	0.143	31.400	0.001	0.001
Materials barge tug generator	Diesel	200	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.174	0.016	0.008	0.007	0.071	11.062	0.000	0.001
Crew/support vessel mains	Diesel	640	3	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.492	0.038	0.025	0.023	0.143	31.281	0.001	0.001
Crew/support vessel generator	Diesel	34	1	240	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.021	0.005	0.002	0.002	0.017	1.399	0.000	0.000
Dive support vessel	Diesel	400	1	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.103	0.008	0.005	0.005	0.030	6.517	0.000	0.003
Survey vessel (2 outboards[2])	Gasoline	150	2	8	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.002	0.026	0.009	0.008	0.592	1.200	0.000	0.000
Cement pump	Diesel	175	1	40	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.005	0.000	0.000	0.000	0.007	1.171	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	160	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.021	0.004	0.001	0.001	0.025	11.025	0.001	0.000
													2.629	**0.255**	**0.135**	**0.123**	**1.556**	**202.615**	**0.0063**	**0.0108**

ON-ROAD SOURCES

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile [3]								Total English Tons							
			NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers)[4]	20	600	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0014	0.0002	0.0000	0.0000	0.0140	4.3003	0.0001	0.0001
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (backfill)	45	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.1426	0.0000	0.0000
Heavy-duty truck (flush water disposal)	25	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001
									Totals =>		**0.0022**	**0.0002**	**0.0000**	**0.0000**	**0.0141**	**5.2**	**0.0001**	**0.0002**
									SB County		**0.0014**	**0.0002**	**0.0000**	**0.0000**	**0.0140**	**4.37**	**0.0001**	**0.0001**
									Ventura Co		**0.0008**	**0.0000**	**0.0000**	**0.0000**	**0.0001**	**0.87**	**0.0000**	**0.0001**
									LA County		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
									Kern County		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
									Kings County		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
									Off-Road & On-Road Source Totals		**2.631**	**0.255**	**0.135**	**0.123**	**1.570**	**207.9**	**0.0064**	**0.0110**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area

[5] Hours based on 23 hour round trip and 2 hours per work day for moving barge

[6] Includes 40 hours for offloading pipe at Port of LA/LB

Greenhouse Gas Emissions Summary

Metric Tons	185.581	0.006	0.010
CO2E	185.581	0.160	2.593
Total CO2E			**188.3**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Marketing/Marine Terminal Pipeline Bundle - Port Hueneme Disposal Option

OFF-ROAD SOURCES

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr [1]								Total English Tons							
					NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	1	120	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.024	0.002	0.001	0.001	0.016	7.258	0.000	0.000
Wheeled loader (Caterpillar 966)	Diesel	278	1	150	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.050	0.005	0.002	0.001	0.022	8.753	0.000	0.000
Dozer (Caterpillar D6)	Diesel	215	1	16	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.859	0.000	0.000
Backhoe	Diesel	104	1	160	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.020	0.002	0.001	0.001	0.024	3.578	0.000	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flush pump	Diesel	20	1	120	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.009	0.001	0.000	0.000	0.006	1.112	0.000	0.000
Air compressor	Diesel	20	1	100	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.927	0.000	0.000
Dive compressor	Diesel	50	1	160	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.018	0.003	0.001	0.001	0.022	2.407	0.000	0.000
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000
Derrick barge crane[6]	Diesel	375	1	200	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.101	0.009	0.004	0.004	0.042	12.566	0.001	0.000
Derrick barge tug generator	Diesel	150	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.131	0.012	0.006	0.005	0.053	8.296	0.000	0.000
Derrick barge tug mains[5]	Diesel	1500	2	65	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.510	0.040	0.025	0.022	0.147	32.397	0.001	0.001
Derrick barge winch	Diesel	200	1	120	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.087	0.008	0.004	0.004	0.036	5.531	0.000	0.000
Derrick barge generators	Diesel	200	2	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.348	0.033	0.015	0.014	0.143	22.124	0.001	0.001
Materials barge tug mains[5]	Diesel	1500	2	65	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.510	0.040	0.025	0.022	0.147	32.397	0.001	0.001
Materials barge tug generator	Diesel	200	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.174	0.016	0.008	0.007	0.071	11.062	0.000	0.001
Crew/support vessel mains	Diesel	640	3	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.492	0.038	0.025	0.023	0.143	31.281	0.001	0.001
Crew/support vessel generator	Diesel	34	1	240	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.021	0.005	0.002	0.002	0.017	1.399	0.000	0.000
Dive support vessel	Diesel	400	1	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.103	0.008	0.005	0.005	0.030	6.517	0.000	0.003
Survey vessel (2 outboards[2])	Gasoline	150	2	8	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.002	0.026	0.009	0.008	0.592	1.200	0.000	0.000
Cement pump	Diesel	175	1	40	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.005	0.000	0.000	0.000	0.007	1.171	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	160	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.021	0.004	0.001	0.001	0.025	11.025	0.001	0.000
													2.660	**0.257**	**0.136**	**0.124**	**1.565**	**204.609**	**0.0064**	**0.0109**

ON-ROAD SOURCES

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile [3]								Total English Tons							
			NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers)[4]	20	600	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0014	0.0002	0.0000	0.0000	0.0140	4.3003	0.0001	0.0001
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (backfill)	45	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.1426	0.0000	0.0000
Heavy-duty truck (pipe disposal)	14	56	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0011	0.0000	0.0000	0.0000	0.0001	1.2425	0.0000	0.0001
Heavy-duty truck (flush water disposal)	25	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001
										Totals =>	**0.0033**	**0.0002**	**0.0000**	**0.0000**	**0.0142**	**6.5**	**0.0001**	**0.0003**
										SB County	**0.0014**	**0.0002**	**0.0000**	**0.0000**	**0.0140**	**4.37**	**0.0001**	**0.0001**
										Ventura Co	**0.0008**	**0.0000**	**0.0000**	**0.0000**	**0.0001**	**0.87**	**0.0000**	**0.0001**
										LA County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Kern County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Kings County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Off-Road & On-Road Source Totals	**2.664**	**0.258**	**0.136**	**0.124**	**1.579**	**211.1**	**0.0064**	**0.0112**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area

[5] Hours based on 25 hour round trip (POLB-Carpinteria-Port Hueneme-POLB) and 2 hours per work day for moving barge

[6] Includes 40 hours for offloading pipe at Port Hueneme

Greenhouse Gas Emissions Summary

Metric Tons	188.470	0.006	0.010
CO2E	188.470	0.161	2.645
Total CO2E			**191.3**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Gail and Grace Pipeline Bundle

OFF-ROAD SOURCES

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr [1]								Total English Tons							
					NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	1	120	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.024	0.002	0.001	0.001	0.016	7.258	0.000	0.000
Wheeled loader (Caterpillar 966)	Diesel	278	1	120	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.040	0.004	0.001	0.001	0.017	7.002	0.000	0.000
Dozer (Caterpillar D6)	Diesel	215	1	16	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.859	0.000	0.000
Backhoe	Diesel	104	1	150	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.018	0.002	0.001	0.001	0.022	3.354	0.000	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flush pump	Diesel	20	1	80	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.006	0.001	0.000	0.000	0.004	0.741	0.000	0.000
Air compressor	Diesel	20	1	150	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.011	0.001	0.000	0.000	0.007	1.391	0.000	0.000
Dive compressor	Diesel	50	1	160	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.018	0.003	0.001	0.001	0.022	2.407	0.000	0.000
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000
Derrick barge crane[6]	Diesel	375	1	200	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.101	0.009	0.004	0.004	0.042	12.566	0.001	0.000
Derrick barge tug generator	Diesel	150	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.131	0.012	0.006	0.005	0.053	8.296	0.000	0.000
Derrick barge tug mains[5]	Diesel	1500	2	63	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.494	0.039	0.025	0.022	0.143	31.400	0.001	0.001
Derrick barge winch	Diesel	200	1	120	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.087	0.008	0.004	0.004	0.036	5.531	0.000	0.000
Derrick barge generators	Diesel	200	2	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.348	0.033	0.015	0.014	0.143	22.124	0.001	0.001
Materials barge tug mains[5]	Diesel	1500	2	63	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.494	0.039	0.025	0.022	0.143	31.400	0.001	0.001
Materials barge tug generator	Diesel	200	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.174	0.016	0.008	0.007	0.071	11.062	0.000	0.001
Crew/support vessel mains	Diesel	640	3	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.492	0.038	0.025	0.023	0.143	31.281	0.001	0.001
Crew/support vessel generator	Diesel	34	1	240	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.021	0.005	0.002	0.002	0.017	1.399	0.000	0.000
Dive support vessel	Diesel	400	1	120	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.154	0.012	0.008	0.007	0.045	9.775	0.000	0.004
Survey vessel (2 outboards[2])	Gasoline	150	2	8	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.002	0.026	0.009	0.008	0.592	1.200	0.000	0.000
Cement pump	Diesel	175	1	40	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.005	0.000	0.000	0.000	0.007	1.171	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	160	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.021	0.004	0.001	0.001	0.025	11.025	0.001	0.000
													2.670	**0.258**	**0.137**	**0.125**	**1.565**	**203.993**	**0.0063**	**0.0122**

ON-ROAD SOURCES

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile [3]								Total English Tons							
			NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers)[4]	20	400	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0009	0.0001	0.0000	0.0000	0.0094	2.8668	0.0000	0.0001
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (backfill)	45	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.1426	0.0000	0.0000
Heavy-duty truck (flush water disposal)	25	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001
										Totals =>	**0.0017**	**0.0001**	**0.0000**	**0.0000**	**0.0094**	**3.8**	**0.0000**	**0.0002**
										SB County	**0.0010**	**0.0001**	**0.0000**	**0.0000**	**0.0094**	**2.94**	**0.0000**	**0.0001**
										Ventura Co	**0.0008**	**0.0000**	**0.0000**	**0.0000**	**0.0001**	**0.87**	**0.0000**	**0.0001**
										LA County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Kern County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Kings County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Off-Road & On-Road Source Totals	**2.672**	**0.258**	**0.137**	**0.125**	**1.574**	**207.8**	**0.0063**	**0.0123**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area

[5] Hours based on 23 hour round trip and 2 hours per work day for moving barge

[6] Includes 40 hours for offloading pipe at Port of LA/LB

Greenhouse Gas Emissions Summary

Metric Tons	185.531	0.006	0.011
CO2E	185.531	0.159	2.915
Total CO2E			**188.6**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Gail and Grace Pipeline Bundle - Port Hueneme Disposal Option

OFF-ROAD SOURCES

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr [1]								Total English Tons							
					NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	1	120	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.024	0.002	0.001	0.001	0.016	7.258	0.000	0.000
Wheeled loader (Caterpillar 966)	Diesel	278	1	120	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.040	0.004	0.001	0.001	0.017	7.002	0.000	0.000
Dozer (Caterpillar D6)	Diesel	215	1	16	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.007	0.001	0.000	0.000	0.005	0.859	0.000	0.000
Backhoe	Diesel	104	1	150	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.018	0.002	0.001	0.001	0.022	3.354	0.000	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flush pump	Diesel	20	1	80	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.006	0.001	0.000	0.000	0.004	0.741	0.000	0.000
Air compressor	Diesel	20	1	150	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.011	0.001	0.000	0.000	0.007	1.391	0.000	0.000
Dive compressor	Diesel	50	1	160	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.018	0.003	0.001	0.001	0.022	2.407	0.000	0.000
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000
Derrick barge crane[6]	Diesel	375	1	200	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.101	0.009	0.004	0.004	0.042	12.566	0.001	0.000
Derrick barge tug generator	Diesel	150	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.131	0.012	0.006	0.005	0.053	8.296	0.000	0.000
Derrick barge tug mains[5]	Diesel	1500	2	65	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.510	0.040	0.025	0.022	0.147	32.397	0.001	0.001
Derrick barge winch	Diesel	200	1	120	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.087	0.008	0.004	0.004	0.036	5.531	0.000	0.000
Derrick barge generators	Diesel	200	2	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.348	0.033	0.015	0.014	0.143	22.124	0.001	0.001
Materials barge tug mains[5]	Diesel	1500	2	65	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.510	0.040	0.025	0.022	0.147	32.397	0.001	0.001
Materials barge tug generator	Diesel	200	1	240	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.174	0.016	0.008	0.007	0.071	11.062	0.000	0.001
Crew/support vessel mains	Diesel	640	3	80	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.492	0.038	0.025	0.023	0.143	31.281	0.001	0.001
Crew/support vessel generator	Diesel	34	1	240	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.021	0.005	0.002	0.002	0.017	1.399	0.000	0.000
Dive support vessel	Diesel	400	1	120	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.154	0.012	0.008	0.007	0.045	9.775	0.000	0.004
Survey vessel (2 outboards[2])	Gasoline	150	2	8	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.002	0.026	0.009	0.008	0.592	1.200	0.000	0.000
Cement pump	Diesel	175	1	40	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.005	0.000	0.000	0.000	0.007	1.171	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	160	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.021	0.004	0.001	0.001	0.025	11.025	0.001	0.000
													2.701	**0.260**	**0.138**	**0.126**	**1.574**	**205.986**	**0.0063**	**0.0122**

ON-ROAD SOURCES

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile [3]								Total English Tons							
			NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers)[4]	20	400	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0009	0.0001	0.0000	0.0000	0.0094	2.8668	0.0000	0.0001
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (backfill)	45	2	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0001	0.0000	0.0000	0.0000	0.0000	0.1426	0.0000	0.0000
Heavy-duty truck (pipe disposal)	14	228	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0045	0.0001	0.0001	0.0001	0.0004	5.0588	0.0000	0.0005
Heavy-duty truck (flush water disposal)	25	20	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001
										Totals =>	**0.0062**	**0.0002**	**0.0001**	**0.0001**	**0.0098**	**8.9**	**0.0000**	**0.0007**
										SB County	**0.0010**	**0.0001**	**0.0000**	**0.0000**	**0.0094**	**2.94**	**0.0000**	**0.0001**
										Ventura Co	**0.0008**	**0.0000**	**0.0000**	**0.0000**	**0.0001**	**0.87**	**0.0000**	**0.0001**
										LA County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Kern County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Kings County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Off-Road & On-Road Source Totals	**2.707**	**0.261**	**0.139**	**0.126**	**1.584**	**214.8**	**0.0064**	**0.0129**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area

[5] Hours based on 25 hour round trip (POLB-Carpinteria-Port Hueneme-POLB) and 2 hours per work day for moving barge

[6] Includes 40 hours for offloading pipe at Port Hueneme

Greenhouse Gas Emissions Summary

Metric Tons	191.828	0.006	0.012
CO2E	191.828	0.160	3.060
Total CO2E			**195.0**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Main Plant Area

OFF-ROAD SOURCES

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr [1]								Total English Tons							
					NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	2	1200	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.486	0.046	0.016	0.013	0.310	145.166	0.008	0.004
Wheeled loader (Caterpillar 966)	Diesel	278	2	1000	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.673	0.061	0.022	0.019	0.289	116.707	0.006	0.003
Dozer (Caterpillar D6)	Diesel	215	1	80	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.036	0.004	0.002	0.002	0.027	4.294	0.000	0.000
Backhoe	Diesel	104	2	1000	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.244	0.024	0.015	0.011	0.300	44.725	0.002	0.001
Grader (Caterpillar 120M3)	Diesel	145	1	80	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.025	0.003	0.001	0.001	0.018	2.766	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	80	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.023	0.002	0.001	0.001	0.013	4.334	0.000	0.000
Boomlift	Diesel	75	1	360	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.015	0.001	0.000	0.000	0.029	4.842	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding machine	Diesel	25	1	40	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.002	0.000	0.000	0.000	0.001	0.282	0.000	0.000
Derrick barge crane[6]	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug generator	Diesel	150	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug mains[5]	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug mains[5]	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug generator	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survey vessel (2 outboards[2])	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
													1.505	**0.140**	**0.058**	**0.048**	**0.987**	**323.117**	**0.0172**	**0.0082**

ON-ROAD SOURCES

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile [3]								Total English Tons							
			NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers)[4]	20	3900	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0088	0.0013	0.0001	0.0001	0.0912	27.9516	0.0004	0.0006
Heavy-duty truck (equipment/piping)	25	234	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0083	0.0001	0.0001	0.0001	0.0007	9.2713	0.0000	0.0010
Heavy-duty truck (surface materials)	25	274	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0097	0.0001	0.0001	0.0001	0.0008	10.8561	0.0000	0.0011
Heavy-duty truck (surface materials-oil spray)	50	28	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0020	0.0000	0.0000	0.0000	0.0002	2.2188	0.0000	0.0002
Heavy-duty truck (soil removal-hazardous)	201	56	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0159	0.0002	0.0002	0.0002	0.0013	17.8389	0.0000	0.0019
Heavy-duty truck (soil removal-non-hazardous)	50	5484	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.3872	0.0057	0.0049	0.0046	0.0309	434.5620	0.0003	0.0452
Heavy-duty truck (backfill)	45	5540	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.3521	0.0052	0.0044	0.0042	0.0281	395.0996	0.0002	0.0411
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
										Totals =>	**0.7839**	**0.0128**	**0.0098**	**0.0094**	**0.1531**	**897.8**	**0.0009**	**0.0911**
										SB County	**0.0415**	**0.0018**	**0.0005**	**0.0005**	**0.0939**	**64.60**	**0.0004**	**0.0044**
										Ventura Co	**0.7307**	**0.0108**	**0.0092**	**0.0088**	**0.0583**	**819.98**	**0.0005**	**0.0853**
										LA County	**0.0029**	**0.0000**	**0.0000**	**0.0000**	**0.0002**	**3.28**	**0.0000**	**0.0003**
										Kern County	**0.0073**	**0.0001**	**0.0001**	**0.0001**	**0.0006**	**8.17**	**0.0000**	**0.0009**
										Kings County	**0.0016**	**0.0000**	**0.0000**	**0.0000**	**0.0001**	**1.78**	**0.0000**	**0.0002**
										Off-Road & On-Road Source Totals	**2.289**	**0.153**	**0.068**	**0.057**	**1.140**	**1220.9**	**0.0181**	**0.0993**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area

[5] Hours based on 23 hour round trip and 2 hours per work day for moving barge

[6] Includes 40 hours for offloading pipe at Port of LA/LB

Greenhouse Gas Emissions Summary

Metric Tons	1090.103	0.016	0.089
CO2E	1090.103	0.452	23.506
Total CO2E			**1114.1**

Carpinteria Oil & Gas Processing Facilities Decommissioning
MSRC Lease Area

OFF-ROAD SOURCES

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr [1]								Total English Tons							
					NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	2	360	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.146	0.014	0.005	0.004	0.093	43.550	0.002	0.001
Wheeled loader (Caterpillar 966)	Diesel	278	2	360	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.242	0.022	0.008	0.007	0.104	42.015	0.002	0.001
Dozer (Caterpillar D6)	Diesel	215	1	40	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.018	0.002	0.001	0.001	0.014	2.147	0.000	0.000
Backhoe	Diesel	104	2	480	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.117	0.011	0.007	0.005	0.144	21.468	0.001	0.001
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	40	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.012	0.001	0.000	0.000	0.006	2.167	0.000	0.000
Boomlift	Diesel	75	1	40	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.002	0.000	0.000	0.000	0.003	0.538	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding machine	Diesel	25	1	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge crane[6]	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug generator	Diesel	150	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug mains[5]	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug mains[5]	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug generator	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survey vessel (2 outboards[2])	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
													0.549	**0.051**	**0.022**	**0.018**	**0.373**	**113.268**	**0.0060**	**0.0029**

ON-ROAD SOURCES

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile [3]								Total English Tons							
			NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers)[4]	20	1200	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0027	0.0004	0.0000	0.0000	0.0281	8.6005	0.0001	0.0002
Heavy-duty truck (equipment/piping)	25	6	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0002	0.0000	0.0000	0.0000	0.0000	0.2377	0.0000	0.0000
Heavy-duty truck (surface materials)	25	334	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0118	0.0002	0.0001	0.0001	0.0009	13.2334	0.0000	0.0014
Heavy-duty truck (surface materials-oil spray)	50	10	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0007	0.0000	0.0000	0.0000	0.0001	0.7924	0.0000	0.0001
Heavy-duty truck (soil removal-hazardous)	201	10	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0028	0.0000	0.0000	0.0000	0.0002	3.1855	0.0000	0.0003
Heavy-duty truck (soil removal-non-hazardous)	50	884	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0624	0.0009	0.0008	0.0007	0.0050	70.0497	0.0000	0.0073
Heavy-duty truck (backfill)	45	894	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0568	0.0008	0.0007	0.0007	0.0045	63.7579	0.0000	0.0066
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
										Totals =>	**0.1375**	**0.0024**	**0.0017**	**0.0016**	**0.0388**	**159.9**	**0.0002**	**0.0159**
										SB County	**0.0087**	**0.0005**	**0.0001**	**0.0001**	**0.0286**	**15.35**	**0.0001**	**0.0009**
										Ventura Co	**0.1267**	**0.0019**	**0.0016**	**0.0015**	**0.0101**	**142.15**	**0.0001**	**0.0148**
										LA County	**0.0005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.59**	**0.0000**	**0.0001**
										Kern County	**0.0013**	**0.0000**	**0.0000**	**0.0000**	**0.0001**	**1.46**	**0.0000**	**0.0002**
										Kings County	**0.0003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.32**	**0.0000**	**0.0000**
										Off-Road & On-Road Source Totals	**0.687**	**0.054**	**0.024**	**0.020**	**0.412**	**273.1**	**0.0062**	**0.0188**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area

[5] Hours based on 23 hour round trip and 2 hours per work day for moving barge

[6] Includes 40 hours for offloading pipe at Port of LA/LB

Greenhouse Gas Emissions Summary

Metric Tons	243.861	0.006	0.017
CO2E	243.861	0.156	4.450
Total CO2E			**248.5**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Pier Parking Lot Area

OFF-ROAD SOURCES

Source	Fuel	BHP	Number	Total Hours per Source	Emission Factors: pounds/BHP-hr [1]								Total English Tons							
					NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NO_x	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Excavator (Caterpillar 330)	Diesel	272	2	0	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wheeled loader (Caterpillar 966)	Diesel	278	2	80	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	0.054	0.005	0.002	0.002	0.023	9.337	0.001	0.000
Dozer (Caterpillar D6)	Diesel	215	1	80	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.036	0.004	0.002	0.002	0.027	4.294	0.000	0.000
Backhoe	Diesel	104	2	320	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.078	0.008	0.005	0.004	0.096	14.312	0.001	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	40	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.012	0.001	0.001	0.001	0.009	1.383	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	20	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.006	0.000	0.000	0.000	0.003	1.083	0.000	0.000
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Welding machine	Diesel	25	1	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge crane[6]	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug generator	Diesel	150	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge tug mains[5]	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Derrick barge generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug mains[5]	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Materials barge tug generator	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Survey vessel (2 outboards[2])	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
													0.186	**0.018**	**0.009**	**0.008**	**0.158**	**30.409**	**0.0016**	**0.0008**

ON-ROAD SOURCES

On Road Sources	Miles/One-way Trip	Total One-Way Trips	Emission Factors, grams/mile [3]								Total English Tons							
			NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O
Light-duty truck (workers)[4]	20	1400	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.0032	0.0005	0.0000	0.0000	0.0328	10.0339	0.0001	0.0002
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (surface materials)	25	580	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0205	0.0003	0.0003	0.0002	0.0016	22.9801	0.0000	0.0024
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heavy-duty truck (backfill)	45	100	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0064	0.0001	0.0001	0.0001	0.0005	7.1318	0.0000	0.0007
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
										Totals =>	**0.0300**	**0.0009**	**0.0004**	**0.0004**	**0.0349**	**40.1**	**0.0002**	**0.0034**
										SB County	**0.0051**	**0.0005**	**0.0001**	**0.0001**	**0.0329**	**12.19**	**0.0001**	**0.0004**
										Ventura Co	**0.0249**	**0.0004**	**0.0003**	**0.0003**	**0.0020**	**27.96**	**0.0000**	**0.0029**
										LA County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Kern County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Kings County	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
										Off-Road & On-Road Source Totals	**0.216**	**0.019**	**0.010**	**0.008**	**0.193**	**70.6**	**0.0018**	**0.0041**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area

[5] Hours based on 23 hour round trip and 2 hours per work day for moving barge

[6] Includes 40 hours for offloading pipe at Port of LA/LB

Greenhouse Gas Emissions Summary

Metric Tons	62.996	0.002	0.004
CO2E	62.996	0.044	0.975
Total CO2E			**64.0**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Air Pollutant and Greenhouse Gas Emissions Totals

Task/Area	Air Pollutants: Total English Tons					GHG: Total Metric Tons			
	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	CO2E
1. Chevron Pipeline Area	1.00	0.09	0.04	0.03	0.67	212.2	0.009	0.007	214.3
2. Former Marketing Terminal Area	1.10	0.08	0.04	0.03	0.57	407.0	0.007	0.031	415.5
3. Shop and Maintenance Area	0.32	0.03	0.01	0.01	0.20	67.9	0.003	0.003	68.8
4. Marketing/Marine Terminal Pipeline Bundle	2.63	0.26	0.13	0.12	1.57	185.6	0.006	0.010	188.3
5. Gail and Grace Pipeline Bundle	2.67	0.26	0.14	0.12	1.57	185.5	0.006	0.011	188.6
6. Main Plant Area	2.29	0.15	0.07	0.06	1.14	1090.1	0.016	0.089	1114.1
7. MSRC Lease Area	0.69	0.05	0.02	0.02	0.41	243.9	0.006	0.017	248.5
8. Pier Parking Lot Area	0.22	0.02	0.01	0.01	0.19	63.0	0.002	0.004	64.0
Total	**10.91**	**0.94**	**0.46**	**0.41**	**6.32**	**2455.2**	**0.054**	**0.171**	**2502.1**

Peak 12-month Period	Air Pollutants: Total English Tons					GHG: Total Metric Tons			
Task/Area 4 through 7	**8.28**	**0.72**	**0.36**	**0.32**	**4.70**	**1705.1**	**0.033**	**0.126**	**1739.5**
SBAPCD Rule 202 Threshold	25	25	25	25	NA	-	-	-	-
SBAPCD Stationary Source Threshold									**10000**

Peak Day: All Emissions	Pounds/Peak Day				
Gail and Grace Pipeline Bundle	**228.2**	**20.1**	**10.8**	**9.9**	**82.9**
SBCAPCD Threshold	240	240	80	NA	NA

Peak Day: Motor Vehicle Emissions	Pounds/Peak Day				
Main Plant Area: soil removal	**13.6**	**0.2**	**0.2**	**0.2**	**2.0**
SBCAPCD Threshold	25	25	NA	NA	NA

Carpinteria Oil & Gas Processing Facilities Decommissioning
Air Pollutant and Greenhouse Gas Emissions Totals - Port Hueneme Pipe Disposal Option

Task/Area	Air Pollutants: Total English Tons					GHG: Total Metric Tons			
	NOx	ROG	PM10	PM2.5	CO	CO2	CH4	N2O	CO2E
1. Chevron Pipeline Area	1.00	0.09	0.04	0.03	0.67	212.2	0.009	0.007	214.3
2. Former Marketing Terminal Area	1.10	0.08	0.04	0.03	0.57	407.0	0.007	0.031	415.5
3. Shop and Maintenance Area	0.32	0.03	0.01	0.01	0.20	67.9	0.003	0.003	68.8
4. Marketing/Marine Terminal Pipeline Bundle	2.66	0.26	0.14	0.12	1.58	188.5	0.006	0.010	191.3
5. Gail and Grace Pipeline Bundle	2.71	0.26	0.14	0.13	1.58	191.8	0.006	0.012	195.0
6. Main Plant Area	2.29	0.15	0.07	0.06	1.14	1090.1	0.016	0.089	1114.1
7. MSRC Lease Area	0.69	0.05	0.02	0.02	0.41	243.9	0.006	0.017	248.5
8. Pier Parking Lot Area	0.22	0.02	0.01	0.01	0.19	63.0	0.002	0.004	64.0
Total	**10.98**	**0.95**	**0.46**	**0.41**	**6.34**	**2464.4**	**0.054**	**0.172**	**2511.5**
Peak 12-month Period									
Task/Area 4 through 7	**8.35**	**0.72**	**0.37**	**0.33**	**4.71**	**1714.3**	**0.033**	**0.127**	**1748.9**

Carpinteria Oil & Gas Processing Facilities Decommissioning
Main Plant Area - Peak Day

OFF-ROAD SOURCES

					Emission Factors: pounds/BHP-hr [1]								Pounds							
Source	**Fuel**	**BHP**	**Number**	**Peak Day Hours per Source**	**NO_x**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**	**NO_x**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**
Excavator (Caterpillar 330)	Diesel	272	2	8	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	6.48	0.61	0.22	0.17	4.13	1935.6	0.100	0.048
Wheeled loader (Caterpillar 966)	Diesel	278	2	8	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	10.76	0.98	0.36	0.31	4.63	1867.3	0.102	0.049
Dozer (Caterpillar D6)	Diesel	215	1	8	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	7.17	0.71	0.40	0.34	5.40	858.8	0.040	0.019
Backhoe	Diesel	104	2	8	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	3.91	0.38	0.23	0.18	4.79	715.6	0.038	0.018
Grader (Caterpillar 120M3)	Diesel	145	1	8	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	4.96	0.52	0.28	0.24	3.68	553.3	0.027	0.013
Soil compactor (Caterpillar 815K)	Diesel	248	1	8	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	4.66	0.38	0.16	0.14	2.54	866.7	0.046	0.022
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Air compressor	Diesel	20	1	0	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Dive compressor	Diesel	50	1	0	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Welding machine	Diesel	25	1	0	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Derrick barge crane[6]	Diesel	375	1	0	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Derrick barge tug generator	Diesel	150	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Derrick barge tug mains[5]	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Derrick barge winch	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Derrick barge generators	Diesel	200	2	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Materials barge tug mains[5]	Diesel	1500	2	0	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Materials barge tug generator	Diesel	200	1	0	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Crew/support vessel mains	Diesel	640	3	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Crew/support vessel generator	Diesel	34	1	0	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Dive support vessel	Diesel	400	1	0	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Survey vessel (2 outboards[2])	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	0	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
													37.96	**3.57**	**1.64**	**1.39**	**25.17**	**6797.3**	**0.353**	**0.169**

ON-ROAD SOURCES

			Emission Factors, grams/mile [3]								Total Pounds							
On Road Sources	**Miles/One-way Trip**	**Peak Day One-Way Trips**	**NOx**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**	**NOx**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**
Light-duty truck (workers)[4]	20	20	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.09	0.01	0.00	0.00	0.94	286.7	0.004	0.006
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Heavy-duty truck (soil removal-non-hazardous)[7]	50	96	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	13.56	0.20	0.17	0.16	1.08	15214.4	0.009	1.583
Heavy-duty truck (backfill)	45	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
									Totals =>		**13.65**	**0.21**	**0.17**	**0.16**	**2.02**	**15501.1**	**0.0132**	**1.5895**
									SB County		**0.63**	**0.02**	**0.01**	**0.01**	**0.98**	**895.3**	**0.0042**	**0.0697**
									Ventura Co		**13.01**	**0.19**	**0.16**	**0.16**	**1.04**	**14605.8**	**0.0090**	**1.5198**
									LA County		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**	**0.0000**	**0.0000**
									Kern County		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**	**0.0000**	**0.0000**
									Kings County		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.0**	**0.0000**	**0.0000**
									Off-Road & On-Road Source Totals		**51.6**	**3.8**	**1.8**	**1.6**	**27.2**	**22298.4**	**0.3658**	**1.7581**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area

[5] Hours based on 23 hour round trip and 2 hours per work day for moving barge

[6] Includes 40 hours for offloading pipe at Port of LA/LB

[7] Peak day truck trips based on 16 truck fleet making 3 round trips (96 one-way trips)

Carpinteria Oil & Gas Processing Facilities Decommissioning
Gail and Grace Pipeline Bundle - Peak Day

OFF-ROAD SOURCES

					Emission Factors: pounds/BHP-hr [1]								Pounds							
Source	**Fuel**	**BHP**	**Number**	**Total Hours per Source**	**NO_x**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**	**NO_x**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**
Excavator (Caterpillar 330)	Diesel	272	1	8	0.00149	0.00014	0.00005	0.00004	0.00095	0.44475	0.000023	0.000011	3.24	0.30	0.11	0.09	2.07	967.8	0.050	0.024
Wheeled loader (Caterpillar 966)	Diesel	278	1	8	0.00242	0.00022	0.00008	0.00007	0.00104	0.41981	0.000023	0.000011	5.38	0.49	0.18	0.16	2.31	933.7	0.051	0.024
Dozer (Caterpillar D6)	Diesel	215	1	0	0.00417	0.00041	0.00023	0.00020	0.00314	0.49930	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Backhoe	Diesel	104	1	0	0.00235	0.00023	0.00014	0.00011	0.00288	0.43005	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Grader (Caterpillar 120M3)	Diesel	145	1	0	0.00428	0.00045	0.00024	0.00021	0.00317	0.47698	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Soil compactor (Caterpillar 815K)	Diesel	248	1	0	0.00235	0.00019	0.00008	0.00007	0.00128	0.43685	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Boomlift	Diesel	75	1	0	0.00111	0.00007	0.00003	0.00003	0.00215	0.35869	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Flush pump	Diesel	20	1	0	0.00735	0.00100	0.00035	0.00032	0.00500	0.92681	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Air compressor	Diesel	20	1	8	0.00734	0.00092	0.00033	0.00030	0.00479	0.92733	0.000023	0.000011	1.17	0.15	0.05	0.05	0.77	148.4	0.004	0.002
Dive compressor	Diesel	50	1	6	0.00452	0.00082	0.00024	0.00022	0.00539	0.60167	0.000023	0.000011	1.36	0.25	0.07	0.07	1.62	180.5	0.007	0.003
Welding machine	Diesel	25	1	4	0.00447	0.00061	0.00021	0.00019	0.00285	0.56383	0.000023	0.000011	0.45	0.06	0.02	0.02	0.29	56.4	0.002	0.001
Derrick barge crane[6]	Diesel	375	1	8	0.00268	0.00023	0.00011	0.00010	0.00112	0.33508	0.000023	0.000011	8.04	0.69	0.33	0.30	3.36	1005.2	0.069	0.033
Derrick barge tug generator	Diesel	150	1	12	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	13.07	1.22	0.58	0.54	5.35	829.6	0.020	0.038
Derrick barge tug mains[5]	Diesel	1500	2	2	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	31.38	2.46	1.56	1.38	9.06	1993.7	0.042	0.090
Derrick barge winch	Diesel	200	1	8	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	11.62	1.09	0.51	0.48	4.75	737.5	0.018	0.034
Derrick barge generators	Diesel	200	2	12	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	34.85	3.26	1.54	1.44	14.26	2212.4	0.053	0.101
Materials barge tug mains[5]	Diesel	1500	2	2	0.00523	0.00041	0.00026	0.00023	0.00151	0.33228	0.000007	0.000015	31.38	2.46	1.56	1.38	9.06	1993.7	0.042	0.090
Materials barge tug generator	Diesel	200	1	12	0.00726	0.00068	0.00032	0.00030	0.00297	0.46091	0.000011	0.000021	17.42	1.63	0.77	0.72	7.13	1106.2	0.026	0.050
Crew/support vessel mains	Diesel	640	3	4	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000018	49.23	3.84	2.46	2.30	14.28	3128.1	0.061	0.138
Crew/support vessel generator	Diesel	34	1	12	0.00510	0.00133	0.00048	0.00045	0.00408	0.34300	0.000022	0.000015	2.08	0.54	0.20	0.18	1.66	139.9	0.009	0.006
Dive support vessel	Diesel	400	1	6	0.00641	0.00050	0.00032	0.00030	0.00186	0.40731	0.000008	0.000180	15.38	1.20	0.77	0.72	4.46	977.5	0.019	0.432
Survey vessel (2 outboards[2])	Gasoline	150	2	0	0.00153	0.02185	0.00770	0.00700	0.49320	1.00000	0.000023	0.000010	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Cement pump	Diesel	175	1	0	0.00136	0.00009	0.00006	0.00005	0.00193	0.33452	0.000023	0.000011	0.00	0.00	0.00	0.00	0.00	0.0	0.000	0.000
Toyo pump (300KW generator)	Diesel	400	1	8	0.00066	0.00013	0.00003	0.00003	0.00077	0.34452	0.000023	0.000011	2.11	0.42	0.10	0.08	2.46	1102.5	0.074	0.035
													228.16	**20.06**	**10.79**	**9.90**	**82.89**	**17513.0**	**0.5469**	**1.1017**

ON-ROAD SOURCES

			Emission Factors, grams/mile [3]								Pounds							
On Road Sources	**Miles/One-way Trip**	**Total One-Way Trips**	**NOx**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**	**NOx**	**ROG**	**PM10**	**PM2.5**	**CO**	**CO2**	**CH4**	**N2O**
Light-duty truck (workers)[4]	20	0	0.10250	0.01498	0.00121	0.00111	1.06130	325.0990	0.00439	0.00720	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy-duty truck (equipment/piping)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy-duty truck (surface materials)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy-duty truck (surface materials-oil spray)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy-duty truck (soil removal-hazardous)	201	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy-duty truck (soil removal-non-hazardous)	50	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy-duty truck (backfill)	45	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Heavy-duty truck (flush water disposal)	25	0	1.28113	0.01901	0.01607	0.01537	0.10224	1437.7630	0.00088	0.14961	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
									Totals =>		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.0**	**0.0000**	**0.0000**
									SB County		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
									Ventura Co		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
									LA County		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
									Kern County		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
									Kings County		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.00**	**0.0000**	**0.0000**
									Off-Road & On-Road Source Totals		**228.163**	**20.065**	**10.792**	**9.903**	**82.888**	**17513.0**	**0.5469**	**1.1017**

Notes:

[1] Emission factors from OFFROAD 2017 (ver 1.0.1) for Santa Barbara County, except diesel vessel factors from San Pedro Bay Ports Emissions Inventory

[2] Emission factors from 2010 Federal standards for outboard motors (average of 2-stroke and 4-stroke)

[3] Emission factors from EMFAC 2021 for Santa Barbara County year 2022 annual emissions

[4] Based on an average of 20 one-way trips per day over the duration of onshore work in the subject area

[5] Hours based on 23 hour round trip and 2 hours per work day for moving barge

[6] Includes 40 hours for offloading pipe at Port of LA/LB

HARP Project Summary Report 2/20/2024 9:13:19 AM

PROJECT INFORMATION
HARP Version: 22118
Project Name: CARPINTERIA
Project Output Directory: C:\HARP2\Projects\Carp\CARPINTERIA
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):269455
Y (m):3808017
Zone:11
No. of Sources:13
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:299
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	Multi	Annual Ems (lbs/yr)	MaxHr Ems (lbs/hr)	MWAF
1	0	0	9901	DieselExhPM	1	33.3	0	1
1	0	0	1151	PAHsnonNapth	1	0	0	1
1	0	0	50000	Formaldehyde	1	0	0	1
1	0	0	71432	Benzene	1	0	0	1
1	0	0	75070	Acetaldehyde	1	0	0	1
1	0	0	91203	PAHsNapth	1	0	0	1
1	0	0	100414	Ethylbenzene	1	0	0	1
1	0	0	106990	13Butadiene	1	0	0	1
1	0	0	107028	Acrolein	1	0	0	1
1	0	0	108883	Toluene	1	0	0	1
1	0	0	110543	Hexane	1	0	0	1
1	0	0	1330207	Xylenes	1	0	0	1
1	0	0	7439921	Lead	1	0	0	1
1	0	0	7439965	Manganese	1	0	0	1
1	0	0	7439976	Mercury	1	0	0	1
1	0	0	7440020	Nickel	1	0	0	1
1	0	0	7440382	Arsenic	1	0	0	1
1	0	0	7440439	Cadmium	1	0	0	1
1	0	0	7440508	Copper	1	0	0	1
1	0	0	7647010	Hydrochloricacid	1	0	0	1
1	0	0	7664417	Ammonia	1	0	0	1
1	0	0	7782492	Selenium	1	0	0	1
1	0	0	18540299	Hexchromium	1	0	0	1
2	0	0	9901	DieselExhPM	1	30.1	0	1
2	0	0	1151	PAHsnonNapth	1	0	0	1
2	0	0	50000	Formaldehyde	1	0	0	1
2	0	0	71432	Benzene	1	0	0	1
2	0	0	75070	Acetaldehyde	1	0	0	1

2	0	0	91203	PAHsNapth	1	0	0	1
2	0	0	100414	Ethylbenzene	1	0	0	1
2	0	0	106990	13Butadiene	1	0	0	1
2	0	0	107028	Acrolein	1	0	0	1
2	0	0	108883	Toluene	1	0	0	1
2	0	0	110543	Hexane	1	0	0	1
2	0	0	1330207	Xylenes	1	0	0	1
2	0	0	7439921	Lead	1	0	0	1
2	0	0	7439965	Manganese	1	0	0	1
2	0	0	7439976	Mercury	1	0	0	1
2	0	0	7440020	Nickel	1	0	0	1
2	0	0	7440382	Arsenic	1	0	0	1
2	0	0	7440439	Cadmium	1	0	0	1
2	0	0	7440508	Copper	1	0	0	1
2	0	0	7647010	Hydrochloricacid	1	0	0	1
2	0	0	7664417	Ammonia	1	0	0	1
2	0	0	7782492	Selenium	1	0	0	1
2	0	0	18540299	Hexchromium	1	0	0	1
3	0	0	9901	DieselExhPM	1	10.7	0	1
3	0	0	1151	PAHsnonNapth	1	0	0	1
3	0	0	50000	Formaldehyde	1	0	0	1
3	0	0	71432	Benzene	1	0	0	1
3	0	0	75070	Acetaldehyde	1	0	0	1
3	0	0	91203	PAHsNapth	1	0	0	1
3	0	0	100414	Ethylbenzene	1	0	0	1
3	0	0	106990	13Butadiene	1	0	0	1
3	0	0	107028	Acrolein	1	0	0	1
3	0	0	108883	Toluene	1	0	0	1
3	0	0	110543	Hexane	1	0	0	1
3	0	0	1330207	Xylenes	1	0	0	1
3	0	0	7439921	Lead	1	0	0	1
3	0	0	7439965	Manganese	1	0	0	1
3	0	0	7439976	Mercury	1	0	0	1
3	0	0	7440020	Nickel	1	0	0	1
3	0	0	7440382	Arsenic	1	0	0	1
3	0	0	7440439	Cadmium	1	0	0	1
3	0	0	7440508	Copper	1	0	0	1
3	0	0	7647010	Hydrochloricacid	1	0	0	1
3	0	0	7664417	Ammonia	1	0	0	1
3	0	0	7782492	Selenium	1	0	0	1
3	0	0	18540299	Hexchromium	1	0	0	1
4	0	0	9901	DieselExhPM	1	6	0	1
4	0	0	1151	PAHsnonNapth	1	0	0	1
4	0	0	50000	Formaldehyde	1	0	0	1
4	0	0	71432	Benzene	1	0	0	1
4	0	0	75070	Acetaldehyde	1	0	0	1
4	0	0	91203	PAHsNapth	1	0	0	1
4	0	0	100414	Ethylbenzene	1	0	0	1
4	0	0	106990	13Butadiene	1	0	0	1
4	0	0	107028	Acrolein	1	0	0	1
4	0	0	108883	Toluene	1	0	0	1
4	0	0	110543	Hexane	1	0	0	1
4	0	0	1330207	Xylenes	1	0	0	1
4	0	0	7439921	Lead	1	0	0	1

4	0	0	7439965	Manganese	1	0	0	1
4	0	0	7439976	Mercury	1	0	0	1
4	0	0	7440020	Nickel	1	0	0	1
4	0	0	7440382	Arsenic	1	0	0	1
4	0	0	7440439	Cadmium	1	0	0	1
4	0	0	7440508	Copper	1	0	0	1
4	0	0	7647010	Hydrochloricacid	1	0	0	1
4	0	0	7664417	Ammonia	1	0	0	1
4	0	0	7782492	Selenium	1	0	0	1
4	0	0	18540299	Hexchromium	1	0	0	1
5	0	0	9901	DieselExhPM	1	3.04	0	1
5	0	0	1151	PAHsnonNapth	1	0	0	1
5	0	0	50000	Formaldehyde	1	0	0	1
5	0	0	71432	Benzene	1	0	0	1
5	0	0	75070	Acetaldehyde	1	0	0	1
5	0	0	91203	PAHsNapth	1	0	0	1
5	0	0	100414	Ethylbenzene	1	0	0	1
5	0	0	106990	13Butadiene	1	0	0	1
5	0	0	107028	Acrolein	1	0	0	1
5	0	0	108883	Toluene	1	0	0	1
5	0	0	110543	Hexane	1	0	0	1
5	0	0	1330207	Xylenes	1	0	0	1
5	0	0	7439921	Lead	1	0	0	1
5	0	0	7439965	Manganese	1	0	0	1
5	0	0	7439976	Mercury	1	0	0	1
5	0	0	7440020	Nickel	1	0	0	1
5	0	0	7440382	Arsenic	1	0	0	1
5	0	0	7440439	Cadmium	1	0	0	1
5	0	0	7440508	Copper	1	0	0	1
5	0	0	7647010	Hydrochloricacid	1	0	0	1
5	0	0	7664417	Ammonia	1	0	0	1
5	0	0	7782492	Selenium	1	0	0	1
5	0	0	18540299	Hexchromium	1	0	0	1
6	0	0	9901	DieselExhPM	1	5.66	0	1
6	0	0	1151	PAHsnonNapth	1	0	9.96E-05	1
6	0	0	50000	Formaldehyde	1	0	0.00308	1
6	0	0	71432	Benzene	1	0	0.000332	1
6	0	0	75070	Acetaldehyde	1	0	0.0014	1
6	0	0	91203	PAHsNapth	1	0	3.51E-05	1
6	0	0	100414	Ethylbenzene	1	0	1.94E-05	1
6	0	0	106990	13Butadiene	1	0	0.000387	1
6	0	0	107028	Acrolein	1	0	6.04E-05	1
6	0	0	108883	Toluene	1	0	0.000188	1
6	0	0	110543	Hexane	1	0	4.79E-05	1
6	0	0	1330207	Xylenes	1	0	7.55E-05	1
6	0	0	7439921	Lead	1	0	1.48E-05	1
6	0	0	7439965	Manganese	1	0	5.52E-06	1
6	0	0	7439976	Mercury	1	0	3.56E-06	1
6	0	0	7440020	Nickel	1	0	6.95E-06	1
6	0	0	7440382	Arsenic	1	0	2.85E-06	1
6	0	0	7440439	Cadmium	1	0	2.67E-06	1
6	0	0	7440508	Copper	1	0	7.31E-06	1
6	0	0	7647010	Hydrochloricacid	1	0	0.000332	1
6	0	0	7664417	Ammonia	1	0	0.00517	1

6	0	0	7782492	Selenium	1	0	3.92E-06	1	
6	0	0	18540299	Hexchromium	1	0	1.78E-07	1	
7	0	0	9901	DieselExhPM	1	3.19	0	1	
7	0	0	1151	PAHsnonNapth	1	0	0.000837	1	
7	0	0	50000	Formaldehyde	1	0	0.0258	1	
7	0	0	71432	Benzene	1	0	0.00279	1	
7	0	0	75070	Acetaldehyde	1	0	0.0117	1	
7	0	0	91203	PAHsNapth	1	0	0.000295	1	
7	0	0	100414	Ethylbenzene	1	0	0.000163	1	
7	0	0	106990	13Butadiene	1	0	0.00325	1	
7	0	0	107028	Acrolein	1	0	0.000508	1	
7	0	0	108883	Toluene	1	0	0.00158	1	
7	0	0	110543	Hexane	1	0	0.000403	1	
7	0	0	1330207	Xylenes	1	0	0.000635	1	
7	0	0	7439921	Lead	1	0	0.000124	1	
7	0	0	7439965	Manganese	1	0	4.64E-05	1	
7	0	0	7439976	Mercury	1	0	2.99E-05	1	
7	0	0	7440020	Nickel	1	0	5.84E-05	1	
7	0	0	7440382	Arsenic	1	0	2.4E-05	1	
7	0	0	7440439	Cadmium	1	0	2.25E-05	1	
7	0	0	7440508	Copper	1	0	6.14E-05	1	
7	0	0	7647010	Hydrochloricacid	1	0	0.00279	1	
7	0	0	7664417	Ammonia	1	0	0.0434	1	
7	0	0	7782492	Selenium	1	0	3.29E-05	1	
7	0	0	18540299	Hexchromium	1	0	1.5E-06	1	
8	0	0	9901	DieselExhPM	1	51.4	0	1	
8	0	0	1151	PAHsnonNapth	1	0	0.000342	1	
8	0	0	50000	Formaldehyde	1	0	0.0106	1	
8	0	0	71432	Benzene	1	0	0.00114	1	
8	0	0	75070	Acetaldehyde	1	0	0.00479	1	
8	0	0	91203	PAHsNapth	1	0	0.00012	1	
8	0	0	100414	Ethylbenzene	1	0	6.67E-05	1	
8	0	0	106990	13Butadiene	1	0	0.00133	1	
8	0	0	107028	Acrolein	1	0	0.000207	1	
8	0	0	108883	Toluene	1	0	0.000645	1	
8	0	0	110543	Hexane	1	0	0.000165	1	
8	0	0	1330207	Xylenes	1	0	0.000259	1	
8	0	0	7439921	Lead	1	0	5.08E-05	1	
8	0	0	7439965	Manganese	1	0	1.9E-05	1	
8	0	0	7439976	Mercury	1	0	1.22E-05	1	
8	0	0	7440020	Nickel	1	0	2.39E-05	1	
8	0	0	7440382	Arsenic	1	0	9.79E-06	1	
8	0	0	7440439	Cadmium	1	0	9.17E-06	1	
8	0	0	7440508	Copper	1	0	2.51E-05	1	
8	0	0	7647010	Hydrochloricacid	1	0	0.00114	1	
8	0	0	7664417	Ammonia	1	0	0.0177	1	
8	0	0	7782492	Selenium	1	0	1.35E-05	1	
8	0	0	18540299	Hexchromium	1	0	6.12E-07	1	
9	0	0	9901	DieselExhPM	1	19.6	0	1	
9	0	0	1151	PAHsnonNapth	1	0	0	1	
9	0	0	50000	Formaldehyde	1	0	0	1	
9	0	0	71432	Benzene	1	0	0	1	
9	0	0	75070	Acetaldehyde	1	0	0	1	
9	0	0	91203	PAHsNapth	1	0	0	1	

9	0	0	100414	Ethylbenzene	1	0	0	1
9	0	0	106990	13Butadiene	1	0	0	1
9	0	0	107028	Acrolein	1	0	0	1
9	0	0	108883	Toluene	1	0	0	1
9	0	0	110543	Hexane	1	0	0	1
9	0	0	1330207	Xylenes	1	0	0	1
9	0	0	7439921	Lead	1	0	0	1
9	0	0	7439965	Manganese	1	0	0	1
9	0	0	7439976	Mercury	1	0	0	1
9	0	0	7440020	Nickel	1	0	0	1
9	0	0	7440382	Arsenic	1	0	0	1
9	0	0	7440439	Cadmium	1	0	0	1
9	0	0	7440508	Copper	1	0	0	1
9	0	0	7647010	Hydrochloricacid	1	0	0	1
9	0	0	7664417	Ammonia	1	0	0	1
9	0	0	7782492	Selenium	1	0	0	1
9	0	0	18540299	Hexchromium	1	0	0	1
10	0	0	9901	DieselExhPM	1	8.28	0	1
10	0	0	1151	PAHsnonNapth	1	0	0	1
10	0	0	50000	Formaldehyde	1	0	0	1
10	0	0	71432	Benzene	1	0	0	1
10	0	0	75070	Acetaldehyde	1	0	0	1
10	0	0	91203	PAHsNapth	1	0	0	1
10	0	0	100414	Ethylbenzene	1	0	0	1
10	0	0	106990	13Butadiene	1	0	0	1
10	0	0	107028	Acrolein	1	0	0	1
10	0	0	108883	Toluene	1	0	0	1
10	0	0	110543	Hexane	1	0	0	1
10	0	0	1330207	Xylenes	1	0	0	1
10	0	0	7439921	Lead	1	0	0	1
10	0	0	7439965	Manganese	1	0	0	1
10	0	0	7439976	Mercury	1	0	0	1
10	0	0	7440020	Nickel	1	0	0	1
10	0	0	7440382	Arsenic	1	0	0	1
10	0	0	7440439	Cadmium	1	0	0	1
10	0	0	7440508	Copper	1	0	0	1
10	0	0	7647010	Hydrochloricacid	1	0	0	1
10	0	0	7664417	Ammonia	1	0	0	1
10	0	0	7782492	Selenium	1	0	0	1
10	0	0	18540299	Hexchromium	1	0	0	1
11	0	0	9901	DieselExhPM	1	0.0244	0	1
11	0	0	1151	PAHsnonNapth	1	0	2.73E-06	1
11	0	0	50000	Formaldehyde	1	0	8.43E-05	1
11	0	0	71432	Benzene	1	0	9.1E-06	1
11	0	0	75070	Acetaldehyde	1	0	3.82E-05	1
11	0	0	91203	PAHsNapth	1	0	9.62E-07	1
11	0	0	100414	Ethylbenzene	1	0	5.32E-07	1
11	0	0	106990	13Butadiene	1	0	1.06E-05	1
11	0	0	107028	Acrolein	1	0	1.66E-06	1
11	0	0	108883	Toluene	1	0	5.15E-06	1
11	0	0	110543	Hexane	1	0	1.31E-06	1
11	0	0	1330207	Xylenes	1	0	2.07E-06	1
11	0	0	7439921	Lead	1	0	4.05E-07	1
11	0	0	7439965	Manganese	1	0	1.51E-07	1

11	0	0	7439976	Mercury	1	0	9.76E-08	1
11	0	0	7440020	Nickel	1	0	1.9E-07	1
11	0	0	7440382	Arsenic	1	0	7.81E-08	1
11	0	0	7440439	Cadmium	1	0	7.32E-08	1
11	0	0	7440508	Copper	1	0	2E-07	1
11	0	0	7647010	Hydrochloricacid	1	0	9.1E-06	1
11	0	0	7664417	Ammonia	1	0	0.000142	1
11	0	0	7782492	Selenium	1	0	1.07E-07	1
11	0	0	18540299	Hexchromium	1	0	4.88E-09	1
12	0	0	9901	DieselExhPM	1	0.0204	0	1
12	0	0	1151	PAHsnonNapth	1	0	2.28E-06	1
12	0	0	50000	Formaldehyde	1	0	7.04E-05	1
12	0	0	71432	Benzene	1	0	7.6E-06	1
12	0	0	75070	Acetaldehyde	1	0	3.2E-05	1
12	0	0	91203	PAHsNapth	1	0	8.04E-07	1
12	0	0	100414	Ethylbenzene	1	0	4.45E-07	1
12	0	0	106990	13Butadiene	1	0	8.87E-06	1
12	0	0	107028	Acrolein	1	0	1.38E-06	1
12	0	0	108883	Toluene	1	0	4.3E-06	1
12	0	0	110543	Hexane	1	0	1.1E-06	1
12	0	0	1330207	Xylenes	1	0	1.73E-06	1
12	0	0	7439921	Lead	1	0	3.39E-07	1
12	0	0	7439965	Manganese	1	0	1.26E-07	1
12	0	0	7439976	Mercury	1	0	8.16E-08	1
12	0	0	7440020	Nickel	1	0	1.59E-07	1
12	0	0	7440382	Arsenic	1	0	6.53E-08	1
12	0	0	7440439	Cadmium	1	0	6.12E-08	1
12	0	0	7440508	Copper	1	0	1.67E-07	1
12	0	0	7647010	Hydrochloricacid	1	0	7.6E-06	1
12	0	0	7664417	Ammonia	1	0	0.000118	1
12	0	0	7782492	Selenium	1	0	8.98E-08	1
12	0	0	18540299	Hexchromium	1	0	4.08E-09	1
13	0	0	9901	DieselExhPM	1	0.0392	0	1
13	0	0	1151	PAHsnonNapth	1	0	4.38E-06	1
13	0	0	50000	Formaldehyde	1	0	0.000135	1
13	0	0	71432	Benzene	1	0	1.46E-05	1
13	0	0	75070	Acetaldehyde	1	0	6.14E-05	1
13	0	0	91203	PAHsNapth	1	0	1.54E-06	1
13	0	0	100414	Ethylbenzene	1	0	8.54E-07	1
13	0	0	106990	13Butadiene	1	0	1.7E-05	1
13	0	0	107028	Acrolein	1	0	2.66E-06	1
13	0	0	108883	Toluene	1	0	8.26E-06	1
13	0	0	110543	Hexane	1	0	2.11E-06	1
13	0	0	1330207	Xylenes	1	0	3.32E-06	1
13	0	0	7439921	Lead	1	0	6.5E-07	1
13	0	0	7439965	Manganese	1	0	2.43E-07	1
13	0	0	7439976	Mercury	1	0	1.57E-07	1
13	0	0	7440020	Nickel	1	0	3.06E-07	1
13	0	0	7440382	Arsenic	1	0	1.25E-07	1
13	0	0	7440439	Cadmium	1	0	1.18E-07	1
13	0	0	7440508	Copper	1	0	3.21E-07	1
13	0	0	7647010	Hydrochloricacid	1	0	1.46E-05	1
13	0	0	7664417	Ammonia	1	0	0.000227	1
13	0	0	7782492	Selenium	1	0	1.72E-07	1

13	0	0	18540299	Hexchromium	1	0	7.84E-09	1

Background

PolID	PolAbbrev	Conc (ug/m^3)	MWAF

Ground level concentration files (\glc\)

100414MAXHR.txt
100414PER.txt
106990MAXHR.txt
106990PER.txt
107028MAXHR.txt
107028PER.txt
108883MAXHR.txt
108883PER.txt
110543MAXHR.txt
110543PER.txt
1151MAXHR.txt
1151PER.txt
1330207MAXHR.txt
1330207PER.txt
18540299MAXHR.txt
18540299PER.txt
50000MAXHR.txt
50000PER.txt
71432MAXHR.txt
71432PER.txt
7439921MAXHR.txt
7439921PER.txt
7439965MAXHR.txt
7439965PER.txt
7439976MAXHR.txt
7439976PER.txt
7440020MAXHR.txt
7440020PER.txt
7440382MAXHR.txt
7440382PER.txt
7440439MAXHR.txt
7440439PER.txt
7440508MAXHR.txt
7440508PER.txt
75070MAXHR.txt
75070PER.txt
7647010MAXHR.txt
7647010PER.txt
7664417MAXHR.txt
7664417PER.txt
7782492MAXHR.txt
7782492PER.txt
91203MAXHR.txt
91203PER.txt
9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH23118
Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	InhChronicREL	OralChronicREL	InhChronic8HRREL
9901	DieselExhPM	1.1			5		
1151	PAHs-w/o	3.9	12				
50000	Formaldehyde	0.021		55	9		9
71432	Benzene	0.1		27	3		3
75070	Acetaldehyde	0.01		470	140		300
91203	Naphthalene	0.12			9		
100414	Ethyl Benzene	0.0087			2000		
106990	1,3-Butadiene	0.6		660	2		9
107028	Acrolein			2.5	0.35		0.7
108883	Toluene			5000	420		830
110543	Hexane				7000		
1330207	Xylenes			22000	700		
7439921	Lead	0.042	0.0085				
7439965	Manganese				0.09		0.17
7439976	Mercury			0.6	0.03	0.00016	0.06
7440020	Nickel	0.91		0.2	0.014	0.011	0.06
7440382	Arsenic	12	1.5	0.2	0.015	3.5E-06	0.015
7440439	Cadmium	15			0.02	0.0005	
7440508	Copper			100			
7647010	HCl			2100	9		
7664417	NH3			3200	200		
7782492	Selenium				20	0.005	
18540299	Cr(VI)	510	0.5		0.2	0.02	

AIR DISPERSION MODELING INFORMATION
Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/)
AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION
Version:
Surface File: C:\HARP2\Projects\Carp\Carp12-16.SFC
Profile File: C:\HARP2\Projects\Carp\Carp12-16.PFL
Surface Station: 23190
Upper Station: 93214
On-Site Station: 8
Start Date & Time: 12 1 1 1
End Date & Time: 16 12 31 24
Hours Processed: 43848
Calm Hours: 93
Missing Hours: 702

LIST OF AIR DISPERSION FILES
AERMOD Input File: \CARPINTERIA_AERMOD.inp
AERMOD Output File: \CARPINTERIA_AERMOD.out
AERMOD Error File: \CARPINTERIA_AERMOD.ERR
Plotfile list

_____
MAX1HR1.PLT
MAX1HR10.PLT
MAX1HR11.PLT
MAX1HR12.PLT
MAX1HR13.PLT
MAX1HR2.PLT
MAX1HR3.PLT
MAX1HR4.PLT
MAX1HR5.PLT
MAX1HR6.PLT
MAX1HR7.PLT
MAX1HR8.PLT
MAX1HR9.PLT
PERIOD1.PLT
PERIOD10.PLT
PERIOD11.PLT
PERIOD12.PLT
PERIOD13.PLT
PERIOD2.PLT
PERIOD3.PLT
PERIOD4.PLT
PERIOD5.PLT
PERIOD6.PLT
PERIOD7.PLT
PERIOD8.PLT
PERIOD9.PLT

LIST OF RISK ASSESSMENT FILES
Health risk analysis files (\hra\)

_____
1.Carp572CancerRisk.csv
1.Carp572CancerRiskSumByRec.csv
1.Carp572GLCList.csv
1.Carp572HRAInput.hra
1.Carp572PathwayRec.csv
1.Carp572PolDB.csv
10.Carp572CancerRisk.csv
10.Carp572CancerRiskSumByRec.csv
10.Carp572GLCList.csv
10.Carp572HRAInput.hra
10.Carp572PathwayRec.csv
10.Carp572PolDB.csv
11.Carp572CancerRisk.csv
11.Carp572CancerRiskSumByRec.csv
11.Carp572GLCList.csv
11.Carp572HRAInput.hra
11.Carp572PathwayRec.csv

11.Carp572PolDB.csv
12.Carp572CancerRisk.csv
12.Carp572CancerRiskSumByRec.csv
12.Carp572GLCList.csv
12.Carp572HRAInput.hra
12.Carp572PathwayRec.csv
12.Carp572PolDB.csv
13.Carp572CancerRisk.csv
13.Carp572CancerRiskSumByRec.csv
13.Carp572GLCList.csv
13.Carp572HRAInput.hra
13.Carp572PathwayRec.csv
13.Carp572PolDB.csv
2.Carp572CancerRisk.csv
2.Carp572CancerRiskSumByRec.csv
2.Carp572GLCList.csv
2.Carp572HRAInput.hra
2.Carp572PathwayRec.csv
2.Carp572PolDB.csv
3.Carp572CancerRisk.csv
3.Carp572CancerRiskSumByRec.csv
3.Carp572GLCList.csv
3.Carp572HRAInput.hra
3.Carp572PathwayRec.csv
3.Carp572PolDB.csv
4.Carp572CancerRisk.csv
4.Carp572CancerRiskSumByRec.csv
4.Carp572GLCList.csv
4.Carp572HRAInput.hra
4.Carp572PathwayRec.csv
4.Carp572PolDB.csv
5.Carp572CancerRisk.csv
5.Carp572CancerRiskSumByRec.csv
5.Carp572GLCList.csv
5.Carp572HRAInput.hra
5.Carp572PathwayRec.csv
5.Carp572PolDB.csv
6.Carp572CancerRisk.csv
6.Carp572CancerRiskSumByRec.csv
6.Carp572GLCList.csv
6.Carp572HRAInput.hra
6.Carp572PathwayRec.csv
6.Carp572PolDB.csv
7.Carp572CancerRisk.csv
7.Carp572CancerRiskSumByRec.csv
7.Carp572GLCList.csv
7.Carp572HRAInput.hra
7.Carp572PathwayRec.csv
7.Carp572PolDB.csv
8.Carp572CancerRisk.csv
8.Carp572CancerRiskSumByRec.csv
8.Carp572GLCList.csv
8.Carp572HRAInput.hra
8.Carp572PathwayRec.csv

8.Carp572PolDB.csv
9.Carp572CancerRisk.csv
9.Carp572CancerRiskSumByRec.csv
9.Carp572GLCList.csv
9.Carp572HRAInput.hra
9.Carp572PathwayRec.csv
9.Carp572PolDB.csv
AQ GHG.lnk
Carp572CancerRisk.csv
Carp572CancerRiskSumByRec.csv
Carp572CancerRiskSumByRecBySrc.csv
Carp572GLCList.csv
Carp572HRAInput.hra
Carp572Output.txt
Carp572PathwayRec.csv
Carp572PolDB.csv
CarpCancerRisk.csv
CarpCancerRiskSumByRec.csv
CarpGLCList.csv
CarpHRAInput.hra
CarpNCAcuteRisk.csv
CarpNCAcuteRiskSumByRec.csv
CarpNCChronicRisk.csv
CarpNCChronicRiskSumByRec.csv
CarpOutput.txt
CarpPathwayRec.csv
CarpPolDB.csv

Spatial averaging files (\sa\)

HARP2 - HRACalc (dated 22118) 2/20/2024 9:07:36 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 2

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: ON

****
SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.05
Soil mixing depth (m): 0.01
Dermal climate: Warm

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to:
C:\HARP2\Projects\Carp\CARPINTERIA\hra\CarpCancerRisk.csv
Cancer risk total by receptor saved to: C:\HARP2\Projects\Carp\CARPINTERIA\hra\CarpCancerRiskSumByRec.csv
HRA ran successfully

HARP2 - HRACalc (dated 22118) 2/20/2024 9:11:01 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCAcute
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to:

C:\HARP2\Projects\Carp\CARPINTERIA\hra\CarpNCAcuteRisk.csv
Acute risk total by receptor saved to: C:\HARP2\Projects\Carp\CARPINTERIA\hra\CarpNCAcuteRiskSumByRec.csv
HRA ran successfully

HARP2 - HRACalc (dated 22118) 2/20/2024 9:09:32 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: True
Water: False
Fish: False
Homegrown crops: True
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
SOIL & DERMAL PATHWAY SETTINGS

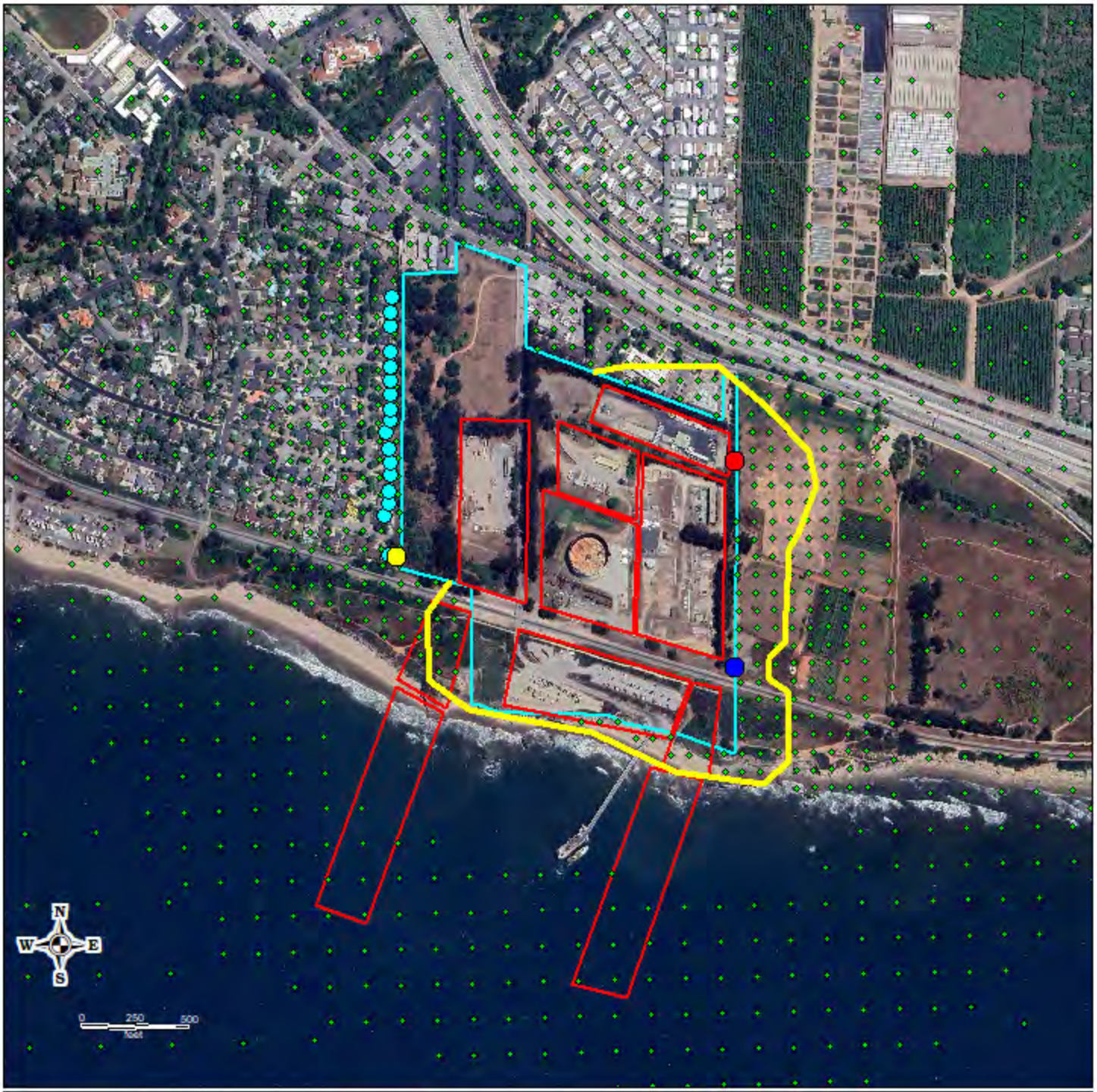
Deposition rate (m/s): 0.05
Soil mixing depth (m): 0.01
Dermal climate: Warm

****
HOMEGROWN CROP PATHWAY SETTINGS

Household type: HouseholdsthatGarden
Fraction leafy: 0.137
Fraction exposed: 0.137
Fraction protected: 0.137
Fraction root: 0.137

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to:
C:\HARP2\Projects\Carp\CARPINTERIA\hra\CarpNCChronicRisk.csv
Chronic risk total by receptor saved to:
C:\HARP2\Projects\Carp\CARPINTERIA\hra\CarpNCChronicRiskSumByRec.csv
HRA ran successfully


N
W
E
S
0
250
500
feet
Grid Point
Residential Receptor
Area Source
10 in a million cancer risk
Cancer PMI
Max Residential Cancer (MEIR)
Max Acute Risk

Appendix C

Biological Studies

Appendix C – Biological Studies

Appendix C-1

Terrestrial Biological Resources Study

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

TERRESTRIAL BIOLOGICAL RESOURCES STUDY

DECOMMISSIONING AND REMEDIATION OF THE CARPINTERIA OIL AND GAS PROCESSING FACILITIES CARPINTERIA, SANTA BARBARA COUNTY, CALIFORNIA

Project No. 2002-5211

Prepared for:

Chevron West Coast Decommissioning Program
3916 State Street, Suite 200
Santa Barbara, CA 93105

June 2021
Revision 1: December 2021
Revision 2: December 2022

1861 Knoll Drive ▪ Ventura, California 93003 ▪ 805-644-2220 ▪ www.padreinc.com

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1.0 REPORT SUMMARY

This Terrestrial Biological Resources Study (Study) has been prepared on behalf of Chevron U.S.A. Inc. (Chevron) for the Carpinteria Oil and Gas Processing Facilities (Project Site). The Project Site is divided into 12 Operational Areas, as listed in Table 1, and presented in Figure 1. The Study is a compilation of biological survey and biological monitoring data collected at different portions of the Project Site from 1998 (as originally documented in 2004) present in support of various operational, maintenance, demolition, and interim soil cleanup activities conducted onsite.

This survey includes the Onshore Processing Facility both north and south of the Union Pacific Railroad right-of-way out to the edge of the bluffs along its southern boundary. The beach crossing, intertidal and offshore pipeline corridor areas are addressed in a separate study. Current conditions at the Project Site are presented in this Study, unless otherwise indicated for historical context. Where appropriate, the inventory of biological resources at the Project Site is denoted by which of the Operational Areas each resource was observed at or is expected to occur.

Table 1. Operational Areas of the Project Site (in alphabetical order)

Name	Description
Buffer Zone	Mostly undeveloped, but actively managed open-space and a City-designated Environmentally Sensitive Habitat Area.
Chevron Pipeline Area	Comprised mainly of a large, former oil storage tank and earthen containment basin.
Drainage Area No. 4	Contiguous with the Buffer Zone at its lower extent and a City-designated Environmentally Sensitive Habitat Area. Has undergone substantial revegetation efforts in the last decade.
Former Marketing Terminal Area	Mostly developed[1], but also contains a concrete drainage ditch, and has undergone substantial revegetation efforts in its southern portion.
Former Nursery Area	Mostly undeveloped, but contains a remnant portion of asphalt road, historically cultivated, but fallow for over 20 years, and was seeded with annual grasses and native herbs in 2012.
Former Sandblast Area	Mostly undeveloped, having undergone past remediation and revegetation.
Main Plant Area	Entirely developed, with various tree windrow divisions.
MSRC Lease Area	Entirely developed, bordered by tree windrows.
Peninsula Area	Northeast access route beneath tree windrows.
Pier Parking Lot	Mostly developed bordered by Tar Pits Park and Carpinteria Bluffs Trail revegetation.
Pipeline Bluffs Crossing Area	Within or adjacent to eastern extent of Tar Pits Park and Carpinteria Bluffs Trail.
Shop and Maintenance Area	Mostly developed, with ornamental or native (planted) trees.

[1] The term “developed” is used to describe areas supporting buildings or other structures or surfaced with pavement or gravel that do not support vegetation, or at most, patchy ruderal vegetation

2.0 SETTING

2.1 REGIONAL SETTING

The Project Site is in the coastal zone within the City of Carpinteria in southeastern Santa Barbara County, California. The Project Site is bounded by the beach/coastal strand adjoining the Santa Barbara Channel, an east-west trending channel in the eastern Pacific Ocean. The Project Site is located on the coastal plain of Carpinteria Valley, adjacent to open space and agricultural lands. However, much of the area surrounding the Project Site has been developed into residential land uses adjacent to or within remnants of coastal scrub, annual grasslands or mature, mixed woodland areas (e.g., planted and native trees consisting of eucalyptus, sycamore, cottonwood, cypress, pine, and oak, and willow trees). The coastal plain is bordered to the north by the Santa Ynez Mountains, an east-west trending mountain range, which drains small, steep watersheds onto the coastal terrace. Carpinteria Creek is located approximately 0.5 miles west of the Project Site and has been designated as an Environmentally Sensitive Habitat Area (ESHA). Other biologically important areas include the Carpinteria Salt Marsh (located approximately 1.5 miles to the northwest) and Carpinteria Bluffs (located approximately 1,500 feet to the east).

2.2 APPLICABLE CITY GENERAL PLAN POLICIES

The City of Carpinteria General Plan and Local Coastal Plan (2003) identified portions of the Project Site as being part of the Carpinteria Bluffs ESHA, including the Buffer Zone, Pier Parking Lot, Former Sand Blast Area, and Pipeline Bluffs Crossing Area. In addition, the eucalyptus windrow bordering the eastern edge of the Project Site and the agricultural field east of the Project Site were mapped as ESHA in the General Plan and Local Coastal Plan. Note, however, that portions of some of these areas are developed and the General Plan and Local Coastal Plan states, “the designations of the land use plan are not definitive and are to be supplemented with subsequent program and project level resources study and mapping.”

According to the City of Carpinteria General Plan 2019 Annual Progress Report (accepted May 11, 2020), “the City’s Land Use Map (2016) designates environmentally sensitive habitat areas within and surrounding Carpinteria. These natural areas are often protected as open space and/or recreation zones, include the bluffs, wetlands, salt marsh, beaches, tidelands, subtidal reefs, harbor seal rookery and haulouts, creekways and riparian habitats, native plan communities, and butterfly habitat.” The City’s Land Use Map’s Open Space/Recreation land use designation presumably delineates the ESHA boundaries within the Project Site to currently be limited to the Buffer Zone and Pipeline Bluffs Crossing Area. The remaining areas listed above formerly as ESHA, in addition to other developed portions of the Project Site that were formerly not designated ESHA are zoned as Coastal Dependent Industry or Planned Unit Development.

Objective OSC-1 of the City of Carpinteria General Plan and Local Coastal Plan is to "Protect, preserve and enhance local natural resources and habitats." This includes prohibiting activities that could damage or destroy ESHA, and establishing and supporting preservation and restoration programs for ESHA. Objective OSC-1 includes a list of Implementation Policies requiring compliance with the California Environmental Quality Act (CEQA), and maintaining an ESHA Overlay zoning district intended to provide maximum protection to sensitive resources. The ESHA Overlay district applies to any parcel identified as ESHA either on an official resource map adopted by the City or through the City's development review process, any parcel meeting the ESHA criteria provided in the General Plan and Local Coastal Plan, and any parcel located within 250 feet of a parcel so designated or determined to be ESHA.

Objective OSC-2 of the City of Carpinteria General Plan and Local Coastal Plan is to "Preserve and restore the natural resources of the Carpinteria Bluffs." Policy OSC-2i under Objective OSC-2 states:

> "Preserve all windrow trees as one part of a contiguous and naturally preserved open space system across the whole of the Carpinteria Bluffs. Thinning, pruning and removal of trees shall be limited to what is necessary to maintain the trees in a healthful condition and to remove any hazardous condition. When a tree is approved by the City for removal, it shall be required to be replaced at a ratio appropriate to ensure infill of any gap created in the windrow and with a tree type and size to be approved by the City. Replacement trees that fail to survive within the first five years after planting shall be replaced. Planting of native trees is encouraged as are programs for phased removal and replacement of tamarisk windrows in favor of native tree windrows. Development or other activity proposed on parcels including windrows shall be setback a minimum of 10 feet from the drip line of the trees and shall not result in compacting of soil or other potential damage to the trees' root system or water source."

According to the City of Carpinteria Guidelines for the Implementation of the California Environmental Quality Act (CEQA) for impacts to biological resources, specimen trees are defined in the City's Municipal Code as:

> "those with a diameter of at least six inches measured four feet above the ground with a minimum height of at least six feet. For trees that do not have a single trunk, the diameter of all upright woody stems should be combined for the measurement of the diameter…All native tree species, regardless of size, should be considered to be biologically valuable. In particular, young oak trees which do not meet the definition of specimen trees are a significant biological resource due to declining oak populations."

2.3 LOCAL SETTING

2.3.1 Trees

Based on the importance of certain tree windrows expressed in the City's General Plan and Local Plan Policy OSC-2i and City Guidelines, a tree inventory was completed in 2004 for the interim remediation measures conducted within the Buffer Zone (including Drainage Area No. 4) and Former Nursery Area. It was noted at the time that most of the oaks were saplings, 1 to 3 inches in diameter at breast height, and the largest oak was only 12 inches in diameter at breast height. Since that time, many of these trees within the Buffer Zone have grown in stature or have sustained their windrow composition and areal coverage. Notably, however, many of the Monterey pine (*Pinus radiata*) trees have naturally died off and have been felled to eliminate safety hazards. Recent vegetation management of a 30-foot-wide swath along the western fence line of the Former Nursery Area and Buffer Zone for defensible space against fire also removed two (2) Mexican fan palm (*Washingtonia robusta*) trees. To obtain an accurate tally of all the trees currently present within the Project Site, a follow-up inventory of all the remaining Operational Areas was completed in April 2021. Table 2 provides the current totals of live tree quantities per species at the Project Site. Additional information on tree windrows is provided in the Vegetation section below.

Table 2. Tree Inventory of the Project Site

Common Name	Scientific Name	Tally (2021)	Origin
Blue gum	*Eucalyptus globulus*	677	Non-native, planted, some on-site reproduction
Monterey pine	*Pinus radiata*	42	Introduced, planted
Aleppo pine	*Pinus halepensis*	2	Non-native, planted
Monterey cypress	*Cupressus macrocarpa*	38	Introduced, planted
Coast live oak	*Quercus agrifolia*	225	Native, colonized site, planted, on-site reproduction
London plane tree	*Platanus x. acerifolia*	4	Introduced, planted
Western sycamore	*Platanus racemosa*	80	Native, planted, on-site reproduction
Arroyo willow	*Salix lasiolepis*	51	Native, colonized site
Mexican fan palm	*Washingtonia robusta*	4	Non-native, colonized site
Norfolk Island pine	*Araucaria heterophylla*	1	Non-native, planted
Victorian box	*Pittosporum undulatum*	31	Non-native, planted
Myoporum	*Myoporum laetum*	10	Non-native, planted
Brazilian pepper	*Schinus terebinthifolius*	5	Non-native, planted
Oregon ash	*Fraxinus latifolia*	9	Introduced, planted
Athel tamarisk	*Tamarix aphylla*	93	Non-native, planted
Dawn redwood	*Metasequoia glyptostroboides*	7	Non-native, planted
Avocado	*Persea americana*	5	Non-native, planted
Sydney golden wattle	*Acacia longifolia*	12	Non-native, planted
Chinese elm	*Ulmus parvifolia*	7	Non-native, planted

Common Name	Scientific Name	Tally (2021)	Origin
Toyon	*Heteromeles arbutifolia*	135	Native, planted, on-site reproduction
Various fruit	*Not specified*	6	Non-native, planted
Other ornamental	*Not specified*	4	Non-native, planted
Blue elderberry	*Sambucus nigra ssp. caerulea*	52	Native, planted, on-site reproduction
Total:		**1,500**	

2.3.2 Vegetation

The majority of the Project Site has been historically cleared for various oil and gas industrial or municipal purposes or was planted with fruit/nut trees and landscaping trees (Buffer Zone) or nursery stock (Former Nursery Area), and thus is highly disturbed from a biological perspective. Vegetation, where present, primarily consists of stands of non-native trees and non-native grasses or ruderal fields, with exception to several native plant restoration areas within Drainage Area No. 4, the southern end of the Former Marketing Terminal Area, the entrance to the Pier Parking Lot, and at the Former Sandblast Area. Native scrub and non-native iceplant mats are also present along the bluffs to the east and west of the Pier Parking Lot.

The following paragraphs describe on-site vegetation, classify each vegetation type to the extent feasible according to the California Native Plant Society (CNPS) A Manual of California Vegetation Online (MCV Online, source: https://vegetation.cnps.org), and identify plant species of which they are composed. Table 3 provides the acreage and locations of each vegetation type throughout the Project Site. Where labeled with an asterisk in the State/Global Rarity Rank column and/or described as “planted” within the last 15 years, the MCV Online classification provided is considered the closest approximation to the natural vegetation community it represents, based on dominant species present. Figures 2a through 2c provide a vegetation map of the Project Site.

Table 3. Vegetation of the Project Site

General Category/Map Code	MCV Online Classification	State/Global Rarity Ranks	Onsite Acreage	Present at:
Tree Windrows / EUC	*Eucalyptus* spp. – *Ailanthus altissima* – *Robinia pseudoacacia* Woodland Semi-Natural Alliance (Eucalyptus – tree of heaven – black locust groves)	Unranked	7.6	Buffer Zone, Former Nursery Area, Shop & Maintenance Area, MSRC Lease Area, Peninsula Area, Drainage Area No. 4, Former Marketing Terminal Area, Chevron Pipeline Area, and Main Plant Area.
Tree Windrows / TAM	*Tamarix* spp. Shrubland Semi-Natural Alliance (Tamarisk thickets)	Unranked	0.6	Main Plant Area, and MSRC Lease Area.

Table 3. (Continued)

General Category/Map Code	MCV Online Classification	State/Global Rarity Ranks	Onsite Acreage	Present at:
Arroyo Willow Thicket / WIL	*Salix lasiolepis* Shrubland Alliance (Arroyo willow thickets)	S4/G4	0.4	Drainage Area No. 4, Chevron Pipeline Area, Pipeline Bluff Crossing Area, and Former Sandblast Area.
Mixed Woodland / OAK	*Quercus agrifolia* Forest & Woodland Alliance (Coast live oak woodland and forest)	S4/G5	5.8	Buffer Zone, Shop & Maintenance Area, and Drainage Area No. 4. Several emergent western sycamores are present in an upland area within the Buffer Zone.
Coastal Scrub / CS	*Artemisia californica* – (*Salvia leucophylla*) Shrubland Alliance (California sagebrush – [purple sage] scrub)	S5/G5	0.8	Buffer Zone, Drainage Area No. 4, and Former Marketing Terminal Area. Several emergent (planted) blue elderberry trees are present.
Coastal Scrub / SB	*Atriplex lentiformis* Shrubland Alliance (Quailbush scrub)	S4/G4	1.8	Pipeline Bluff Crossing Area, Pier Parking Lot, and Former Sandblast Area.
Coastal Scrub / CB	*Baccharis pilularis* Shrubland Alliance (Coyote brush scrub)	S5/G5	2.1	Pier Parking Lot, and Former Sandblast Area.
Coastal Scrub / MF	*Baccharis salicifolia* Shrubland Alliance (Mulefat thickets)	S4/G4*	0.06	Planted in Drainage Area No. 4.
Coastal Scrub / GB	*Isocoma menziesii* Shrubland Alliance (Menzies's golden bush scrub)	S3/G3	0.4	Pier Parking Lot bluff edge.
Chaparral / TOY	*Heteromeles arbutifolia* – *Artemisia californica* Association (*37.911.02*)	S4/G5*	0.9	Toyon planted in Drainage Area No. 4, with California sagebrush and coyote brush as co-dominants.
Chaparral / LB	*Rhus integrifolia* Shrubland Alliance (Lemonade berry scrub)	S3/G3*	0.7	Planted along Pier Parking Lot, and growing naturally along the Former Sandblast Area bluff edge.
Iceplant Mat / IP	*Mesembryanthemum* spp. - *Carpobrotus* spp. Herbaceous Semi-Natural Alliance (Ice plant mats)	Unranked	1.6	Pipeline Bluff Crossing Area, and Pier Parking Lot, dominated by *Carpobrotus edulis*.
Annual Grassland / AG	*Brassica nigra* – *Centaurea (solstitialis, melitensis*) Herbaceous Semi- Natural Alliance (Upland mustards or star-thistle fields)	Unranked	6.6	Former Nursery Area, Former Marketing Terminal Area, and Chevron Pipeline Area.

Table 3. (Continued)

General Category	MCV Online Classification	State/Global Rarity Ranks	Onsite Acreage	Present at:
Annual Grassland / AG	*Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance (Wild oats and annual brome grasslands)	Unranked	2.5	Former Nursery Area, Former Marketing Terminal Area, and Chevron Pipeline Area.
Developed Land / DEV	Not specified (mostly bare ground or patchy ruderal vegetation)	Unranked	23.9	Main Plant Area, Shop and Maintenance Area, and Chevron Pipeline Area.

State and global rarity ranks for the vegetation types:
S3: Vulnerable in the state
S4: Apparently Secure - Uncommon but not rare in the state
S5: Secure - Common, widespread, and abundant in the state
G3: Vulnerable - At moderate risk of extinction
G4: Apparently Secure - Uncommon but not rare
G5: Secure - Common; widespread and abundant

Tree Windrows MCV Online: *Eucalyptus spp. – Ailanthus altissima – Robinia pseudoacacia* Woodland Semi-Natural Alliance (Eucalyptus – tree of heaven – black locust groves) (No State/Global Rarity Rank); *Tamarix spp.* Shrubland Semi-Natural Alliance (Tamarisk thickets) (No State/Global Rarity Rank). Tree windrows comprised mostly of blue gum (*Eucalyptus globulus*), and to a lesser degree of athel tamarisk (*Tamarix aphylla*), occur between the Buffer Zone and Former Marketing Terminal Area, along both sides of Dump Road, on both sides of the MSRC Lease Area, and along the east edge of the entire Project Site from the Peninsula Area, south along the Main Plant Area.

The eastern edge of the Former Marketing Terminal Area also supports a row of Chinese elm (*Ulmus parvifolia*) trees. Some of the more densely planted stands provide cover, roosting and nesting habitat for a number of bird species (e.g., red-tailed hawk, Anna's hummingbird, and yellow-rumped warbler), and historically, the windrow between the Buffer Zone and Former Marketing Terminal Area has supported roosting Monarch butterflies, particularly on the Buffer Zone (west) side of the windrow. Tree windrows were first introduced at the Project Site as windbreaks for agricultural fields, and later to screen oil and gas facilities.

Mixed Woodland MCV Online: *Quercus agrifolia* Forest & Woodland Alliance (Coast live oak woodland and forest) (S4/G5). Trees and intervening areas of non-native grassland occur within the Buffer Zone, form a woodland community. The trees include coast live oak (*Quercus agrifolia*) and western sycamore (*Platanus racemosa*), but are also intermixed with Monterey pine, Monterey cypress (*Hesperocyparis macrocarpa*) trees, or abut Eucalyptus groves or tree windrows within the Buffer Zone. Open areas between tree clusters support perennial rye grass (*Festuca perennis*), slender wild oats (*Avena barbata*), and hare barley (*Hordeum murinum*). The trees provide cover and roosting habitat for a number of bird species and historically for Monarch butterflies. Grass areas provide foraging habitat for small reptiles and mammals, as well as birds. This area was planted to provide a buffer between the Former

Marketing Terminal and the Concha Loma residential neighborhood to the west subsequent to row crop and orchard tree farming in the early to mid-20th century based on historical aerial imagery interpretation.

Smaller, more isolated patches of mixed woodland trees occur along the margins of the Shop and Maintenance Area, supporting coast live oak, Oregon ash and non-native dawn redwood trees abutting the tamarisk and eucalyptus windrows. Stands of non-native trees including these species in addition to London plane (*Platanus x acerifolia*) are labeled as Ornamental on the attached vegetation map.

Coastal Scrub and Chaparral MCV Online: *Artemisia californica – (Salvia leucophylla)* Shrubland Alliance (California sagebrush – [purple sage] scrub) (S5/G5); *Atriplex lentiformis* Shrubland Alliance (Quailbush scrub) (S4/G4); *Baccharis pilularis* Shrubland Alliance (Coyote brush scrub) (S5/G5); *Baccharis salicifolia* Shrubland Alliance (Mulefat thickets) (S4/G4); *Isocoma menziesii* Shrubland Alliance (Menzies's golden bush scrub) (S3/G3); *Heteromeles arbutifolia – Artemisia californica* Association (Toyon – California sagebrush scrub or chaparral) (S4G5); *Rhus integrifolia* Shrubland Alliance (Lemonade berry scrub) (S3/G3). Portions of the southern end of the Project Site support historically or recently restored areas of coastal scrub and chaparral communities based on aerial imagery dating back to the early to mid-20th century, including at Drainage Area No. 4, the southernmost portion of the Former Marketing Terminal Area, the entrance to the Pier Parking Lot, Former Sandblast Area, and Pipeline Bluffs Crossing Area.

Dominant or co-dominant species in these areas include coyote brush (*Baccharis pilularis*), bush sunflower (*Encelia californica*), purple sage (*Salvia leucophylla*), toyon (*Heteromeles arbutifolia*), quailbush (*Atriplex lentiformis*), California sagebrush (*Artemisia californica*), Menzies's golden bush (*Isocoma menziesii*), blue elderberry (*Sambucus nigra ssp. caerulea*) and lemonadeberry (*Rhus integrifolia*).

Notably, in the Pipeline Bluffs Crossing Area are monotypic and mixed stands of quailbush scrub, mixed stands of coyote brush scrub and Menzies's golden bush scrub, all of which have undergone some level of disturbance, including recolonization subsequent to former row crops extending to the bluff edge and the former presence of a refuse dump. In Drainage Area No. 4 are a planted mulefat thicket, toyon chaparral, and naturally colonized California sagebrush scrub. The southern portion of the Former Marketing Terminal Area supports a mature thicket of blue elderberry, lemonadeberry and California sagebrush. These shrub-dominated vegetation types provide cover, roosting and nesting habitat for a number of bird, reptile and small mammal species.

Iceplant Mat MCV Online: *Mesembryanthemum spp. - Carpobrotus spp.* Herbaceous Semi-Natural Alliance (Ice plant mats) (No State/Global Rarity Rank). The Pipeline Bluffs Crossing Area supports a large mat of non-native iceplant (*Carpobrotus edulis* and *Mesembryanthemum* sp.), which, where present, has frequently become a naturalized and typically dominant component of bluff scrub communities.

Annual Grasslands and Ruderal Vegetation **MCV Online: *Brassica nigra – Centaurea (solstitialis, melitensis)* Herbaceous Semi- Natural Alliance (Upland mustards or star-thistle fields) (No State/Global Rarity Rank); *Avena spp. – Bromus spp.* Herbaceous Semi-Natural Alliance (Wild oats and annual brome grasslands) (No State/Global Rarity Rank)**. The Main Plant Area, Shop and Maintenance Area, and Chevron Pipeline Area, which are all formerly graded, bermed, or degraded asphalt, supports patches of predominantly non-native herbaceous species such as summer mustard (*Hirschfeldia incana*), red brome (*Bromus madritensis ssp. rubens*), ripgut brome (*Bromus diandrus*), red-stem filaree (*Erodium cicutarium*), onionweed (*Asphodelus fistulosis*), bristly ox-tongue (*Helminthotheca echioides*), cheeseweed (*Malva parviflora*), perennial ryegrass, freeway iceplant, Terracina spurge (*Euphorbia terracina*), smilo grass (*Stipa mileacea*), bur-clover (*Medicago polymorpha*) and English plantain (*Plantago lanceolata*). Native species were also observed throughout these areas, but in lesser concentration, including horseweed (*Erigeron canadensis*), telegraph weed (*Heterotheca grandiflora*), coyote brush, and small-flowered evening primrose (*Camissoniopsis micrantha*).

The Former Nursery Area supports an assemblage of weedy non-native species typical of repeated disturbance. Dominant species originally observed in 2004 included cheeseweed, wild radish (*Raphanus sativus*) and summer mustard. The Former Nursery Area was hydroseeded with a native herbaceous seed mix following removal of pesticide-affected soils in 2012 but has since become mostly recolonized with its former non-native dominants, in addition to the emergence of succulent lupine (*Lupinus succulentus*) and California poppy (*Eschscholzia californica*) included in the seed mix. Similar conditions supporting non-native annual grasses and other herbaceous cover (e.g., English plantain and Terracina spurge, but little or no native species) are present in the Former Marketing Terminal Area immediately south of its developed portion.

Arroyo Willow Thicket **MCV Online: *Salix lasiolepis* Shrubland Alliance (Arroyo willow thickets) (S4G4)**. The Project Site supports three (3) small patches of arroyo willow thicket with arroyo willow (*Salix lasiolepis*) as the dominant tree species in the overstory. Understory vegetation typically includes western ragweed (*Ambrosia psilostachya*), tall flatsedge (*Cyperus eragrostis*, in wetter years), bristly ox-tongue (*Picris echioides*), and/or curly dock (*Rumex crispus*) or is bare of understory vegetation due to a thick, closed canopy. Wetland plant species found within this vegetation type during the Wetland Delineation (separate report) include English plantain (*Plantago lanceolata*), western sycamore, arroyo willow and mulefat (*Baccharis salicifolia*).

This vegetation type provides cover, roosting and nesting habitat for a number of bird, reptile and small mammal species, including at least one (1) big-eared woodrat nest at the Former Sandblast Area.

2.3.3 Environmentally Sensitive Habitat Areas (ESHA)

Sections 30230, 30231, and 30233 of the Coastal Act of 1976 require protection of marine resources and estuaries. The City's General Plan/Local Coastal Land Use Plan identifies the following areas within or adjacent to the Project site as ESHA:

- Monarch butterfly roost at the Project site
- Buffer Zone
- Harbor seal rookery near the Casitas Pier
- Onshore areas seaward of the Union Pacific Railroad tracks (Carpinteria Bluffs)
- Intertidal and nearshore areas (including rocky reefs and kelp beds) near the Project site, extending up to about 3,000 feet offshore

Policies OSC-1a through OSC-1d of the City's General Plan/Local Coastal Land Use Plan provide protection for ESHA within the City (also see Section 2.2).

2.3.4 Site Flora

A botanical inventory was prepared in May 2011 in support of soil remediation activities conducted within the Buffer Zone, Drainage Area No. 4, Former Nursery Area, Former Sandblast Area, and Railroad Ditch Area. A botanical survey of the entire Project site was conducted in April 2021 to update the inventory and include all potential impact areas. A total of 163 vascular plant species were observed, including 51 (31 percent) native species and 112 (69 percent) non-native or introduced species. Of the 112 non-native species identified, 54 are considered invasive by the California Invasive Plant Council, including five species rated as highly invasive, 27 species rated as moderately invasive, and 22 species rated as limited invasiveness.

2.3.5 Special-Status Plant Species

Several special-status plant species have been identified in the project area by a literature search conducted by Padre and review of the California Department of Fish and Wildlife Natural Diversity Data Base (CNDDB, 2021) for the Carpinteria, Santa Barbara, White Ledge Peak, and Pitas Point 7.5-minute USGS quadrangle maps. Table 4 below describes these plants, their habitat associations, listing status, and nearest known location. Special-status plant species observed or reported at the Project Site include southwestern spiny rush (*Juncus acutus ssp. leopoldii*, a CNPS rare plant rank 4 species) and yerba mansa (*Anemopsis californica*, a regionally rare species within Santa Barbara County). Monterey cypress (*Hesperocyparis macrocarpa*, a CNPS rare plant rank 1.2 species where naturally occurring) is also present in multiple locations at the Project Site, but these individuals are planted or are seedling and sapling recruits, and are not considered rare or endangered due to their introduced origin. Figure 3 provides the approximate location of special-status plant species as reported by the California Natural Diversity Data Base.

Table 4. Special-Status Plant Species of the Carpinteria Area

Common Name (*Scientific Name*)	Habitat Associations	Status	Nearest Known Location
Coulter's saltbush (*Atriplex coulteri*)	Coastal bluff scrub, coastal dunes, coastal scrub, ocean bluffs, ridgetops, as well as alkaline areas	CRPR 1B.2	Carpinteria, along ocean bluff (CNDDB, 2021);
Nuttall's scrub oak (*Quercus dumosa*)	Closed-cone coniferous forest, chaparral, coastal scrub.	CRPR 1B.1	Toro and Santa Monica Canyons, northwest of Carpinteria (CNDDB, 2021);
Late-flowered Mariposa lily (*Calochortus weedii var vestus*)	Chaparral, dry, open coastal woodland.	CRPR 1B.2	Franklin Canyon, north of Carpinteria (CNDDB, 2021);
Sonoran maiden fern (*Thelypteris puberula var sonorensis*)	Meadows and seeps, along streams	CRPR 2.2	Romero Canyon, Santa Ynez Mountains (CNDDB, 2021);
Southern tarplant (*Centromadia parryi ssp australis*)	Marshes and swamps, valley and foothill grassland, often in disturbed sites near the coast.	CRPR 1B.1	Alongside rail lines, Pitas Point Quad (CNDDB, 2021);
Cliff malacothrix (*Malacothrix saxitilis ssp. saxitilis*)	Coastal bluff scrub, coastal scrub	CRPR 4	Carpinteria Bluffs (Padre, 2004)
Woolly sea-blite (*Suaeda taxifolia*)	Margins of salt marshes	CRPR 4	Carpinteria Bluffs (Padre, 2004), Berms in the Carpinteria Salt Marsh (SBCFCWCD, 2003);
Southern California black walnut (*Juglans californica*)	Chaparral, cismontane woodland, coastal scrub/alluvial	CRPR 4	Carpinteria Creek (Padre, 2005)
Salt marsh bird's beak (*Cordylanthus maritimus ssp. maritimus*)	High marsh habitats with sandy substrate	FE, SE, CRPR 1B.2	Carpinteria Salt Marsh (Padre, 2020a);
Coulter's goldfields (*Lasthenia glabrata*)	Margins of salt pans	CRPR 1B.1	Carpinteria Salt Marsh Nature Park (SBCFCWCD, 2003);
Estuary sea-blite (*Suaeda esteroa*)	Coastal salt marshes	CRPR 1B.2	Presumed extirpated from Carpinteria Salt Marsh (SBCFCWCD, 2003).
Red sand verbena (*Abronia maritima*)	Sand dune habitats	CRPR 4	Re-established in sand dunes at Carpinteria Salt Marsh Nature Park (Padre, 2004)
Southwestern spiny rush (*Juncus acutus ssp. leopoldii*)	Fringes or transition habitats in salt or brackish marshes	CRPR 4	Onsite: Pipeline Bluffs Crossing Area (Padre, 2021)
Yerba mansa (*Anemopsis californica*)	Transition habitats along edges of marshes	Regionally Rare	Onsite: Pipeline Bluffs Crossing Area (Padre, 2021)
Watson's saltbush (*Atriplex watsonii*)	Transition habitats along edges of marshes	Regionally Rare	Carpinteria Salt Marsh (SBCFCWCD, 2003);
Alkali barley (*Hordeum depressum*)	Salt marsh transition and grassland habitats	Regionally Rare	Carpinteria Salt Marsh (SBCFCWCD, 2003);

Table 4. (Continued)

Common Name (*Scientific Name*)	Habitat Associations	Status	Nearest Known Location
Prostrate hutchinsia (*Hutchinsia procumbens*)	High salt marsh habitats	Regionally Rare	Carpinteria Salt Marsh (SBCFCWCD, 2003);
Basket rush (*Juncus textilis*)	Brackish marsh habitats	Regionally Rare	Drainage ditches along Sand Point Road, and successfully established at Carpinteria Salt Marsh Nature Park (SBCFCWCD, 2003);
Seaside arrowgrass (*Triglochin coccina*)	High salt marsh habitats	Regionally Rare	Carpinteria Salt Marsh (SBCFCWCD, 2003);
Ventura marsh milk-vetch (*Astragalus pycnostachys var. lanosissimus*)	Coastal salt marshes, rarely near seeps on sandy bluffs	FE, SE, CRPR 1B.1	Introduced to the Carpinteria Salt Marsh (Meyer, 2012)
Davidson's saltscale (*Atriplex serenana var. davidsonii*)	Coastal bluff, coastal scrub	CRPR 1B.2	Hendry's Beach (aka, Arroyo Burro Beach) (CNDDB, 2021)
Santa Barbara morning glory (*Calystegia sepium ssp. binghamiae*)	Coastal marsh	CRPR 1A	Burton Mound, Santa Barbara. Possibly extirpated (CNDDB, 2021)
Umbrella larkspur (*Delphinium umbraculorum*)	Cismontane woodland, mesic sites, 400 to 1600 m (1,300 to 5,300 ft) elevation	CRPR 1B.3	Escondido Canyon, Los Padres National Forest (CNDDB, 2021)
Ojai fritillary (*Fritillaria ojaiensis*)	Broadleaf forest, chaparral, lower montane coniferous forest	CRPR 1B.2	Santa Ynez Mountains, west of Ojai (CNDDB, 2021)
Mesa horkelia (*Horkelia cuneata ssp. puberula*)	Chaparral, cismontane woodland, coastal scrub, 70 to 810 m (230 to 2,700 ft)	CRPR 1B.1	Cold Spring Trail, near Santa Barbara (CNDDB, 2021)
Santa Barbara honeysuckle (*Lonicera subspicata var. subspicata*)	Chaparral, cismontane woodland, coastal scrub, 35 to 1,000 m (110 to 3,300 ft)	CRPR 1B.2	San Roque Canyon, Los Padres National Forest (CNDDB, 2021)
Gambel's water cress (*Nasturtium gambelii*)	Freshwater and brackish marshes at the edges or lakes or streams	FE, ST, CRPR 1B.1	Historically mapped in vicinity of Santa Barbara, but extirpated (CNDDB, 2021)
Peninsular nolina (*Nolina cismontane*)	Chaparral and coastal scrub, 140 to 1,275 m (460 to 4,200 ft)	CRPR 1B.2	Coyote Creek in vicinity of Lake Casitas (CNDDB, 2021)
Southern jewel-flower (*Streptanthus campestris*)	Chaparral, lower montane coniferous forest, pinyon-juniper forest	CRPR 1B.3	Divide Peak, Santa Ynez Mountains (CNDDB, 2021)
Santa Ynez false lupine (*Thermopsis macrophylla*)	Chaparral	CRPR 1B.3	Camino Cielo Road & La Cumbre Lookout Road, Santa Ynez Mountains (CNDDB, 2021)

Table 4. (Continued)

Common Name (*Scientific Name*)	Habitat Associations	Status	Nearest Known Location
Monterey cypress (*Hesperocyparis macrocarpa*)	Headlands and sheltered areas near the coast	CRPR 1B.2	Onsite (planted), but outside of its natural geographic range.

Status codes: CNPS Rare Plant Rank (CRPR) 1A Presumed extinct in California
CRPR 1B Plants rare, threatened or endangered in California
CRPR 2 Plants rare, threatened or endangered in California, more common elsewhere
CRPR 4 Plants of limited distribution
.1 - Seriously endangered in California.
.2 – Fairly endangered in California.
.3 – Not very endangered in California.
FE Federal Endangered
SE State Endangered
ST State Threatened
Regionally Rare: According to the Santa Barbara Botanic Garden

2.3.6 Wildlife

A list of wildlife species observed at the Project Site is provided in Attachment B. A majority of these wildlife sightings occurred in the Buffer Zone, with much lower biodiversity observed in the more developed portions of the Project Site.

Amphibians and Reptiles. Baja California tree frogs were observed in the drainage within the Buffer Zone in May 1998 (Padre, 2002a), were heard calling from the Project Site during the November 2004 field survey, and again in February 2012. Western toad was also observed in the Buffer Zone in 2012. Both species are expected to currently occur at the Project Site, particularly in lesser developed areas.

Western fence lizard and side-blotched lizard were commonly observed throughout the Project Site, typically using gopher and ground squirrel buffers as refugia. Other reptiles less commonly observed within the Buffer Zone included gopher snake, alligator lizard, and ringneck snake as recently as winter 2021. California king snake may also be expected to occur at the Project Site.

Birds. Tree clusters at the Project Site are known to be areas of high avian diversity. Grasslands in the Project Site are used for foraging and hunting by several species as well. Birds observed during numerous surveys from 1998 to 2021 by Padre collectively included a total of 58 species. Bird activity primarily occurs in the trees or areas of scrubby vegetation. Birds commonly observed included (in order of decreasing abundance) yellow-rumped warbler, bushtit, Anna's hummingbird, mourning dove, northern flicker, black phoebe, Hutton's vireo, northern mockingbird, American crow, and red-tailed hawk. Evidence of roosting by great horned owl was observed within the Buffer Zone in 1998 (ADL, 1999), owl pellets were found onsite in 2012, and a great horned owl fledgling was observed in the Buffer Zone in 2019 (Padre pers. obs., 2019). Cooper's hawk and red-shouldered hawk have also been commonly

observed roosting and foraging in the Buffer Zone, but no nests have been recorded at the Project Site.

Observations of nesting activity by passerines have included Anna's hummingbird, California towhee, cliff swallow, and house finch, some of which were on manufactured structures or equipment, or in trees near those items. Hawks are commonly observed roosting in large trees within the Buffer Zone and adjacent portions of the Former Nursery Area. At least three (3) raptor nests of varying sizes (one of which was active as recently as 2021) were observed at the Project Site in various years. A pair of mating red-tailed hawks was observed in the eucalyptus treetop above the MSRC Lease Area in April 2021.

Other species known from the area (e.g., Carpinteria Bluffs) include white-tailed kite, sharp-shinned hawk, barn owl, turkey vulture, and loggerhead shrike, which may forage at the Project Site.

Mammals. Ground squirrel and pocket gopher burrows were commonly observed throughout the Project Site. Raccoon, coyote, and domestic dog tracks have been observed within the Buffer Zone during numerous field surveys. An individual coyote was also directly observed in November 2020 within the Buffer Zone. Red fox has been commonly observed in the Buffer Zone and Chevron Pipeline Area in numerous years. Domestic cat is also frequently observed in the Buffer Zone, returning to homes along Arbol Verde Drive. A single, big-eared woodrat nest is present in the arroyo willow thicket at the bluff's edge within the Former Sandblast Area. Other mammals expected to occur at the Project Site include black rat, deer mouse, and house mouse.

Invertebrates. Monarch butterfly (*Danaus plexippus*) is the only insect species in the world that is known to exhibit long-distance, seasonal migrations. These butterflies maintain a summer range across North America. Milkweeds (*Asclepias* spp.) serve at their main source of food, and are where females lay their eggs. Every fall, the Monarch butterflies fly west and south to over-wintering sites in coastal California and central Mexico.

Groves of eucalyptus and Monterey pine serve as the predominant Monarch butterfly over-wintering sites in California. Other trees including coast live oak, sycamore, and Monterey cypress also serve as over-wintering habitat. A protective microclimate is typically provided by densely clustered trees and understory vegetation (i.e., shrubs, grasses) at over-wintering roost sites selected by Monarch butterflies. These sites typically provide a degree of protection from wind and storms, and exhibit more stable temperature, wind velocity, humidity, and sunlight intensity compared to adjacent areas. Monarch butterflies are known to move around selected groves of trees depending on variations in the microclimatic conditions.

The same over-wintering sites, and even the same trees, are often used year after year by Monarch butterflies. However, wide variations in the use of over-wintering sites do occur. Some sites may be used only periodically, while others are used every or almost every year. The number of Monarch butterflies using a given roost site can fluctuate dramatically on a day-to-day and year-to-year basis. Also, the duration for which a particular site is used can vary. Autumnal roost sites are used only temporarily in the fall by relatively small numbers of

butterflies, while permanent roost sites are used for the entire winter by up to tens of thousands of individuals. Autumnal sites are typically abandoned for permanent roost sites in the beginning of the winter. Both types of roost sites are important to Monarch butterflies. However, permanent roost sites are more important, as they sustain the butterfly populations by providing food and protection from the weather through the winter. It is important to note that a given roosting site may serve as an autumnal site one year, and a permanent site in another, and vice versa.

Monarch butterflies are regularly observed at the Project Site during the fall. They also occur in the winter, but may be a result of dispersion from the large Carpinteria Creek overwintering site. A cluster of approximately 50 Monarch butterflies were observed in the blue gum windrow on the east side of Dump Road on October 25, 1990. Many Monarch butterflies were observed flying over the Project Site, but no clusters were found on January 6, 1991 (Calvert, 1991). Clusters of Monarchs totaling over 2,000 individuals were observed in the Buffer Zone on November 8, 1998 (ADL, 1999). Approximately 60 Monarchs were observed in the Buffer Zone in February 1999 (Meade, 1999). Padre biologists observed two clusters totaling about 100 Monarchs on a blue gum tree in the Buffer Zone, with another 30 to 50 flying within the Buffer Zone on November 15, 2004. At that time, this site was considered an autumnal roost, possibly a congregation site associated with the overwintering site at Carpinteria Creek.

In fall 2011, Monarch butterflies were observed patrolling the Buffer Zone and began aggregating in October 2011. By January 2012 Monarch butterflies were observed aggregating in at least two trees (blue gum and pine) in excess of approximately 5,000 individuals (by visual estimation). Observations were made of the aggregations moving north (further into the Buffer Zone from its more exposed, southern end) before beginning their dispersal (and potential mating activity) in February 2012 (Padre, 2012). Conversely, in winter 2020/2021, observations were limited to very few patrolling Monarchs and no aggregations at the Buffer Zone or other locations within the Project Site (Padre, 2020 and Padre, 2021a), which may be consistent with a long-term decline in the population abundance at North American overwintering sites.

These observations are generally consistent with the Xerces Society Western Monarch Thanksgiving Count at Site 2800 (Oil & Gas Buffer Zone, Carpinteria, Xerces Society, 2020), which observed as many as 5,990 Monarchs in 2016, and steadily declined to observe only three (3) Monarchs in 2020. This decline has led to the petition of the U.S. Fish and Wildlife Service (USFWS) to list the monarch butterfly for protection under the Endangered Species Act of 1973, as amended, but although warranted for listing, is currently precluded by higher priority listing actions (USFWS, 2020a).

In support of the petition, the U.S. Fish and Wildlife Service (USFWS) conducted a species status assessment (SSA), which analyzed numerous expert predictions of increases or decreases in impacts to western monarchs over the next 20 years (USFWS, 2020b). The SSA determined that predictions of *non-habitat-mediated* climate change effects range from a 6% decrease in impacts due to increases in temperatures potentially improving reproduction, or conversely, to a 50% increase in impacts due to more severe increases in temperatures and

precipitation events hindering reproduction and increasing mortality. The SSA also determined that predictions of *habitat-mediated* climate change effects range from an 8% decrease in impacts due to the potential for small increases in milkweed availability in some portions of the range, or conversely to a 65% increase in impacts due to greater losses of monarch habitat from increased temperatures and drought (USFWS, 2020b). From a local perspective, these effects are not markedly apparent due to the mild, coastally influenced weather of the region, and relatively intact condition of vegetation within the Buffer Zone in recent documented history. Thus, the disappearance of aggregating Monarchs at the Buffer Zone may potentially be caused by the effects described above at other sections of their migratory route.

2.3.7 Special-Status Wildlife

Special-status wildlife species listed by CDFW and/or USFWS have the potential to occur in the vicinity of the Project Site. Query or review of the CNDDB (2021) for the Carpinteria, Santa Barbara, White Ledge Peak, and Pitas Point 7.5-minute USGS quadrangle maps, documentation of past onsite biological survey and monitoring activities, sight records from other environmental documents, and range maps including Zeiner et al. (1988, 1990a, 1990b) and Lehman (2019) were used to determine the potential presence of these species. Table 5 lists special-status wildlife species that are known to occur or have the potential to occur at the Project Site. Figure 3 provides the approximate location of special-status wildlife species as reported by the California Natural Diversity Data Base.

Table 5. Special-Status Wildlife Species of the Carpinteria/Montecito Area

Common Name (Scientific Name)	Status	Nearest Known Location
Monarch butterfly (*Danaus plexippus*)	SA, PD	On-site (fall and late winter). Buffer Zone supports a historical aggregation site, with as many as 5,990 individuals observed in 2016, but only 3 individuals observed in 2020 (Xerces Society, 2020)
Sandy Beach tiger beetle (*Cicindela hirticollis gravida*)	SA	Carpinteria area (historic, now extirpated, CNDDB, 2021)
Tidewater goby (*Eucyclogobius newberryi*)	FE, SSC	Carpinteria Creek, 0.2 miles to the west (Padre, 2016)
Southern steelhead (*Oncorhynchus mykiss*)	FE, SSC	Carpinteria Creek below State Route 192, 0.2 miles to the northwest (Stoecker et al., 2002)
California newt (*Taricha torosa*)	SSC	Santa Monica Creek, 2.7 miles to the north-northwest (Z. Abbey, personal observation, 2020)
California red-legged frog (*Rana draytonii*)	FT, SSC	Santa Monica Creek, 2.7 miles to the north-northwest (Z. Abbey, personal observation, 2020)
Southwestern pond turtle (*Actinemys pallida*)	SSC	Lower Carpinteria Creek, 0.2 miles to the west (Padre, 2016)
Two-striped garter snake (*Thamnophis hammondii*)	SSC	Carpinteria Creek, 0.3 miles to the north (Padre, 2016)
Coast horned lizard (*Phrynosoma coronatum* ssp. *frontale*)	SSC	Known from the region

Table 5. (Continued)

Common Name (Scientific Name)	Status	Nearest Known Location
Light-footed clapper rail (*Rallus longirostris levipes*)	FE, SE	Carpinteria Salt Marsh (historic, now extirpated)
Belding's savanna sparrow *(Passerculus sandwichensis beldingi)*	SE	Carpinteria Salt Marsh, 1.2 miles to the northwest (Padre, 2020a)
American peregrine falcon (*Falco peregrinus anatum*)	FP (nesting)	Uncommon fall/winter visitor in the region, (Lehman, 2019), reported from the Carpinteria Salt Marsh
Western snowy plover (*Charadrius alexandrinas*)	FT, SSC	Winters on the beaches in the Carpinteria area (Lehman, 2019). Observed at Carpinteria State Beach in 2021 (eBird.org). Nearest breeding site is near the Santa Clara River mouth, approximately 17.7 miles to the southeast.
California brown pelican (*Pelecanus occidentalis californicus*)	SA, D	Carpinteria Salt Marsh (SBCFCWCD, 2003). Observed overhead (Padre, 2020)
California least tern (*Sterna antillarum browni*)	FE, SE	Transient, post-breeding visitor in the region (Lehman, 2019), nearest breeding at McGrath State Beach.
Northern harrier (*Circus cyaneus*)	SSC	Uncommon transient and winter visitor in the region, (Lehman, 2019), reported from the Carpinteria Salt Marsh
American bittern (*Botaurus lentiginosus*)	SA	Rare to very rare transient and winter visitor in the region (Lehman, 2019) observed at the Carpinteria Salt Marsh (SBCFCWCD, 2003)
Long-billed curlew (*Numenius americanus*)	WL	Uncommon fall migrant in the region, (Lehman, 2019), Observed at harbor seal haul-out near the Project site in 2021 (eBird.org).
Osprey (*Pandion haliaetus*)	WL	Rare fall/winter transient in the region (Lehman, 2019), Observed from Tar Pits Park in 2021 (eBird.org).
Merlin (*Falco columbarius*)	WL	Very uncommon winter visitor in the region, (Lehman, 2019), reported from the Carpinteria Salt Marsh
Yellow warbler (*Dendroica petechia*)	SSC (nesting)	Toro Canyon (SAIC, 2000), and Carpinteria Creek (Padre, 2002b); On-site (foraging only in Buffer Zone; Padre, 2012)
Yellow-breasted chat (*Icteria virens*)	SSC (nesting)	Toro Canyon (SAIC, 2000)
White-tailed kite (*Elanus caerulus*)	FP (nesting)	Carpinteria Bluffs (Padre, 2004; eBird, 2021); Carpinteria Salt Marsh (SBCFCWCD, 2003)
Loggerhead shrike *(Lanius ludovicianus)*	SSC (nesting)	Rare and irregular breeder in the Project area (Lehman, 2019). Observed at Carpinteria Bluffs in 2021 (eBird.org).
Cooper's hawk *(Accipiter cooperi*)	WL (nesting)	Carpinteria Creek (Padre, 2002b); On-site (foraging only in Buffer Zone, Padre obs. 2021)
Arroyo toad (*Anaxyrus californicus*)	FE, SSC	Santa Ynez River above Gibralter Reservoir (CNDDB, 2021)
Globose dune beetle (*Coelus globosus*)	SA	Carpinteria sand dunes (historic [1934], likely extirpated)
San Diego desert woodrat (*Neotoma lepida intermedia*)	SSC	North side of SPRR-ROW & US 101, Pitas Point (CNDDB, 2021)

Table 5. (Continued)

Common Name (Scientific Name)	Status	Nearest Known Location
Townsend's big-eared bat (*Corynorhinus townsendi*)	SSC, WBWG-H	Carpinteria Salt Marsh (historic, 1941) (CNDDB, 2021)
Yuma myotis (*Myotis yumanensis*)	WBWG-LM	Night roost under the Carpinteria Avenue bridge, 0.2 miles to the north (Padre, 2016)
Big free-tailed bat (*Nyctinomops macrotis*)	SSC	Santa Barbara (CNDDB, 2021)
Foothill yellow-legged frog (*Rana boylii*)	SE	Santa Ynez River at Juncal Campground (CNDDB, 2021)
Bank swallow (*Riparia riparia*)	ST	Hendry's Beach (aka Arroyo Burro Beach), Santa Barbara (CNDDB, 2021)
Least Bell's vireo (*Vireo bellii pusillus*)	FE, SE	Santa Ynez River at Juncal Campground (CNDDB, 2021)
Northern California legless lizard (*Anniella pulchra*)	SSC	Carpinteria State Beach (CNDDB, 2021)

Status codes:

FSC	Federal Species of Concern	FE	Federal Endangered
FT	Federal Threatened	SSC	California Species of Special Concern
SA	Special Animal (CDFW)	SE	State Endangered
PD	Petition for ESA listing deferred (USFWS)	ST	State Threatened
D	Delisted from the ESA (USFWS)	WL	Watch List (CDFW)
FP	Fully Protected (CDFW)	WBWG-H	Western Bat Working Group, high concern
		WBWG-LM	Western Bat Working Group, low-medium concern

Monarch Butterfly. See discussion under Wildlife.

Sandy Beach Tiger Beetle. This species is recorded in the CNDDB as having been identified in back-dune areas near Carpinteria greater than 20 years ago and is considered extirpated from the area. Suitable back-dune habitats are absent within the Project Site, and based on lack of more recent records, sandy beach tiger beetle is not expected to occur at the Project Site.

Globose Dune Beetle. This species was reported from dunes in the Carpinteria area in 1934. Although recorded in the CNDDB as presumed extant, it likely to have become extirpated as development has occurred and beach use has substantially increased since then. At the Project Site, the bluff cliff directly meets the beach face, and does not support suitable sandy beach dune habitat; therefore, globose dune beetle is not expected to occur at the Project Site.

Southern Steelhead. This species is an anadromous form of rainbow trout, meaning it reproduces in freshwater, but spends much of its life cycle in the ocean, where greater feeding opportunities provide a greater growth rate and size. Steelhead has been divided into 15 evolutionary significant units (ESU) based on similarity in life history, location and genetic markers. Southern steelhead are likely to have greater physiological tolerances to warmer water and more variable conditions in comparison to populations in other ESUs. The southern

California ESU includes 16 populations from the Santa Ynez River in the north to San Mateo Creek in the south. Carpinteria Creek supports a steelhead population, with juveniles seen every year since the 1980's, primarily above the confluence with Gobernador Creek (National Marine Fisheries, 2003). A 28-inch adult female was caught illegally near the Creek mouth on February 27, 2000. Dual-frequency identification sonar (DIDSON) counts have been initiated by CDFW in Carpinteria Creek in 2014, but data are not yet available (National Marine Fisheries Service, 2016). Due to the lack of habitat and barriers between the Project Site and the ocean, this species does not occur at the Project Site.

Tidewater Goby. This species was found in lower Carpinteria Creek in 1995, and in 2009 during the construction of the 8th Street pedestrian bridge (Padre, 2016). However, tidewater gobies have not been collected in the Carpinteria Salt Marsh since 1923, apparently because brackish-water habitats are no longer sustained in the estuary. Due to the lack of habitat and barriers between the site and the ocean, tidewater goby does not occur on the Project Site.

California Newt. This species was observed in upper Carpinteria Creek (Padre, 2002b), upper Rincon Creek (Padre, 2001), and upper Santa Monica Creek (Padre pers. obs., 2020). California newt occurs in foothill areas with intact riparian habitat and pools for breeding, which do not occur at the Project Site. Therefore, California newt is considered absent from the Project Site.

California Red-legged Frog. This species is known to occur in permanent and temporary freshwater bodies, but also to travel extensive distances over upland areas. It has been reported in upper Santa Monica Creek, two miles north of Carpinteria Salt Marsh (Padre, 2003, Padre pers. obs., 2020). This species was not found in Romero Creek following completion of protocol surveys (Padre, 2001). Due to lack of suitable habitat, California red-legged frog is not expected to occur within close proximity to the Project Site.

Foothill Yellow-legged Frog. This species typically occupies perennial streams or rivers of woodlands, chaparral, or forest. It has historically been reported in the Santa Ynez River watershed at the southern end of its range. This species is now apparently extinct from the southern border of Monterey County throughout southern California based on the lack of records since 1970-1971, despite intensive search (Stebbins, 2003). Due to lack of suitable habitat and recent sight records in southern California, foothill yellow-legged frog is not expected to occur at the Project Site.

Arroyo Toad. This species is known to occupy sandy riverbanks, washes and arroyos including within the upper Santa Ynez River and Santa Clara River watersheds. Riverbed, arroyo or other suitable riparian habitat is absent from the Project Site, and arroyo toad is not expected to occur at the Project Site.

Southwestern Pond Turtle. This species is an aquatic turtle inhabiting streams, marshes, ponds, and irrigation ditches within woodland, grassland, and open forest communities, but requires upland sites for nesting and over-wintering. Stream habitat must contain large, deep pool areas or more shallow pools provided some plant or debris cover is

available. This species has been reported in Cold Springs Creek (Tierney and Storrer, 1990), upper Rincon Creek (Padre, 2001), upper Santa Monica Creek (Padre pers. obs., 2020), and lower Carpinteria Creek (Padre, 2016). Due to lack of suitable habitat, southwestern pond turtle is not expected to occur within close proximity to the Project Site.

Two-striped Garter Snake. This species is an aquatic snake found in or near permanent fresh water, often along streams with rocky beds and riparian growth. Two-striped garter snake has been found in many streams along the Santa Barbara County coast, including San Ysidro and Montecito Creeks (Tierney and Storrer, 1990), and recently in upper Santa Monica Creek (Padre pers. obs., 2020) and upper Carpinteria Creek (Padre, 2016). Due to lack of suitable habitat, two-striped garter snake is not expected to occur within close proximity to the Project Site.

Coast Horned Lizard. This species is known from the region and could occur in sandy patches in openings of scrub habitats, such as what is found at the Carpinteria Bluffs. Therefore, there may be a low potential for coast horned lizard to occur in the southern portions of the Project Site.

Northern California Legless Lizard. This species has multiple historical records in the CNDDB in the Carpinteria area, occupying moist, loose soil beneath sand dune vegetation and the duff layer of oak woodlands. Therefore, there may be a low to moderate potential for legless lizard to occur in the lesser disturbed portions of the Project Site (i.e., the Buffer Zone and low-lying areas of vegetated bluffs).

Ringneck Snake. This species has been observed on the Project Site in the Buffer Zone. The San Bernardino subspecies has been designated by the U.S. Forest Service as a sensitive species. However, no other Federal, State or local agency or organization considers this species as needing protection. Therefore, the San Bernardino ringneck snake may not meet the definition of rare or endangered under Section 15380 of the State CEQA Guidelines. According to the subspecific designations and geographic distributions developed in 1942 (including six subspecies in California), the Project Site is located in an intergradation area between the San Bernardino ringneck snake and the Monterey ringneck snake. More recent research (Fontanella et al., 2021) indicates this species should be separated into only three subspecies in California, with the project area included within the western California subspecies, which does not include the formerly designated geographic distribution of the San Bernardino ringneck snake. Therefore, ringneck snakes found on the Project Site do not have any special-status.

Light-footed Clapper Rail. The Final EIR prepared in 2003 for the Carpinteria Salt Marsh Enhancement Plan considered light-footed Ridgway's (Clapper) Rail (*Rallus obsoletus levipes*) as present in the Marsh, at least in Basins 2 and 3, based on incidental observations in 1995 and 1999. Yearly census for light-footed Ridgway's rail have been performed at sites throughout southern California since 1980. This species has not been observed at Carpinteria Salt Marsh since 2002 (Zembal et al., 2016). Therefore, this species is now considered extirpated from the Marsh. Due to lack of suitable habitat, light-footed clapper rail is not expected to occur within close proximity to the Project Site.

Belding's Savanna Sparrow. This species is an obligate saltmarsh resident and occurs within the Carpinteria Salt Marsh. Due to lack of suitable habitat, Belding's savanna sparrow is not expected to occur within close proximity to the Project Site.

American Peregrine Falcon. This species was removed from the Federal and State endangered species lists due to apparent population increases but remains on the State list as Fully Protected. Peregrine falcons nest on ledges or "potholes" in cliffs, usually near water. In the project area, peregrine falcons may be found foraging along the Santa Barbara coastline, including Carpinteria Salt Marsh, but only on an infrequent basis (SBCFCWCD, 2003). This species may have a low potential to occur within close proximity to the Project Site, and likely be limited to foraging.

Western Snowy Plover. This species inhabits sandy beaches, especially in areas with low foredunes that are not inundated at high tide. Western snowy plovers are an occasional winter visitor to areas in the vicinity of the Carpinteria Salt Marsh and have been observed on the beach below Carpinteria Bluffs. Carpinteria Beach was formerly designated as Critical Habitat by the U.S. Fish and Wildlife Service for wintering snowy plovers but has since been removed in 2012. Snowy plovers may be expected to forage, but not nest on the beach below the bluff portions of the Project Site.

California Brown Pelican. This species does not nest in mainland Santa Barbara County. Most nesting takes place in Baja California, but some occurs on the Channel Islands (primarily Anacapa Island). Areas favored for congregating generally have freshwater for bathing (such as river mouths), quiet places for resting and preening, and often are adjacent to ocean waters with good fish populations. Although aerial observations of brown pelican are common along the Project Site's coastline, due to lack of suitable habitat, this species is not expected to occur directly within the Project Site.

California Least Tern. This species is found breeding in colonies on beaches, sandbars or other flat exposed areas. It has been observed foraging at the Carpinteria Salt Marsh in the vicinity of the estuary mouth (SBCFCWCD, 2003). Ocean waters adjacent to the Project Site may be visited by California least terns. Due to lack of suitable habitat, this species is not expected to occur at the Project Site.

Northern Harrier. Northern harriers inhabit marshes and meadows where they feed on small mammals. This species is not known to breed along the Santa Barbara south coast but is expected at Carpinteria Salt Marsh as a transient and winter visitor (SBCFCWCD, 2003). Thus, northern harriers may forage in the general vicinity of the Project Site.

Merlin. This medium-sized falcon is a winter visitor to Santa Barbara County, especially the Carpinteria Salt Marsh, where it has been observed perching on low vegetation or foraging for prey. Thus, merlins may potentially forage in the general vicinity of the Project Site.

Yellow Warbler. This species nests in riparian woodlands and has been reported as nesting within the upper reaches of Romero Creek, Montecito Creek, Toro Canyon and San Ysidro Creek (Tierney and Storrer, 1990). This species has been observed foraging in the

Buffer Zone (Padre, 2012), but due to lack of suitable habitat, this species is not expected to nest at the Project Site.

Yellow-breasted Chat. This species prefers riparian woodlands for use as nesting habitat and has been observed in the past in several of the larger streams along the South Coast. It has been observed nesting in Toro Canyon and is considered rare as a breeder in the project area (Tierney and Storrer, 1990). Due to lack of suitable habitat, this species is not expected to occur within close proximity to the Project Site.

Least Bell's Vireo. This species is known to occur in extensive thickets of willow or other riparian vegetation, including within the Santa Ynez River watershed (CNDDB, 2021). However, due to the absence of riparian forest and lack of breeding records in the region, least Bell's vireo is not likely to occur at or near the Project Site.

White-Tailed Kite. White-tailed kite breeding sites are uncommon in southern Santa Barbara County, but this species regularly forages along the coast during fall and winter, especially in grasslands in the vicinity of nocturnal communal roost sites in willow groves, oaks, avocado and citrus orchards, and eucalyptus (Lehman, 2019). White-tailed kite forages in grasslands along the Carpinteria Bluffs and within the Carpinteria Salt Marsh. Thus, white-tailed kites may forage in the vicinity of the Project Site.

Loggerhead Shrike. This species frequents grassland and open shrubland and has been observed at the Carpinteria Bluffs. Loggerhead shrike may forage at the Project Site.

Cooper's Hawk. This species is a very uncommon, local breeder in foothill riparian habitats in Santa Barbara County (Lehman, 2019). Cooper's hawk may be seen regularly in spring and summer in the Carpinteria area, suggesting that nesting may occur in Santa Monica Canyon to the north of the project area. This species was observed foraging at the Project Site in April 2021 and may be expected to forage and to a lesser degree, potentially nest at the Project Site.

American Bittern. This species is a very uncommon, local transient and winter visitor along the southern Santa Barbara County coastline (Lehman, 2019). This species prefers fresh- and salt-water marshes, and has been observed at the Carpinteria Salt Marsh. Due to lack of suitable habitat, this species is not expected to occur within close proximity to the Project Site.

Long-billed Curlew. This species is an uncommon visitor to southern Santa Barbara County, but occurs regularly at Carpinteria Salt Marsh (Lehman, 2019). This species is found in a variety of habitats including sandy beaches, sloughs, river mouths, pastureland, agricultural fields, and dry grassland. Due to lack of suitable habitat, this species is not expected to occur within close proximity to the Project Site.

Osprey. This species is primarily a fall transient to the southern Santa Barbara County coastline (Lehman, 2019). Ospreys are observed at lakes, ponds, sloughs, river mouths, and over nearshore ocean waters. Thus, osprey may occur within the Carpinteria Salt Marsh and

forage within ocean waters adjacent to the Project Site. Due to lack of suitable habitat, this species is not expected to occur at the Project Site.

Bank Swallow. This species nests in large colonies, excavating nest burrows in steep riverbank cliffs, gravel pits, and highway cuts (National Geographic Society, 1987). It has been observed at Hendry's Beach (also known as Arroyo Burro Beach) in Santa Barbara (CNDDB, 2021). Suitable habitat does not occur within the Project Site and this species is not expected to occur at the Project Site.

San Diego Desert Woodrat. This species typically occurs in rocky terrain intermixed with chaparral or prickly pear cactus (*Opuntia* sp.) where it occupies elaborate dens built from sticks, twigs, cacti, dung, or other plant materials and man-made debris. Suitable habitat for San Diego desert woodrat is absent from the Project Site, and this species is not expected to occur at the Project Site.

Big Free-tailed Bat. This species prefers rugged, rocky canyons and cliffs, roosts in crevices and cracks in high canyon walls (and to a lesser degree in buildings), and is known to forage over water sources. Big free-tailed bat has been observed in the Santa Barbara area; however, the CDFW Wildlife Habitat Relationships System indicates that this species mainly occurs in New Mexico, southern Arizona and Texas, and probably does not breed in California (CWHR Program Staff, 2002). Due to the absence of suitable bat roosting habitat and lack of sight records in the region, big free-tailed bat is not expected to occur at the Project Site.

Townsend's Big-eared Bat. This species is primarily a cave dweller but may roost in mine tunnels and abandoned buildings with cave-like attics (Pierson et al., 2002). There are a few historic museum records of Townsend's big-eared bat in the Santa Barbara area. Buildings on-site are not abandoned and do not provide attic-like habitat. Due to the absence of suitable roosting habitat, this species is not expected to occur at the Project Site.

Yuma Myotis. This species is predominately a crevice dweller, commonly associated with man-made structures including bridges and barns, and may also roost in caves, mines and swallow nests (Pierson et al., 2002). Yuma myotis uses the underside of the Carpinteria Avenue bridge as a night roost (Padre, 2016), and has been observed by Padre biologists in expansion joints and other crevices in numerous bridges in the region. Due to the absence of suitable crevice roosting habitat, this species is not expected to occur at the Project Site.

Migratory Birds. A list of migratory birds protected under the Migratory Bird Treaty Act of 1918 is contained in 50 CFR 10.13, and includes five raptor species known from the project area (great horned owl, red-tailed hawk, red-shouldered hawk, Cooper's hawk, and American kestrel), other potential bird species listed above, and a majority of the bird species listed in Attachment B. The focus of the Act was the:

> "Establishment of a Federal prohibition, unless permitted by regulations, to pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or

> cause to be carried by any means whatever, received for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention for the protection of migratory birds, or any part, nest or egg of any such bird" (16 USC 703).

These species are also protected under Section 3503 and 3503.5 of the California Fish and Game Code which state, respectively: "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto", and "It is unlawful to take, possess, or destroy any birds of the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by the Code or any regulation adopted pursuant thereto." Migratory birds are common in the area and are known or expected to breed at the Project Site.

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FIGURES

LEGEND:

Operational Area

Project Site

MAP EXTENT:

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CARPINTERIA PLANT DECOMMISSIONING SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: June 2021

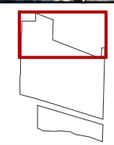
OPERATIONAL AREAS MAP

FIGURE 1

LEGEND:

- Operational Area
- **Vegetation Types**
  - AG - Annual grassland or mustards
  - CB - Coyote brush scrub
  - CS - California sagebrush scrub
  - CYP - Monterey cypress trees
  - DEV - Developed (pavement, gravel, structures)
  - EUC - Eucalyptus groves or windrows
  - OAK - Coast live oak woodland
  - ORN - Ornamental trees

MAP EXTENT:



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Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA
OIL AND GAS PROCESSING FACILITY PROPERTIES
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: December 2022

VEGETATION MAP

FIGURE 2A

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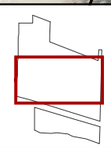
LEGEND:

- Operational Area
- **Vegetation Types**
  - AG - Annual grassland or mustards
  - AG/DIST - Disturbed annual grassland or mustards
  - CS - California sagebrush scrub
  - DEV - Developed (pavement, gravel, structures)
  - EUC - Eucalyptus groves or windrows
  - EUC/TAM - Eucalyptus and Tamarisk thickets or windrows
  - MF - Mulefat thicket
  - OAK - Coast live oak woodland
  - ORN - Ornamental trees
  - TOY - Toyon Chaparral
  - WIL - Arroyo willow thickets

MAP EXTENT:



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Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

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PROJECT NAME: CHEVRON CARPINTERIA
OIL AND GAS PROCESSING FACILITY PROPERTIES
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: December 2022

VEGETATION MAP

FIGURE 2B

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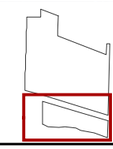
LEGEND:

- Operational Area
- **Vegetation Types**
  - AG - Annual grassland or mustards
  - BARE - Bare ground
  - CB - Coyote brush scrub
  - CS - California sagebrush scrub
  - CYP - Monterey cypress trees
  - DEV - Developed (pavement, gravel, structures)
  - EUC - Eucalyptus groves or windrows
  - GB - Golden bush scrub
  - IP - Iceplant mats
  - LB - Lemonade berry scrub
  - SB - Saltbush (Quailbush) scrub
  - WIL - Arroyo willow thickets

MAP EXTENT:



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Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

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PROJECT NAME: CHEVRON CARPINTERIA
OIL AND GAS PROCESSING FACILITY PROPERTIES
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: December 2022

VEGETATION MAP

FIGURE 2C

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ATTACHMENT A
PROJECT SITE PLANT LIST

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot
CUPRESSACEAE (Cypress Family)												
Monterey cypress	*Hesperocyparis macrocarpa*	T	NL	I		X	X	X		X	X	X
Dawn redwood	*Metasequoia glyptostroboides*	T	NL	I						X		
PINACEAE (Pine Family)												
Aleppo pine	*Pinus halepensis*	T	NL	I			X				X	
Monterey pine	*Pinus radiata*	T	NL	I				X	X	X		
TAXODIACEAE (Bald Cypress Family)												
Redwood	*Sequoia sempervirens*	T	NL	I			X					
ARAUCARIACEAE (Araucaria Family)												
Norfolk island pine	*Araucaria excelsa*	T	NL	I					X			
ADOXACEAE (Muskroot Family)												
Blue elderberry	*Sambucus nigra ssp. caerulea*	T	FACU	N				X	X			X
AIZOACEAE (Fig-Marigold Family)												
Crystalline iceplant	*Mesembryanthemum crystallinum*	H	FACU	I	Moderate						X	
Baby sun rose	*Mesembryanthemum cordifolium*	V	NL	I			X					
Freeway iceplant	*Carpobrotus edulis*	S	NL	I	High					X	X	X
ANACARDIACEAE (Sumac or Cashew Family)												
Laurel sumac	*Malosma laurina*	S	NL	N		X						
Lemonade berry	*Rhus integrifolia*	S	NL	N		X		X	X		X	X
Brazilian pepper tree	*Schinus terebinthifolius*	T	NL	I	Moderate		X	X				
APIACEAE (Carrot Family)												
Poison hemlock	*Conium maculatum*	H	FACW	I	Moderate	X		X				
Fennel	*Foeniculum vulgare*	H	NL	I	Moderate	X						X
APOCYNACEAE (Dogbane Family)												
Oleander	*Nerium oleander*	S	NL	I			X	X				
ARALIACEAE (Ginseng Family)												
English ivy	*Hedera helix*	V	NL	I	High		X	X				
ASPARAGACEAE (Asparagus Family)												
Century plant	*Agave americana*	S	UPL	I						X		
Dracaena	*Dracaena sp.*	S	NL	I						X		
ASPHODELACEAE (Asphodel Family)												
Aloe	*Aloe sp.*	S	NL	I						X		
Onionweed	*Asphodelus fistulosus*	H	NL	I	Moderate	X				X		X
ASTERACEAE (Sunflower Family)												
Western ragweed	*Ambrosia psilostachya*	H	FACU	N		X		X	X	X	X	X
California sagebrush	*Artemisia californica*	H	NL	N		X			X		X	X
Mugwort	*Artemisia douglasiana*	H	FAC	N		X		X			X	
Coyote brush	*Baccharis pilularis*	S	NL	N		X		X	X	X	X	X
Mule fat	*Baccharis salicifolia*	S	FAC	N				X			X	
Italian thistle	*Carduus pycnocephalus*	H	NL	I	Moderate		X	X				
Tocalote	*Centaurea melitensis*	H	NL	I	Moderate	X						X
Bull thistle	*Cirsium vulgare*	H	FACU	I	Moderate							X
Brass buttons	*Cotula coronopifolia*	H	OBL	I	Limited					X		
Artichoke	*Cynara scolymus*	H	NL	I				X				
German Ivy	*Delairea odorata*	V	NI	I	High	X		X				
California bush sunflower	*Encelia californica*	S	NL	N		X				X	X	X
Horseweed	*Erigeron canadensis*	H	FACU	N						X		
Crown daisy	*Glebionis coronaria*	H	NL	I	Moderate					X		
Bristly ox-tongue	*Helminthotheca echioides*	H	FAC	I	Limited		X	X	X	X		
Telegraph weed	*Heterotheca grandiflora*	H	NL	N						X		X
Rough cat's-ear	*Hypochaeris radicata*	H	NL	I	Moderate			X	X			X
Coastal golden-bush	*Isocoma menziesii*	S	NL	N		X				X		X

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot
Prickly lettuce	*Lactuca serriola*	H	FACU	I		X		X		X		
Narrowleaf cottonrose	*Logfia gallica*	H	NL	I						X		
Green everlasting	*Pseudognaphalium californicum*	H	NL	N		X				X		
Cudweed	*Pseudognaphalium canescens ssp. microcephalum*	H	FACU	N		X				X		
Cotton-batting plant	*Pseudognaphalium stramineum*	H	FAC	N						X		
Milk thistle	*Silybum marianum*	H	NL	I	Limited					X		
Prickly sow thistle	*Sonchus asper*	H	FAC	I		X						
Common sow thistle	*Sonchus oleraceus*	H	UPL	I			X	X		X		X
BIGNONIACEAE (Bignonia Family)												
Trumpet creeper	*Campsis radicans*	V	NL	I				X				
Cape honeysuckle	*Tecoma capensis*	S	NL	I				X	X			
BORAGINACEAE (Borage Family)												
Large-flowered popcorn flower	*Cryptantha intermedia*	H	NL	N						X		
Pride of Madeira	*Echium candicans*	S	NL	I	Limited			X		X		
Branching phacelia	*Phacelia ramosissima*	H	FACU	N						X	X	X
BRASSICACEAE (Mustard Family)												
Shepherd's purse	*Capsella bursa-pastoris*	H	FACU	I						X		
Summer mustard	*Hirschfeldia incana*	H	NL	I	Moderate	X	X	X	X	X	X	X
Wild radish	*Raphanus sativus*	H	NL	I	Limited		X	X	X	X		
London rocket	*Sisymbrium irio*	H	NL	I	Limited					X		
CACTACEAE (Cactus Family)												
Mission prickly-pear	*Opuntia ficus-indica*	S	NL	I						X		
CARYOPHYLLACEAE (Pink Family)												
Sand-spurrey	*Spergularia bocconi*	H	FACW	I						X		
Four-leaved all-seed	*Polycarpon tetraphyllum*	H	NL	I			X					
CHENOPODIACEAE (Goosefoot Family)												
Big saltbush, quailbush	*Atriplex lentiformis*	S	FAC	N		X			X		X	X
Five-hook bassia	*Bassia hyssopifolia*	S	FACU	I	Limited		X		X	X		
Pitseed goosefoot	*Chenopodium berlandieri*	H	NL	N						X		
Nettle leaf goosefoot	*Chenopodium murale*	H	FACU	I						X		
Russian thistle	*Salsola tragus*	H	FACU	I	Limited				X	X		
CONVOLVULACEAE (Morning-Glory Family)												
Chaparral morning-glory	*Calystegia macrostegia ssp. intermedia*	V	NL	N		X	X	X				X
Bindweed	*Convolvulus arvensis*	H	NL	I			X			X		
CRASSULACEAE (Stonecrop Family)												
Pygmy weed	*Crassula connata*	H	FAC	N						X		
Jade plant	*Crassula ovata*	H	NL	I						X		
EUPHORBIACEAE (Spurge Family)												
Spotted spurge	*Chamaesyce maculata*	H	FACU	I			X			X		
Caper spurge	*Euphorbia lathyris*	H	NL	I			X					
Petty spurge	*Euphorbia peplus*	H	NL	I			X	X		X		
Carnation spurge	*Euphorbia terracina*	H	NL	N	Limited				X	X	X	
Castor bean	*Ricinus communis*	H	FACU	I	Limited		X	X	X		X	X
FABACEAE (Legume Family)												
Sydney golden wattle	*Acacia longifolia*	T	NL	I	Watch				X	X		
Strigose lotus	*Acmispon strigosus*	H	NL	N						X		
Miniature lupine	*Lupinus bicolor*	H	NL	N						X		
Succulent lupine	*Lupinus succulentus*	H	NL	N					X			
Collared annual lupine	*Lupinus truncatus*	H	NL	N						X		
California bur-clover	*Medicago polymorpha*	H	NL	I	Limited			X		X		
Yellow sweet clover	*Melilotus indicus*	H	FACU	I		X			X	X		X
Spring vetch	*Vicia sativa*	H	FACU	I				X	X		X	

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FAGACEAE (Oak Family)												
Coast live oak	*Quercus agrifolia*	T	NL	N		X	X	X	X	X		X
Scrub oak	*Quercus berberidifolia*	T	NL	N								X
GERANIACEAE (Geranium Family)												
Red-stemmed filaree	*Erodium cicutarium*	H	NL	I	Limited	X	X		X	X	X	
White-stemmed filaree	*Erodium moschatum*	H	NL	I						X		
Cut-leaf geranium	*Geranium dissectum*	H	NL	I	Limited			X		X		
Geranium	*Pelargonium sp.*	H	NL	I				X				
GROSSULARIACEAE (Gooseberry Family)												
Fuschia-flowered gooseberry	*Ribes speciosum*	S	NL	N					X			
LAMIACEAE (Mint Family)												
Horehound	*Marrubium vulgare*	H	FACU	I	Limited	X				X		
Rosemary	*Rosmarinus officianalis*	S	NL	I			X					
Black sage	*Salvia mellifera*	S	NL	N					X		X	
Purple sage	*Salvia leucophylla*	S	NL	N		X		X			X	X
LAURACEAE (Laurel Family)												
Avocado	*Persea americana*	T	NL	I						X		
MAGNOLIACEAE (Magnolia Family)												
Southern magnolia	*Magnolia grandiflora*	T	NL	I						X		
MALVACEAE (Mallow Family)												
Bull mallow	*Malva nicaeensis*	H	NL	I			X	X	X	X		
Cheeseweed	*Malva parviflora*	H	NL	I				X	X	X	X	
MYOPORACEAE (Myoporum Family)												
Myoporum	*Myoporum laetum*	T	NL	I	Moderate			X	X	X		
MYRTACEAE (Myrtle Family)												
Blue gum	*Eucalyptus globulus*	T	NL	I	Moderate			X	X	X	X	
Scarlet gum	*Eucalyptus ficifolia*	T	NL	I				X				
NYCTAGINACEAE (Four O'Clock Family)												
Bougainvillea	*Bougainvillea spectabilis*	S	NL	I				X	X	X		
OLEACEAE (Olive Family)												
Oregon ash	*Fraxinus latifolia*	T	FACW	I				X		X		
Olive	*Olea europaea*	T	NL	I	Limited			X				
ONAGRACEAE (Evening Primrose Family)												
Small evening primrose	*Camissoniopsis micrantha*	H	NL	N						X		X
OXALIDACEAE (Oxalis Family)												
Creeping wood sorrel	*Oxalis corniculata*	H	FACU	I		X	X					X
Bermuda buttercup	*Oxalis pes-capre*	H	NL	I	Moderate		X	X	X	X	X	X
PAPAVERACEAE (Poppy Family)												
California poppy	*Eschscholzia californica*	H	NL	N					X	X		
PITTOSPORACEAE (Pittosporum Family)												
Victorian box	*Pittosporum undulatum*	T	NL	I			X	X		X		
PLANTAGINACEAE (Plantain Family)												
English plantain	*Plantago lanceolata*	H	FAC	I	Limited	X		X	X	X	X	
Common plantain	*Plantago major*	H	FAC	I				X				
PLATANACEAE (Sycamore Family)												
Western sycamore	*Plantanus racemosa*	T	FAC	N		X		X		X	X	X
POLYGONACEAE (Buckwheat Family)												
California buckwheat	*Eriogonum fasciculatum*	S	NL	N								X
Seacliff buckwheat	*Eriogonum parvifolium*	S	NL	N							X	X
Common knotweed	*Polygonum aviculare ssp. depressum*	H	FAC	I				X				
Curly dock	*Rumex crispus*	H	FAC	I	Limited		X	X	X	X	X	
MYRSINACEAE (Myrsine Family)												
Scarlet pimpernel	*Anagallis arvensis*	H	FAC	I		X	X			X		X

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RANUNCULACEAE (Buttercup Family)												
Virgin's bower	*Clematis ligusticifolia*	V	FAC	N			X			X		
ROSACEAE (Rose Family)												
California rose	*Rosa californica*	S	FAC	N							X	
California blackberry	*Rubus ursinus*	PV	FAC	N							X	
Cotoneaster	*Cotoneaster pannosa*	S	NL	I	Moderate			X		X		
Toyon	*Heteromeles arbutifolia*	S	NL	N				X	X		X	
Peach	*Prunus persica*	S	NL	I			X	X		X		
Firethorn	*Pyracantha koidzumii*	S	NL	I				X				
Blackberry	*Rubus pensilvanicus*	V	NL	I			X	X				
RUBIACEAE (Madder Family)												
Common bedstraw	*Galium aparine*	H	FACU	N						X		
SALICACEAE (Willow Family)												
Arroyo willow	*Salix lasiolepis*	T	FACW	N		X	X	X		X		X
SAURURACEAE (Lizards-tail Family)												
Yerba mansa	*Anemopsis californica*	H	OBL	N							X	
SOLANACEAE (Nightshade Family)												
Tree tobacco	*Nicotiana glauca*	S	FAC	I	Moderate					X		X
Nightshade	*Solanum douglasii*	H	FAC	N			X	X				
Black nightshade	*Solanum nigrum*	H	FACU	I		X						
Purple nightshade	*Solanum xanti*	S	NL	N								X
TAMARICACEAE (Tamarisk Family)												
Athel tamarisk	*Tamarix aphylla*	T	FAC	I	Limited					X		
TROPAEOLACEAE (Nasturtium Family)												
Garden nasturtium	*Tropaeolum majus*	H	NL	I			X	X	X			
ULMACEAE (Elm family)												
Chinese elm	*Ulmus parvifolia*	T	UPL	I					X			
URTICACEAE (Nettle Family)												
Dwarf nettle	*Urtica urens*	H	NL	I						X		
VERBENACEAE (Vervain Family)												
Verbena	*Verbena lasiostachys var. scabrida*	H	FAC	N		X						X
ARECACEAE (Palm Family)												
Canary Island palm	*Phoenix canariensis*	T	NL	I	Limited			X				
Mexican fan palm	*Washingtonia robusta*	T	NL	I	Moderate				X			
CYPERACEAE (Sedge Family)												
Tall cyperus	*Cyperus eragrostis*	H	FACW	N			X	X		X		
California bulrush	*Scheonoplectus californicus*	H	OBL	N							X	
JUNCACEAE (Rush Family)												
Spiny rush	*Juncus acutus ssp. leopoldii*	H	FACW	N							X	
POACEAE (Grass Family)												
Slender wild oat	*Avena barbata*	G	NL	I	Moderate	X	X	X	X	X		
Wild oat	*Avena fatua*	G	NL	I	Moderate		X	X	X			
Brachypodium	*Brachypodium distachyon*	G	NL	I	Moderate	X						
Rescue grass	*Bromus catharticus*	G	NL	I			X	X				
Ripgut grass	*Bromus diandrus*	G	NL	I	Moderate	X	X	X	X		X	X
Soft cheat	*Bromus hordeaceus*	G	FACU	I	Limited			X		X	X	X
Red brome	*Bromus madritensis* ssp. *rubens*	G	UPL	I	High	X				X		X
Pampas grass	*Cortaderia selloana*	G	FACU	I	High	X	X	X				X
Bermuda grass	*Cynodon dactylon*	G	FACU	I	Moderate				X			X
Giant wildrye	*Elymus condensatus*	G	FACU	N								X
Erect veldt grass	*Ehrharta erecta*	G	NL	I	Moderate		X					
Italian ryegrass	*Festuca perennis*	G	FAC	I	Moderate			X	X			
Farmer's foxtail	*Hordeum murinum ssp. leporinum*	G	NI	I	Moderate	X	X	X	X	X	X	

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Goldentop grass	*Lamarckia aurea*	G	FACU	I						X		
Dallis grass	*Paspalum dilatatum*	G	FAC	I				X				
Kikuyu grass	*Pennisetum clandestinum*	G	FACU	I	Limited		X	X				
Fountain grass	*Pennisetum setaceum*	G	NL	I	Moderate							X
Pennisetum	*Pennisetum villosum*	G	NL	I	Watch	X				X		X
Annual bluegrass	*Poa annua*	G	FAC	I			X					
Smilo grass	*Stipa mileacea*	G	NL	I	Limited			X	X	X		
Purple needlegrass	*Stipa pulchra*	G	NL	N		X						
Cultivated wheat	*Triticum aestivum*	G	NL	I					X			
Rattail fescue	*Festuca myuros*	G	FACU	I	Moderate	X					X	X

Native Status Notes	Invasiness Notes
N: Native (to the region)	Invasiveness Rating from California Invasive Plant Inventory (2020)
I: Introduced	

Wetland Notes
OBL: Obligate wetland species, occurs almost always in wetlands (>99% probability)
FACW: Facultative wetland species, usually found in wetlands (67-99% probability)
FAC: Facultative species, equally likely to occur in wetland and non-wetlands (34-66% probability)
FACU: Facultative upland species, not usually found in wetlands (1-33% probability)
UPL: Upland species, almost never found in wetlands (<1% probability)
NI: No indicator has been assigned due to a lack of information to determine indicator status
NL: Not listed, assumed upland species

ATTACHMENT B
PROJECT SITE WILDLIFE LIST

ATTACHMENT B
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - WILDLIFE LIST

COMMON NAME	*SCIENTIFIC NAME*	STATUS
AMPHIBIANS AND REPTILES		
Baja California Tree Frog	*Pseudacris hypochondriaca hypochondriaca*	Native
Western Toad	*Anaxyrus boreas halophilus*	Native
San Diego Gopher Snake	*Pituophis catenifer annectens*	Native
Ringneck Snake	*Diadophis punctatus (western California clade)*	Native
Southern Alligator Lizard	*Elgaria multicarinata*	Native
Common Side-blotched Lizard	*Uta stansburiana*	Native
Western Fence Lizard	*Sceloporus occidentalis*	Native
BIRDS		
Quails		
California Quail	*Callipepla californica*	MBTA
Pelicans & Cormorants		
Double-crested Cormorant (overhead)	*Phalacrocorax auritus*	WL, MBTA
California Brown Pelican (overhead)	*Pelecanus occidentalis californicus*	FP, D, MBTA
Herons & Egrets		
Great Blue Heron	*Ardea herodias*	MBTA
Vultures		
Turkey Vulture (overhead)	*Cathartes aura*	MBTA
Hawks & Eagles		
Cooper's Hawk	*Accipiter cooperii*	WL, MBTA
Red-tailed Hawk	*Buteo jamaicensis*	MBTA
Red-shouldered Hawk	*Buteo lineatus*	MBTA
Falcons		
American Kestrel	*Falco sparverius*	MBTA
Shorebirds & Gulls		
Unidentified Gull sp. (overhead)	*Larus* sp.	MBTA
Pigeons & Doves		
Band-tailed Pigeon	*Patagioenas fasciata*	MBTA
Rock Pigeon	*Columba livea*	Introduced
Mourning Dove	*Zenaida macroura*	MBTA

ATTACHMENT B
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - WILDLIFE LIST

COMMON NAME	*SCIENTIFIC NAME*	STATUS
Eurasian Collared Dove	*Streptopelia decaocto*	Introduced
Owls		
Great Horned Owl	*Bubo virginianus*	MBTA
Swifts & Hummingbirds		
Anna's Hummingbird	*Calypte anna*	MBTA
Allen's Hummingbird	*Selasphorus sasin*	MBTA
Woodpeckers		
Acorn Woodpecker	*Melanerpes formicivorus*	MBTA
Downy Woodpecker	*Picoides pubescens*	MBTA
Northern Flicker	*Colaptes auratus*	MBTA
Nuttall's Woodpecker	*Picoides nuttallii*	MBTA
Flycatchers		
Black Phoebe	*Sayornis nigricans*	MBTA
Say's Phoebe	*Sayornis saya*	MBTA
Cassin's Kingbird	*Tyrannus vociferans*	MBTA
Shrikes & Vireos		
Hutton's Vireo	*Vireo huttoni*	MBTA
Jays, Crows & Ravens		
California Scrub Jay	*Aphelocoma californica*	MBTA
American Crow	*Corvus brachyrhynchos*	MBTA
Common Raven	*Corvus corax*	MBTA
Swallows		
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	MBTA
Cliff Swallow	*Hirundo pyrrhonota*	MBTA
Titmouse & Nuthatches		
Oak Titmouse	*Parus inornatus*	MBTA
Bushtit	*Psaltriparus minimus*	MBTA
White-breasted Nuthatch	*Sitta carolensis*	MBTA
Wrens, Kinglets & Gnatcatchers		
House Wren	*Troglodytes aedon*	MBTA
Bewick's Wren	*Thryomanes bewickii*	MBTA
Ruby-crowned Kinglet	*Regulus calendula*	MBTA
Wrentit	*Chamaea fasciata*	MBTA

ATTACHMENT B
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - WILDLIFE LIST

COMMON NAME	*SCIENTIFIC NAME*	STATUS
Blue-gray Gnatcatcher	*Polioptila caerulea*	MBTA
Thrushes		
Western Bluebird	*Sialia mexicana*	MBTA
Hermit Thrush	*Catharus guttatus*	MBTA
American Robin	*Turdus migratorius*	MBTA
Thrashers		
Northern Mockingbird	*Mimus polyglottos*	MBTA
Starlings		
European Starling	*Sturnus vulgaris*	Introduced
Warblers		
Yellow Warbler	*Setophaga petechia*	SSC (where nesting), MBTA
Yellow-rumped Warbler	*Setophaga coronata*	MBTA
Common Yellowthroat	*Geothlypis trichas*	MBTA
Sparrows		
Spotted Towhee	*Pipilo maculatus*	MBTA
California Towhee	*Melozone crissalis*	MBTA
House Sparrow	*Passer domesticus*	Introduced
Song Sparrow	*Melospiza melodia*	MBTA
White-crowned Sparrow	*Zonotrichia leucophrys*	MBTA
Tanagers, Grosbeaks & Buntings		
Western Tanager	*Piranga ludoviciana*	MBTA
Blackbirds, Meadowlark & Orioles		
Brewer's Blackbird	*Euphagus cyanocephalus*	MBTA
Hooded Oriole	*Icterus cucullatus*	MBTA
Finches		
House Finch	*Haemorhous mexicana*	MBTA
Lesser Goldfinch	*Spinus psaltria*	MBTA
Purple Finch	*Haemorhous purpureus*	MBTA
MAMMALS		
Audubon's Cottontail	*Sylvilagus audubonii*	Native
Big-eared Woodrat	*Neotoma macrotis*	Native
Botta's Pocket Gopher	*Thomomys bottae*	Native

ATTACHMENT B
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - WILDLIFE LIST

COMMON NAME	***SCIENTIFIC NAME***	**STATUS**
California Ground Squirrel	*Otospermophilus beecheyi*	Native
Coyote	*Canis latrans*	Native
Domestic Dog	*Canis lupus familiaris*	Introduced
Domestic Cat	*Felis catus*	Introduced
Raccoon	*Procyon lotor*	Native
Red Fox	*Vulpes vulpes*	Introduced
Striped Skunk	*Mephitis mephitis*	Native
Virginia Opossum	*Didelphis virginiana*	Introduced
INVERTEBRATES		
Monarch Butterfly	*Danaus plexippus*	SA, PD

Notes: MBTA: Migratory Bird Treaty Act and Fish and Game Code 3503; 3503.5 Protection
WL: CDFW Watch List Species
FP: CDFW Fully Protected
SSC: California Species of Special Concern (for birds: where nesting)
SA: CDFW Special Animal
PD: Petition for Federal Endangered Species Act Listing Deferred (USFWS)
D: Delisted from the Federal Endangered Species Act (USFWS)

Appendix C-2

Tree Report

TREE REPORT

DECOMMISSIONING AND REMEDIATION OF THE CARPINTERIA OIL AND GAS PROCESSING FACILITIES CARPINTERIA, SANTA BARBARA COUNTY, CALIFORNIA

Project No. 2002-5211

Prepared for:

Chevron Environmental Management Company
276 Tank Farm Road
San Luis Obispo, CA 93401

Prepared by:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401

DECEMBER 2021

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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1.0 REPORT PURPOSE AND SUMMARY

This Tree Report was prepared at the request of the Chevron Environmental Management Company (Chevron) to support an application for the decommissioning of the Carpinteria Oil and Gas Processing Facility (Project Site), located in the City of Carpinteria, California. The Project Site supports approximately 1,500 trees comprised of least 21 species; 45 percent of which (677 trees) are non-native blue gum (*Eucalyptus globulus*). Completion of decommissioning activities at the Project Site are expected to require the removal of approximately 60 blue gum and two (2) Monterey cypress (*Cupressus macrocarpa*) trees, or 4.1 percent of the Project Site's entire tree total; both species of which are planted specimens and are non-native or introduced to the region. None of the trees expected to be removed are located within Environmentally Sensitive Habitat Area (ESHA).

2.0 TREE PRESERVATION AND PROTECTION GUIDELINES

The assessment of potential tree impacts associated with the decommissioning activity are required to comply with the City of Carpinteria General Plan and Local Coastal Plan, and the California Environmental Quality Act (CEQA). Objective OSC-2 of the City of Carpinteria General Plan and Local Coastal Plan is to "Preserve and restore the natural resources of the Carpinteria Bluffs." Policy OSC-2i under Objective OSC-2 states:

"Preserve all windrow trees as one part of a contiguous and naturally preserved open space system across the whole of the Carpinteria Bluffs. Thinning, pruning and removal of trees shall be limited to what is necessary to maintain the trees in a healthful condition and to remove any hazardous condition. When a tree is approved by the City for removal, it shall be required to be replaced at a ratio appropriate to ensure infill of any gap created in the windrow and with a tree type and size to be approved by the City. Replacement trees that fail to survive within the first five years after planting shall be replaced. Planting of native trees is encouraged as are programs for phased removal and replacement of tamarisk windrows in favor of native tree windrows. Development or other activity proposed on parcels including windrows shall be setback a minimum of 10 feet from the drip line of the trees and shall not result in compacting of soil or other potential damage to the trees' root system or water source."

According to the City of Carpinteria Guidelines for the Implementation of the California Environmental Quality Act (CEQA) for impacts to biological resources, specimen trees are defined in the City's Municipal Code as:

"those with a diameter of at least six inches measured four feet above the ground with a minimum height of at least six feet. For trees that do not have a single trunk, the diameter of all upright woody stems should be combined for the measurement of the diameter…All native tree species, regardless of size, should be considered to be biologically valuable. In particular, young oak trees which do not meet the definition of specimen trees are a significant biological resource due to declining oak populations."

3.0 METHODOLOGY

All protected trees located on the subject parcels were identified and tallied by species or general type throughout the entire Project Site. The proportion of trees that may require removal of the trees due to their location within an anticipated work footprint were given an additional physical and horticultural evaluation. Components of the tree evaluation included:

- Identification of tree species, including;

  Geographic origin (native vs. non-native to California, or native to California but introduced to the Project Site's region)

  Invasiveness rating (if applicable) or other determination according to the California Invasive Plant Council (Cal-IPC) Inventory and its supplements for species native to part of California but invasive in other parts of the state, or species pending assessment;

- Assignment of a tree number, and nailing a numbered aluminum tree tag to the trunk;
- Measurement of all trunks at 4.5 feet above the root crown unless noted otherwise due to trunk anomalies;
- Estimation of the maximum tree canopy spread;
- Estimation of tree height;
- Assignment of health, vigor, and appearance ratings, where:

  "A" = Outstanding (a healthy and vigorous tree characteristic of its species and reasonably free of any visible signs of stress, disease or pest infestation, or physical defects)

  "B" = Above Average (a healthy and vigorous tree with minor visible signs of stress, disease and/or pest infestation, or physical defects)

  "C" = Average (although healthy in overall appearance there is an abnormal amount of stress or disease and/or pest infestation, or physical defects)

  "D" = Below Average/Poor (A tree characterized by exhibiting a greater degree of stress, disease and/or pest infestation, or physical defects than normal and appears to be in a state of rapid decline. The degree of decline may vary greatly in signs of dieback, disease and pest infestation and appears to be in an advanced state of decline), or

  "F" = Dead (A tree exhibiting no signs of life whatsoever);

- Calculation of an index score from the health, vigor and appearance ratings, by averaging the three scores (adding together, then dividing by 3), where:

  "A" = 4 out of 4 points

  "B" = 3 out of 4 points

  "C" = 2 out of 4 points

  "D" = 1 out of 4 points

"F" = 0 out of 4 points

- Identification of the tree location by operational area, windrow, or other geographic markers; and
- Color digital photograph of single trees or small groups of trees.

4.0 TREE SURVEY RESULTS

A total of 1,500 specimen trees were tallied by species throughout the entire Project Site in April 2021 and are presented in Table 1 below. The locations of protected trees (windrows, stands or individuals) found within the Project Site are provided on the attached Tree Inventory Map.

Table 1. Tree Inventory of the Project Site

Common Name	Scientific Name	Tally	Origin	Cal-IPC Invasiveness Rating[1]
Blue gum	*Eucalyptus globulus*	677	Non-native, planted, some on-site reproduction	Limited
Monterey pine	*Pinus radiata*	42	Native to California but introduced to this region, planted	Problematic native; Moderately invasive in NW California
Aleppo pine	*Pinus halepensis*	2	Non-native, planted	Assessed, not on inventory
Monterey cypress	*Cupressus macrocarpa*	38	Native to California but introduced to this region, planted	Problematic native; Moderately invasive in NW California
Coast live oak	*Quercus agrifolia*	225	Native, colonized site, planted, on-site reproduction	Not applicable
Western sycamore	*Platanus racemosa*	80	Native, planted, on-site reproduction	Not applicable
London plane	*Platanus x acerifolia*	4	Non-native, planted	Not applicable
Arroyo willow	*Salix lasiolepis*	51	Native, colonized site	Not applicable
Fan palm	*Washingtonia filifera*	4	Non-native, colonized site	No rating
Norfolk Island pine	*Araucaria heterophylla*	1	Non-native, planted	No rating
Victorian box	*Pittosporum undulatum*	31	Non-native, planted	Watch
Myoporum	*Myoporum laetum*	10	Non-native, planted	Moderate
Brazilian pepper	*Schinus terebinthifolius*	5	Non-native, planted	Moderate
Oregon ash	*Fraxinus latifolia*	9	Introduced, planted	No rating
Athel tamarisk	*Tamarix aphylla*	93	Non-native, planted	Limited
Dawn redwood	*Metasequoia glyptostroboides*	7	Non-native, planted	No rating
Avocado	*Persea americana*	5	Non-native, planted	No rating
Sydney golden wattle	*Acacia longifolia*	12	Non-native, planted	Watch
Chinese elm	*Ulmus parvifolia*	7	Non-native, planted	Assessed, not on inventory

Toyon	*Heteromeles arbutifolia*	135	Native, planted, on-site reproduction	Not applicable
Various fruit	*Not specified*	6	Non-native, planted	No rating
Other ornamental	*Not specified*	4	Non-native, planted	No rating
Blue elderberry	*Sambucus nigra ssp. caerulea*	52	Native, planted, on-site reproduction	Not applicable
Total:		**1,500**		

[1]Cal-IPC Invasiveness Ratings (https://www.cal-ipc.org/plants/inventory/):

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Alert – An Alert is listed on species with High or Moderate impacts that have limited distribution in California, but may have the potential to spread much further.

Watch – These species have been assessed as posing a high risk of becoming invasive in the future in California.

A summary of tree data of estimated impacts due to complete removal are provided in Table 2 below. Tree data recorded for each tree anticipated for removal are summarized in Table 3 below and are provided in the attached Tree Survey Data spreadsheet. Photographs of each tree or small groups of trees are also provided as an attachment.

Table 2. Tree Impact (Removal) Summary According to Tree Health, Vigor & Appearance Index Scores

TREE SCORE:	4 (A)	3 (B)	2 (C)	1 (D)	TOTAL
Anticipated Tree Impacts (Removals)	3	16	27	16	**62**
Percent of Impacted Trees by Score	5%	26%	43%	26%	**100%**
Project Site Tree Tally	NT	NT	NT	NT	**1,500**
Percent of Impacted Trees within Project Site	0.2%	1.1%	1.8%	1.1%	**4.1%**

NT: Not taken (only the trees anticipated for removal were evaluated for health, vigor, and appearance)

Based on the proposed work activity limits, here is a summary of the tree survey, and anticipated impacts metrics:

- A total of 62 live trees and 0 dead trees were evaluated. Tree survey data described above was recorded for all 62 live trees.
- Sixty (60) of the trees evaluated are blue gum (*Eucalyptus globulus*) trees, which are planted in the Main Plant Area middle east-west windrow, the Main Plant Area southern north-south windrow, and in the Chevron Pipeline Area east-west windrow.
- Two (2) of the trees evaluated are Monterey cypress (*Cupressus macrocarpa*) trees, which are planted in the southern portion of the Main Plant Area, adjacent to the fence that borders the Union Pacific railroad right-of-way.
- 69 percent of the trees evaluated received a health-vigor-appearance index score of 2 out of 4 points (C rating) or worse, predominantly due to thinning crown, lopsided canopy, and evidence of previous topping.
- Anticipated impacts to these 62 trees are complete removals.
- Tree impacts (removals) are estimated at 4.1% of the entire tree population at the Project Site.
- Zero (0) trees expected to be removed are located within Environmentally Sensitive Habitat Area (ESHA).

Table 3. Tree Data Summary

Location	Tree Number	Species	Diameter (in)	Maximum Canopy Spread (ft)	Approximate Height	Photograph Number(s)	Health Rating	Vigor Rating	Aesthetics Rating	Index Score	Previously Topped?
Main Plant Middle E-W Row	1	*Eucalyptus globulus*	41	30	60	2825	A	A	B	4	Yes at 30 ft
Main Plant Middle E-W Row	2	*Eucalyptus globulus*	41	30	55	2826	A	A	B	4	Yes at 30 ft
Main Plant Middle E-W Row	3	*Eucalyptus globulus*	41	35	65	2827	C	C	C	2	Yes at 30 ft
Main Plant Middle E-W Row	4	*Eucalyptus globulus*	42	30	65	2827	C	C	C	2	Yes at 30 ft
Main Plant Middle E-W Row	5	*Eucalyptus globulus*	26	20	60	2828	C	C	C	2	Yes at 30 ft
Main Plant Middle E-W Row	6	*Eucalyptus globulus*	32	20	60	2829	C	C	C	2	Yes at 30 ft
Main Plant Middle E-W Row	7	*Eucalyptus globulus*	31	30	60	2829	C	C	C	2	Yes at 30 ft
Main Plant Middle E-W Row	8	*Eucalyptus globulus*	30	30	60	2829	C	C	C	2	Yes at 30 ft
Main Plant Middle E-W Row	9	*Eucalyptus globulus*	28	30	60	2829	D	D	D	1	Yes at 30 ft
Main Plant Middle E-W Row	10	*Eucalyptus globulus*	25	30	55	2030	D	D	D	1	Yes at 30 ft
Main Plant Middle E-W Row	11	*Eucalyptus globulus*	19	20	60	2030	D	D	D	1	Yes at 30 ft
Main Plant Middle E-W Row	12	*Eucalyptus globulus*	38	30	60	2030	B	C	C	2	Yes at 30 ft
Main Plant South N-S Row	13	*Eucalyptus globulus*	8	15	20	2031	B	B	D	2	Yes at 20 ft
Main Plant South N-S Row	14	*Eucalyptus globulus*	10	15	20	2031	B	B	D	2	Yes at 20 ft
Main Plant South N-S Row	15	*Eucalyptus globulus*	10,7	10	20	2031	B	B	D	2	Yes at 20 ft
Main Plant South N-S Row	16	*Eucalyptus globulus*	29	20	20	2833	D	D	D	1	Yes at 20 ft

Table 3. (Continued)

Location	Tree Number	Species	Diameter (in)	Maximum Canopy Spread (ft)	Approximate Height	Photograph Number(s)	Health Rating	Vigor Rating	Aesthetics Rating	Index Score	Previously Topped?
Main Plant South N-S Row	17	*Eucalyptus globulus*	17	15	40	2835	D	D	D	1	No
Main Plant South N-S Row	18	*Eucalyptus globulus*	16	15	40	2835	D	D	D	1	No
Main Plant South N-S Row	19	*Eucalyptus globulus*	23 at Base	30	20	2835	D	D	D	1	Yes at 15 ft
Main Plant South N-S Row	20	*Eucalyptus globulus*	27	35	60	2836	C	C	B	2	No
Main Plant South N-S Row	21	*Eucalyptus globulus*	41	35	60	2837	B	B	B	3	No
Main Plant South N-S Row	22	*Eucalyptus globulus*	8,8,7,11, 9,9	20	35	2837	D	D	D	1	Yes at 30 and 20 ft
Main Plant South N-S Row	23	*Eucalyptus globulus*	22	35	70	2837, 2838	B	B	B	3	No
Main Plant South N-S Row	24	*Eucalyptus globulus*	29	40	65	2838	B	B	B	3	No
Main Plant South N-S Row	25	*Eucalyptus globulus*	29	40	65	2838	B	B	B	3	No
Main Plant South N-S Row	26	*Eucalyptus globulus*	14	25	35	2838	C	B	D	2	Yes at 15 ft
Main Plant South N-S Row	27	*Eucalyptus globulus*	24	25	60	2838, 2839	C	C	D	2	Yes at 10 ft
Main Plant South N-S Row	28	*Eucalyptus globulus*	35	35	55	2839	C	C	C	2	No
Main Plant South N-S Row	29	*Eucalyptus globulus*	15,9	20	45	2839	C	C	D	2	No
Main Plant South N-S Row	30	*Eucalyptus globulus*	19	15	30	2839	C	C	D	2	Yes at 30 ft
Main Plant South N-S Row	31	*Eucalyptus globulus*	17	20	55	2839	D	D	D	1	No
Main Plant South N-S Row	32	*Eucalyptus globulus*	26	30	55	2839	B	B	B	3	No

Table 3. (Continued)

Location	Tree Number	Species	Diameter (in)	Maximum Canopy Spread (ft)	Approximate Height	Photograph Number(s)	Health Rating	Vigor Rating	Aesthetics Rating	Index Score	Previously Topped?
Main Plant South N-S Row	33	*Eucalyptus globulus*	33	25	50	2840	B	B	C	3	Yes at 30 ft
Main Plant South N-S Row	34	*Eucalyptus globulus*	21	30	45	2840	B	B	C	3	No
Main Plant South N-S Row	35	*Eucalyptus globulus*	31	35	60	2840	B	B	C	3	No
Main Plant South N-S Row	36	*Eucalyptus globulus*	26	30	60	2840	B	B	C	3	No
Main Plant South N-S Row	37	*Eucalyptus globulus*	18	30	50	2840	B	B	C	3	No
Main Plant South N-S Row	38	*Eucalyptus globulus*	19	25	45	2841	B	B	C	3	Yes at 30 ft
Main Plant South N-S Row	39	*Eucalyptus globulus*	24	25	45	2841	B	B	C	3	No
Main Plant South N-S Row	40	*Eucalyptus globulus*	29 at 3 ft	20	50	2841	C	C	D	2	No
Main Plant South N-S Row	41	*Eucalyptus globulus*	25	25	55	2841, 2842	C	D	C	2	No
Main Plant South N-S Row	42	*Eucalyptus globulus*	17	20	50	2842	C	C	D	2	No
Main Plant South N-S Row	43	*Eucalyptus globulus*	26	25	50	2842	C	C	D	2	No
Main Plant South N-S Row	44	*Eucalyptus globulus*	26	40	40	2842	B	B	C	3	Yes at 20 ft
Main Plant South N-S Row	45	*Eucalyptus globulus*	13	10	15	2843	B	B	D	2	Yes at 10 ft
Main Plant South N-S Row	46	*Eucalyptus globulus*	16	15	30	2843	D	D	D	1	Yes at 15 ft
Main Plant South N-S Row	47	*Eucalyptus globulus*	11	15	45	2843	D	D	D	1	No
Main Plant South N-S Row	48	*Eucalyptus globulus*	18	20	50	2844	D	D	D	1	No

Table 3. (Continued)

Location	Tree Number	Species	Diameter (in)	Maximum Canopy Spread (ft)	Approximate Height	Photograph Number(s)	Health Rating	Vigor Rating	Aesthetics Rating	Index Score	Previously Topped?
Main Plant South N-S Row	49	*Eucalyptus globulus*	27 at 2 ft	30	55	2844	B	B	B	3	No
Main Plant South N-S Row	50	*Eucalyptus globulus*	10	10	45	2845	C	C	D	2	Yes at 20 ft
Main Plant South N-S Row	51	*Eucalyptus globulus*	32,29	35	60	2846	A	A	B	4	No
Main Plant South N-S Row	52	*Eucalyptus globulus*	51	35	45	2846	D	D	D	1	No - Leaning, pruned
Main Plant South N-S Row	53	*Eucalyptus globulus*	9,9,9,10, 6	25	35	2847	B	B	D	2	Yes at ground
Main Plant along Railroad	54	*Cupressus macrocarpa*	33 at 1 ft	30	25	2848	B	B	B	3	Pruned lower branches
Main Plant along Railroad	55	*Cupressus macrocarpa*	27	40	25	2849, 2850	D	D	C	1	Deadwood
Chevron Pipeline Area E-W Row	56	*Eucalyptus globulus*	30	25	45	2851	B	B	D	2	Lopsided
Chevron Pipeline Area E-W Row	57	*Eucalyptus globulus*	40	30	60	2851	B	B	B	3	No
Chevron Pipeline Area E-W Row	58	*Eucalyptus globulus*	29	35	60	2852	C	C	C	2	No
Chevron Pipeline Area E-W Row	59	*Eucalyptus globulus*	28	30	55	2852	C	C	C	2	No
Chevron Pipeline Area E-W Row	60	*Eucalyptus globulus*	30	35	60	2852	C	C	C	2	No
Chevron Pipeline Area E-W Row	61	*Eucalyptus globulus*	20	10	25	2852	D	D	D	1	Yes at 10 ft
Chevron Pipeline Area E-W Row	62	*Eucalyptus globulus*	23	15	30	2852	D	D	D	1	Yes at 20 ft

Decommissioning activities at the Project Site including belowground pipeline removals, surface asphalt and concrete slab removals, and remedial soil excavations may be expected to encroach into the critical root zones of other trees not evaluated in Tables 2 and 3 above, but these additional trees would not be expected to require removal. Table 4 provides an estimate of approximately 296 trees including 232 blue gum, 35 athel tamarisk, 10 coast live oak, 7 Chinese elm, 7 dawn redwood, and 5 Monterey cypress trees that may undergo varying degrees of root zone encroachment according to a comparison of the tree inventory data and Figures 7.1-2, 7.1-3, and 7.1-4 in the Project Description (Padre, October 2021). Tree protection measures for trees undergoing encroachment are provided in Section 5 below.

Table 4. Tree Impact (Encroachment) Estimation for Decommissioning Activities

Location	Species	Estimated Quantity	Proposed Activity		
			Pipeline Removal	Asphalt or Concrete Removal	Remedial Soil Excavation
Former Marketing Terminal Area	Blue gum (*E. globulus*)	75		X	X
Former Marketing Terminal Area	Chinese elm (*U. parvifolia*)	7		X	X
Shop & Maintenance Area	Blue gum (*E. globulus*)	55	X	X	X
Shop & Maintenance Area	Coast live oak (*Q. agrifolia*)	10	X		
Shop & Maintenance Area	Dawn redwood (*M. glyptostroboides*)	7	X		
MSRC Lease Area	Blue gum (*E. globulus*)	70		X	X
Main Plant Area	Blue gum (*E. globulus*)	20	X	X	
Main Plant Area	Athel tamarisk (*T. aphylla*)	35	X	X	X
Main Plant Area	Monterey cypress (*C. macrocarpa*)	1	X		
Chevron Pipeline Area	Blue gum (*E. globulus*)	12	X	X	X
Chevron Pipeline Area	Monterey cypress (*C. macrocarpa*)	4	X	X	X
Total:		**296**			

5.0 TREE PROTECTION MEASURES

Trees that may be encroached upon, but not removed by decommissioning activities would be expected to survive as long as the encroachment is not too severe (i.e., impacts to their root zone, trunks or canopy are minimized), and sufficient measures are taken to protect the trees in place. The following protection measures are proposed to ensure their survival:

- If feasible, grading plans should be adjusted to avoid the critical root zone of some or all of these trees. If some or all of these trees are still considered candidates for encroachment upon final approval of the grading plans, temporary staking or flagging will be placed along the grading limits prior to initiation of construction for clear identification and to ensure tree impacts are minimized.

- Tree protection areas will be marked in the field in collaboration with a certified arborist or qualified biologist using fencing and/or flagging, which may coincide or overlap with the staked/flagged grading limits.

- All ground disturbance within 10 feet of the canopy dripline of affected trees will be monitored by a certified arborist or qualified biologist with tree care experience.

- Staging of equipment and vehicles shall be located outside of the tree protection areas. Placement of heavy equipment for earthwork shall be as far away from the tree protection zones as feasible and should never be less than 6 feet from the trunk of each specimen tree.

- Overhead branches that conflict with Project activities may be pruned by a qualified tree trimmer according to International Society of Arboriculture (ISA) pruning standards.

- Excavation activities within tree protection areas will be allowed if soil sampling indicates soils exceed remediation targets and work is conducted with hand tools only, including hydro-excavation. To the extent feasible, hydro-excavation shall not be used in direct contact of roots to avoid damaging the root epidermis and root hair connections of smaller absorptive roots.

- If cutting of roots that are intertwined with belowground features is required, roots shall be saw-cut to avoid tearing, and conducted as far from the trunk as possible.

- Soil removed from critical root zones will be replaced with imported clean soil within 48 hours of completion of excavation. If excavations are required to remain open for greater than 48 hours, roots will be temporarily wrapped or draped in burlap and kept moist until the excavation is backfilled.

- All trees affected by excavation within the critical root zone will be monitored quarterly to detect any loss of vigor.

- Willows within the FSBA and DA4 will be preserved through complete avoidance of the Operational Area in which the willow thicket occurs, or if necessary, temporary installation of construction fencing will occur around each stand of trees throughout the duration of work.

The City of Carpinteria General Plan and Local Coastal Plan encourages the planting of native trees to replace non-native tree removals. The Project Site currently supports approximately 225 coast live oak (*Quercus agrifolia*), 80 western sycamore (*Platanus racemosa*), 52 blue elderberry (*Sambucus nigra ssp. caerulea*), and 135 toyon (*Heteromeles arbutifolia*) trees (or shrubs that may become trees). Replacement of non-native trees with these native species at a ratio of 1:1 or greater is recommended in areas that would expand native vegetation onsite, or possibly to create new habitat patches within portions of the property that are not slated for any developmental purpose. No monarch butterfly roosting habitat trees (e.g., blue gum trees within the BZA) are proposed for removal; therefore, replacement of tree removals with additional non-native trees such as blue gum are not recommended or proposed.

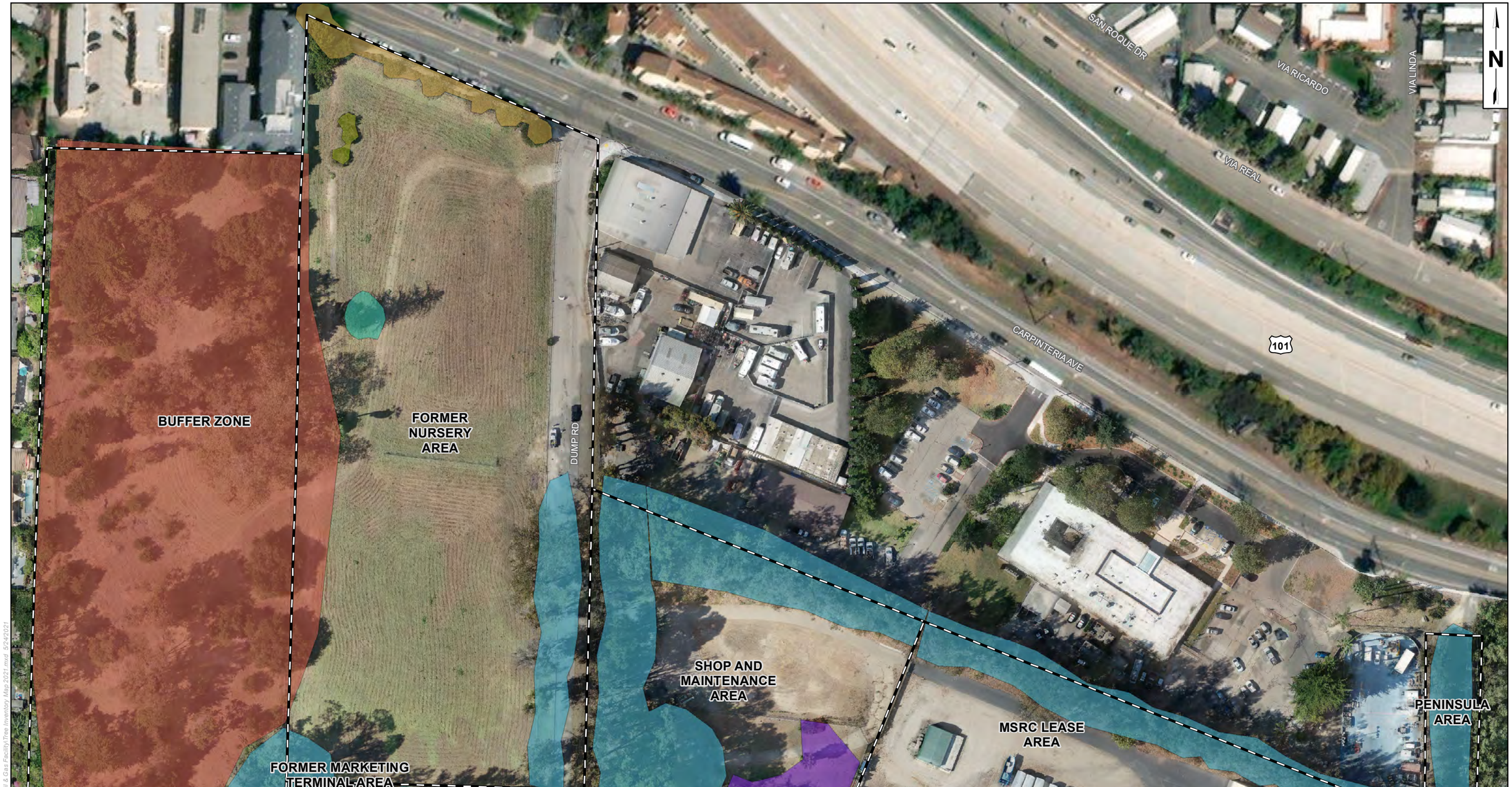
6.0 PREPARERS

Data collection was supervised and/or collected by, and the Tree Report was prepared by Mr. Chris Dunn, a biologist with 23 years of professional experience, including over 10 years as an International Society of Arboriculture (ISA) Certified Arborist. Collection of field data was also performed by Michaela Hoffman, Shannon Gonzales and Ryan Newkirk, professional biologists, each with tree evaluation and scientific data collection experience.

December 14, 2021

Chris Dunn
ISA Certified Arborist No. WE-9525A
(805) 644-2220 ext. 12

Tree Inventory Map



LEGEND:

Operational Area

Tree Types:

- Coyote Brush
- Cypress, Sycamore, Ash, & Sage
- Eucalyptus
- Island Pine
- Mixed Woodland
- Tam, Orn, Palm, & Oak

MAP EXTENT:

0 50 100
FEET

Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA
OIL AND GAS PROCESSING FACILITY PROPERTIES
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: May 2021

TREE INVENTORY MAP

FIGURE 1

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Oil & Gas Facility\Tree Inventory Map 2021.mxd 5/24/2021

LEGEND:

- Operational Area
- (#) Tagged Tree Location

Tree Types:

- Ash, Avocado, & Fruit
- Avocado
- Coast Live Oak
- Cypress
- Dawn Redwood
- Eucalyptus
- Eucalyptus & Elm
- Eucalyptus & Pine
- Eucalyptus & Tam
- Fruit
- Mixed Woodland
- Orn
- Tam, Orn, Palm, & Oak
- Willow

MAP EXTENT:

0 50 100
FEET

Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA
OIL AND GAS PROCESSING FACILITY PROPERTIES
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: May 2021

TREE INVENTORY MAP

FIGURE 2

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Oil & Gas Facility\Tree Inventory_Map 2021.mxd 5/24/2021

LEGEND:

- Operational Area
- # Tagged Tree Location

Tree Types:

- Arroyo Willow Thicket
- Cypress
- Eucalyptus
- Eucalyptus & Elm
- Eucalyptus & Pine
- Mixed Woodland
- Sycamore
- Willow

MAP EXTENT:

0 50 100
FEET

Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

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TREE INVENTORY MAP

FIGURE 3

Z:\GIS Projects\GIS MapsMap Project\Carpinteria Oil & Gas Facility\Tree Inventory Map 2021.mxd 5/24/2021

Tree Survey Data

COGPC Tree Tally Estimate

Operational Area	Blue gum	Monterey pine	Aleppo pine	Monterey cypress	Coast live oak	Western sycamore	Arroyo willow	Fan palm	Norfolk Island pine	Victorian box	Myoporum	Brazilian pepper	Oregon ash	tamarisk	dawn redwood	avocado	Sydney golden wattle	Chinese elm	Toyon	Fruit	Ornamental	Elderberry	Total per area:
Buffer Zone*	100	30		13	135	30	1			20	10	5											344
Chevron Pipeline Area				4																			4
Chevron Pipeline Area E-W row	19																1						20
Chevron Pipeline Area N-S row	50																						50
Drainage Area No. 4*	57	10		2	55	30	3	1											131			33	322
Former Marketing Terminal Area north E-W row	54									3						1							58
Former Marketing Terminal Area N-S rows	28			1													1	7					37
Former Nursery Area*	10			2		4		1	1				1										19
Former Sandblast Area				2	1	5	16																24
Main Plant				3	1															1			5
Main Plant-Middle E-W row	12																						12
Main Plant-North E-W row	18									1				36									55
Main Plant-North N-S row	22																						22
Main Plant-South N-S row	41																						41
MSRC Lease Area E-W row	70													2			1				1		74
MSRC Lease Area N-S row					1																		1
Peninsula Area	45													34									79
Pier Parking Lot				1	3	8																	12
Pipeline Landing Area	23	1	1	10		6	31			1													73
Railroad Ditch Area			1																				1
Shop and Maintenance Area		1			25			2		5			8	18	7	4			1	5	3		79
Shop and Maintenance E-W row	44													3									47
Shop and Maintenance N-S row	63				1																		64
																						subtotal	**1443**
Additional Survey Areas																							
Former Marketing Terminal Area-Buffer Zone North N-S row	109																						109
Former Marketing Terminal Area-Buffer Zone South N-S row	67				3	1				1							8						80
Former Market Terminal Area Restoration Area	2																1		3			19	25
																						subtotal	**214**
	834	42	2	38	225	84	51	4	1	31	10	5	9	93	7	5	12	7	135	6	4	52	**1657**
Corrected redundancy:	677	42	2	38	225	84	51	4	1	31	10	5	9	93	7	5	12	7	135	6	4	52	**1500**

Protected trees include: All trees >6"dbh/6'height or any native trees of any size for biological value. Field verification may discount a small portion of this estimate.

*: Data from 2004 tree survey and 2015 monitoring report. No new survey proposed due to lack of proposed work in BZ.

Tree Survey Data. Carpinteria Oil & Gas Processing Facility, May 14, 2021.

Location	Tree Number	Species	Diameter (in)	Maximum Canopy Spread (ft)	Approximate Height	Photograph number(s)	Health Rating		Vigor Rating		Aesthetics Rating		Index Score	Previously Topped?	=4	=3	=2	=1	
Main Plant Middle E-W Row	1	Eucalyptus globulus	41	30	60	2825	A	4	A	4	B	3	4	Yes at 30 ft		1			
Main Plant Middle E-W Row	2	Eucalyptus globulus	41	30	55	2826	A	4	A	4	B	3	4	Yes at 30 ft		1			
Main Plant Middle E-W Row	3	Eucalyptus globulus	41	35	65	2827	C	2	C	2	C	2	2	Yes at 30 ft				1	
Main Plant Middle E-W Row	4	Eucalyptus globulus	42	30	65	2827	C	2	C	2	C	2	2	Yes at 30 ft				1	
Main Plant Middle E-W Row	5	Eucalyptus globulus	26	20	60	2828	C	2	C	2	C	2	2	Yes at 30 ft				1	
Main Plant Middle E-W Row	6	Eucalyptus globulus	32	20	60	2829	C	2	C	2	C	2	2	Yes at 30 ft				1	
Main Plant Middle E-W Row	7	Eucalyptus globulus	31	30	60	2829	C	2	C	2	C	2	2	Yes at 30 ft				1	
Main Plant Middle E-W Row	8	Eucalyptus globulus	30	30	60	2829	C	2	C	2	C	2	2	Yes at 30 ft				1	
Main Plant Middle E-W Row	9	Eucalyptus globulus	28	30	60	2829	D	1	D	1	D	1	1	Yes at 30 ft					1
Main Plant Middle E-W Row	10	Eucalyptus globulus	25	30	55	2030	D	1	D	1	D	1	1	Yes at 30 ft					1
Main Plant Middle E-W Row	11	Eucalyptus globulus	19	20	60	2030	D	1	D	1	D	1	1	Yes at 30 ft					1
Main Plant Middle E-W Row	12	Eucalyptus globulus	38	30	60	2030	B	3	C	2	C	2	2	Yes at 30 ft				1	
Main Plant South N-S Row	13	Eucalyptus globulus	8	15	20	2031	B	3	B	3	D	1	2	Yes at 20 ft				1	
Main Plant South N-S Row	14	Eucalyptus globulus	10	15	20	2031	B	3	B	3	D	1	2	Yes at 20 ft				1	
Main Plant South N-S Row	15	Eucalyptus globulus	10,7	10	20	2031	B	3	B	3	D	1	2	Yes at 20 ft				1	
Main Plant South N-S Row	16	Eucalyptus globulus	29	20	20	2833	D	1	D	1	D	1	1	Yes at 20 ft					1
Main Plant South N-S Row	17	Eucalyptus globulus	17	15	40	2835	D	1	D	1	D	1	1	No					1
Main Plant South N-S Row	18	Eucalyptus globulus	16	15	40	2835	D	1	D	1	D	1	1	No					1
Main Plant South N-S Row	19	Eucalyptus globulus	23 at Base	30	20	2835	D	1	D	1	D	1	1	Yes at 15 ft					1
Main Plant South N-S Row	20	Eucalyptus globulus	27	35	60	2836	C	2	C	2	B	3	2	No				1	
Main Plant South N-S Row	21	Eucalyptus globulus	41	35	60	2837	B	3	B	3	B	3	3	No			1		
Main Plant South N-S Row	22	Eucalyptus globulus	8,8,7,11,9,9	20	35	2837	D	1	D	1	D	1	1	Yes at 30 and 20 ft					1
Main Plant South N-S Row	23	Eucalyptus globulus	22	35	70	2837, 2838	B	3	B	3	B	3	3	No			1		
Main Plant South N-S Row	24	Eucalyptus globulus	29	40	65	2838	B	3	B	3	B	3	3	No			1		
Main Plant South N-S Row	25	Eucalyptus globulus	29	40	65	2838	B	3	B	3	B	3	3	No			1		
Main Plant South N-S Row	26	Eucalyptus globulus	14	25	35	2838	C	2	B	3	D	1	2	Yes at 15 ft				1	
Main Plant South N-S Row	27	Eucalyptus globulus	24	25	60	2838, 2839	C	2	C	2	D	1	2	Yes at 10 ft				1	
Main Plant South N-S Row	28	Eucalyptus globulus	35	35	55	2839	C	2	C	2	C	2	2	No				1	
Main Plant South N-S Row	29	Eucalyptus globulus	15,9	20	45	2839	C	2	C	2	D	1	2	No				1	
Main Plant South N-S Row	30	Eucalyptus globulus	19	15	30	2839	C	2	C	2	D	1	2	Yes at 30 ft				1	
Main Plant South N-S Row	31	Eucalyptus globulus	17	20	55	2839	D	1	D	1	D	1	1	No					1
Main Plant South N-S Row	32	Eucalyptus globulus	26	30	55	2839	B	3	B	3	B	3	3	No			1		
Main Plant South N-S Row	33	Eucalyptus globulus	33	25	50	2840	B	3	B	3	C	2	3	Yes at 30 ft			1		
Main Plant South N-S Row	34	Eucalyptus globulus	21	30	45	2840	B	3	B	3	C	2	3	No			1		
Main Plant South N-S Row	35	Eucalyptus globulus	31	35	60	2840	B	3	B	3	C	2	3	No			1		
Main Plant South N-S Row	36	Eucalyptus globulus	26	30	60	2840	B	3	B	3	C	2	3	No			1		
Main Plant South N-S Row	37	Eucalyptus globulus	18	30	50	2840	B	3	B	3	C	2	3	No			1		
Main Plant South N-S Row	38	Eucalyptus globulus	19	25	45	2841	B	3	B	3	C	2	3	Yes at 30 ft			1		
Main Plant South N-S Row	39	Eucalyptus globulus	24	25	45	2841	B	3	B	3	C	2	3	No			1		
Main Plant South N-S Row	40	Eucalyptus globulus	29 at 3 ft	20	50	2841	C	2	C	2	D	1	2	No				1	
Main Plant South N-S Row	41	Eucalyptus globulus	25	25	55	2841, 2842	C	2	D	1	C	2	2	No				1	
Main Plant South N-S Row	42	Eucalyptus globulus	17	20	50	2842	C	2	C	2	D	1	2	No				1	
Main Plant South N-S Row	43	Eucalyptus globulus	26	25	50	2842	C	2	C	2	D	1	2	No				1	
Main Plant South N-S Row	44	Eucalyptus globulus	26	40	40	2842	B	3	B	3	C	2	3	Yes at 20 ft			1		
Main Plant South N-S Row	45	Eucalyptus globulus	13	10	15	2843	B	3	B	3	D	1	2	Yes at 10 ft				1	
Main Plant South N-S Row	46	Eucalyptus globulus	16	15	30	2843	D	1	D	1	D	1	1	Yes at 15 ft					1
Main Plant South N-S Row	47	Eucalyptus globulus	11	15	45	2843	D	1	D	1	D	1	1	No					1
Main Plant South N-S Row	48	Eucalyptus globulus	18	20	50	2844	D	1	D	1	D	1	1	No					1
Main Plant South N-S Row	49	Eucalyptus globulus	27 at 2 ft	30	55	2844	B	3	B	3	B	3	3	No			1		
Main Plant South N-S Row	50	Eucalyptus globulus	10	10	45	2845	C	2	C	2	D	1	2	Yes at 20 ft				1	
Main Plant South N-S Row	51	Eucalyptus globulus	32,29	35	60	2846	A	4	A	4	B	3	4	No		1			
Main Plant South N-S Row	52	Eucalyptus globulus	51	35	45	2846	D	1	D	1	D	1	1	No - Leaning, pruned					1
Main Plant South N-S Row	53	Eucalyptus globulus	9,9,9,10,6	25	35	2847	B	3	B	3	D	1	2	Yes at ground				1	
Main Plant along Railroad	54	Cupressus macrocarpa	33 at 1 ft	30	25	2848	B	3	B	3	B	3	3	Pruned lower branches			1		
Main Plant along Railroad	55	Cupressus macrocarpa	27	40	25	2849, 2850	D	1	D	1	C	2	1	Deadwood					1
Chevron Pipeline Area E-W Row	56	Eucalyptus globulus	30	25	45	2851	B	3	B	3	D	1	2	Lopsided				1	
Chevron Pipeline Area E-W Row	57	Eucalyptus globulus	40	30	60	2851	B	3	B	3	B	3	3	No (CATO Nesting)			1		
Chevron Pipeline Area E-W Row	58	Eucalyptus globulus	29	35	60	2852	C	2	C	2	C	2	2	No				1	
Chevron Pipeline Area E-W Row	59	Eucalyptus globulus	28	30	55	2852	C	2	C	2	C	2	2	No				1	
Chevron Pipeline Area E-W Row	60	Eucalyptus globulus	30	35	60	2852	C	2	C	2	C	2	2	No				1	
Chevron Pipeline Area E-W Row	61	Eucalyptus globulus	20	10	25	2852	D	1	D	1	D	1	1	Yes at 10 ft					1
Chevron Pipeline Area E-W Row	62	Eucalyptus globulus	23	15	30	2852	D	1	D	1	D	1	1	Yes at 20 ft					1
																3	16	27	16

Tree Photographic Appendix

Photo 1. Tree 1, *Eucalyptus globulus* (IMG_2825_Tree1.JPG).

Photo 2. Tree 2, *Eucalyptus globulus* (IMG_2826_Tree2.JPG).

Photo 3. Trees 3 and 4, *Eucalyptus globulus* (IMG_2827_Trees3&4).

Photo 4. Trees 4, 5, and 6, *Eucalyptus globulus* (IMG_2828_Tree5 middle).

Photo 5. Trees 6, 7, 8 and 9, *Eucalyptus globulus* (IMG_2829_Trees6-9).

Photo 6. Trees 10, 11, and 12, *Eucalyptus globulus* (IMG_2830_Trees10-12).

Photo 7. Trees 13, 14, and 15, *Eucalyptus globulus* (IMG_2831_Trees13-15).

Photo 8. Tree 16, *Eucalyptus globulus* (IMG_2833_Tree16).

Photo 9. Trees 17, 18, and 19, *Eucalyptus globulus* (IMG_2835_Trees17-19).

Photo 10. Trees 18, 19, 20, and 21, *Eucalyptus globulus* (IMG_2836_Tree20).

Photo 11. Trees 21, 22, 23, and 24, *Eucalyptus globulus* (IMG_2837_Trees21-23).

Photo 12. Trees 23, 24, 25, 26, and 27, *Eucalyptus globulus* (IMG_2838_Trees23-27).

Photo 13. Trees 27, 28, 29, 30, 31, and 32, *Eucalyptus globulus* (IMG_2839_Trees27-32).

Photo 14. Trees 33, 34, 35, 36, and 37, *Eucalyptus globulus* (IMG_2840_Trees33-37).

Photo 15. Trees 38, 39, 40, and 41, *Eucalyptus globulus* (IMG_2841_Trees38-41).

Photo 16. Trees 41, 42, 43, and 44, *Eucalyptus globulus* (IMG_2842_Trees41-44).

Photo 17. Trees 45, 46, and 47, *Eucalyptus globulus* (IMG_2843_Trees45-47).

Photo 18. Trees 48 and 49, *Eucalyptus globulus* (IMG_2844_Trees48,49).

Photo 19. Tree 50 (in center of photo), *Eucalyptus globulus* (IMG_2845_Tree50).

Photo 20. Trees 49, 50, 51, and 52, *Eucalyptus globulus* (IMG_2846_Trees49-52).

Photo 21. Tree 53, *Eucalyptus globulus* (IMG_2847_Tree53).

Photo 22. Tree 54, *Cupressus macrocarpa* (IMG_2848_Tree54).

Photo 23. Tree 55, *Cupressus macrocarpa* (IMG_2850_Tree55).

Photo 24. Trees 56, 57, and 58, *Eucalyptus globulus* (IMG_2851_Trees56-58).

Photo 25. Trees 58, 59, 60, 61, and 62, *Eucalyptus globulus* (IMG_2852_Trees58-62).

Appendix C-3

Tree Maintenance and Hazard Reduction Plan

TREE MAINTENANCE AND HAZARD REDUCTION PLAN

CARPINTERIA OIL AND GAS PROCESSING FACILITIES
CARPINTERIA, SANTA BARBARA COUNTY, CALIFORNIA

Project No. 1901-0505

Prepared for:

Chevron U.S.A
3916 State Street, Suite 200
Santa Barbara, CA 93105

Prepared by:

Padre Associates, Inc.
1861 Knoll Drive
Ventura, California 93003

JUNE 2023
REV. 1

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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LIST OF ATTACHMENTS

1.0 PLAN PURPOSE AND SUMMARY

This Tree Maintenance and Hazard Reduction Plan (Plan) was prepared at the request of Chevron U.S.A (Chevron) to support a significant tree maintenance activity for the elimination of safety hazards at the Carpinteria Oil and Gas Processing Facility (Project Site), located in the City of Carpinteria, California. Recent storms during the 2022-2023 winter season have resulted in significant tree instability and several tree failures (a total of 12 trees to date) at the Project Site or falling onto the Project Site from adjacent land, with targets being subject to hazardous conditions, including high voltage transmission lines, buildings, pedestrians, and vehicles.

As a result, Chevron elected to have the trees evaluated for risk of failure and determine proper mitigation measures to reduce or eliminate hazardous conditions. This evaluation was conducted by an International Society of Arboriculture (ISA) Certified Arborist and Certified Tree Care Professional (Branch Out Tree Care). A total of approximately 608 trees were evaluated throughout 12 areas within the Project Site to identify the needs for maintenance (see Attachment A). The evaluation identified that in some instances, the cause of recent tree failures and potential additional failures was high soil saturation in conjunction with structural weakness caused by fungal root decay. The evaluation also determined that many trees that have been topped in the past have weakly connected sprout heads and are also prone to failure from above.

The Project Site supports a total of approximately 1,500 trees comprised of at least 21 species; 45 percent of which (677 trees) are non-native blue gum (*Eucalyptus globulus*). Completion of tree maintenance activities at the Project Site are expected to require major pruning or topping of approximately 522 blue gum trees, and removal of approximately 22 dead, leaning or decaying blue gum or athel tamarisk (*Tamarix aphylla*) trees, both species of which are planted specimens and are non-native or introduced to the region. The total tree work is on approximately 544 trees, or 36 percent of the Project Site's entire tree population.

Approximately 110 trees planned for tree maintenance are located along the southeast margin of the Buffer Zone, within or immediately adjacent to city-defined Environmentally Sensitive Habitat Area (ESHA), but none of these trees are planned for removal. According to conversations onsite with Branch Out Tree Care, trees within this area exhibiting hazardous conditions would be topped and/or trimmed of lateral branches extending toward sensitive targets below (e.g., the Former Marketing Terminal Area and the Union Pacific Railroad), but their remaining lower canopy would be left intact to maintain suitable cover and visual screening. The larger proportion of trees in ESHA would be protected in place to maintain monarch butterfly, avian and other wildlife habitat.

A qualified biologist has conducted pre-activity surveys and will provide regular oversight for protection of nesting birds or other sensitive biological resources.

2.0 TREE PRESERVATION AND PROTECTION GUIDELINES

An assessment of potential tree impacts associated with the proposed Plan has been conducted to ensure compliance with the City of Carpinteria General Plan and Local Coastal Plan. However, implementation of the Plan for the protection of life and property is paramount, as there are significant public and workforce safety hazards associated with the tree instability observed at the Project Site. To the extent feasible, the Plan will comply with City Objectives and Guidelines.

3.0 NESTING BIRD PROTECTIONS

The U.S. Fish and Wildlife Service (USFWS) administers the Federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The purpose of the MBTA is the "establishment of a federal prohibition, unless permitted by regulations, to pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention for the protection of migratory birds, or any part, nest or egg of any such bird" (16 USC 703). Implementing regulations at 50 CFR 10 list the migratory birds covered under the MBTA.

The California Department of Fish and Wildlife (CDFW) administers State laws designed to protect wildlife and plants, including those laws stated within Fish and Game Code (FGC) Section 3511, 3503, 3503.5. Under Section 3511 of the Fish and Game Code, CDFG designates species that are afforded "fully protected" status. Under this protection, designated species can only be taken or possessed with a permit. Fish and Game Code 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird. Section 3503.5 of the Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest of eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Pre-activity biological surveys were performed by Padre Associates, Inc. on Friday, Monday, and Tuesday, March 3, 6, and 7, 2023, with follow-up visits on March 20, March 27 through 31, April 1, 3, 4, 10, 12, 13, 18, and 24, and May 19, and 25, 2023. Thirty-six (36) of the 39 bird species observed during the pre-activity biological surveys are protected by the MBTA and FGC 3503 and 3503.5 when nesting (see Attachment 2). The Plan will uphold Federal and State nesting bird protections throughout its implementation, as described in Sections 4 and 5 below.

4.0 PLAN METHODOLOGY AND IMPLEMENTATION

Implementation of the proposed Plan includes the following tasks in the general order they are conducted:

Hazard Evaluation. Branch Out Tree Care conducted a field evaluation to classify risk of tree failures for recommendations to prioritize tree maintenance activities. A total of approximately 608 trees were evaluated throughout 12 areas within the Project Site to identify the needs for maintenance. A majority of these trees have undergone previous topping (and have weakly attached regenerated branches that are prone to failure), and have signs of root and decay fungi, as well as substantial decay cavities. The evaluation was performed in January and February 2023 following the failure of several trees, including some that contacted power transmission and communications lines and narrowly missed the publicly accessible Dump Road. Additional tree failures occurred following subsequent storm events, which were followed up by additional tree evaluations in March 2023.

Land Survey. WM Surveys, Inc. conducted a land survey in March 2023 to map the location of the trees planned for maintenance activities, focusing on the highest priority trees, which are provided on the attached maps.

Biological Survey. Padre conducted a pre-activity biological survey of the Project Site on March 3, 6, and 7, 2023, focusing mainly on nesting birds, and in particular, raptor (bird-of-prey), activity. Follow-up site visits were performed on March 20, 2023, March 27 through 31, April 1, 3, 4, 10, 12, 13, 18, and 24, and May 19 and 25, 2023. Nesting bird activity was observed by Anna's hummingbird, bushtit, lesser goldfinch, red-tailed hawk (including one active nest which became unoccupied in mid-May, and one inactive nest [occupied in previous years]), California scrub-jay, hooded oriole, American crow, and western bluebird, and these locations are provided on the attached maps. As time progresses, these nests will become inactive, but additional nesting bird activity may be observed throughout the spring and summer months. Bird nest protection measures are provided in Section 5 below.

Tree Maintenance Activities. Branch Out Tree Care will implement tree maintenance activities according to their initial and follow-up evaluations after several additional trees failed. Work is scheduled to begin as soon as April 2023 pending approval, focusing first on actual tree failures and the trees with the highest potential risk of failure in areas where a target and/or threat to public safety exists. The project goal is to minimize the risk of additional tree failures, including failure at ground level and failure of large limbs aloft. Generally, the recommended method to accomplish this goal is to "top" the trees at a height of approximately 40 to 50 feet above ground level, and to trim lateral branches overhanging sensitive targets below by 12 to 15 feet. In areas adjacent to wildlife habitat, vegetated branches in the lower canopy of the trees will be left intact to maintain suitable cover and visual screening. A total of 21 blue gum and one (1) tamarisk trees, most of which are dead or dying, will be completely removed due to high-risk conditions and sensitive targets nearby. A biologist will provide regular oversight to survey and monitor for nesting bird activity and provide direction on avoiding disruption, nest abandonment, or direct mortality.

A crane will service the tree trimming crew, and where high voltage transmission lines are present, they will be de-energized. As the tree maintenance work is performed, areas will be closed to pedestrians and vehicles that are not part of the work. At times, these closures may impact public access to portions of Dump Road. All woody material will be chipped and stockpiled at various locations onsite for later reuse and spreading on unpaved road access routes within the Buffer Zone or for shipping offsite to a recycling/compositing facility. Table 1 below provides a tally of the trees requiring maintenance in each of the 12 areas evaluated within the Project Site. The locations of these trees are provided on the attached Tree Maintenance Inventory Map.

Table 1. Tree Maintenance Activities Planned at the Project Site

Project Area	Tree Common Name (Scientific Name)	Tally	Planned Work	Site Hazards & Sensitive Targets
1. Dump Road	Blue Gum (*Eucalyptus globulus*)	142	Reduce height to approximately 50-feet and side trim large lateral branches by 12-15 feet with crane. Remove 2 trees.	High-voltage transmission lines, pedestrians, vehicular traffic
2. Tank 861 Area	Blue Gum (*Eucalyptus globulus*)	18	Reduce height of 14 trees to approximately 50-feet and side trim large lateral branches by 12-15 feet with crane. Remove 1 tree with visible wood decay fungi to ground level.	Valves and electrical equipment, and storage tank. Gate 2 will be temporarily blocked.
3. East Property Line	Blue Gum (*Eucalyptus globulus*)	41	Reduce height to approximately 50-feet and side trim large lateral branches by 12-15 feet with crane.	High-voltage transmission lines along adjacent property.
4. Center East Property	Blue Gum (*Eucalyptus globulus*)	12	Reduce height to approximately 50-feet and side trim large lateral branches by 12-15 feet with crane.	Pipelines and equipment, brick structure.
5. Ingersoll Rand Building	Blue Gum (*Eucalyptus globulus*)	4	Reduce height to approximately 50-feet and side trim large lateral branches by 12-15 feet with crane.	Pipelines and equipment, high voltage lines, large brick structure.
6. North Property Area	Blue Gum (*Eucalyptus globulus*)	7	Reduce height to approximately 50-feet and side trim large lateral branches by 12-15 feet with crane. Remove 1 leaning tree.	MSRC building.
7. Mid-Plant Area	Blue Gum (*Eucalyptus globulus)* Athel Tamarisk *(Tamarix aphylla)*	2	Reduce height of blue gum to approximately 50-feet and remove tamarisk leaning on the blue gum.	Leaning tree and associated pressure points.

Project Area	Tree Common Name (Scientific Name)	Tally	Planned Work	Site Hazards & Sensitive Targets
8. Communication Line Pole Area (north of Tank 861)	Blue Gum (*Eucalyptus globulus*)	8	Reduce height to approximately 50-feet and side trim large lateral branches by 12-15 feet with crane.	Communication line and supporting pole. Equipment in area will need to be moved.
9. Gate 1 Entry Area	Blue Gum (*Eucalyptus globulus*)	13	Reduce height to approximately 50-feet and side trim large lateral branches by 12-15 feet with crane.	Gates, fencing, high voltage lines, Dump Road traffic. Gate 1 will be closed temporarily. Dump Rd. closed intermittently and for up to 2 days.
10. Shorebase Area	Blue Gum (*Eucalyptus globulus*)	105 of 155	Reduce height to approximately 50-feet and side trim large lateral branches by 12-15 feet with crane, while considering raptor nesting protection.	Pipes and equipment. Known raptor nest trees and buffer require protection. Adjacent trees to be protected in place as ESHA.
11. MSRC North Property Line Area	Blue Gum (*Eucalyptus globulus*)	133	Reduce height of trees to approximately 40-feet and side trim large lateral branches by 12-15 feet with crane. Remove 18 failing, failed, or dead trees.	City Hall parking, electrical and communication lines, gas valve.
12. Buffer Zone	Blue Gum (*Eucalyptus globulus*) (Others present)	59 of 73	Reduce height of trees in gas valve and railroad track area to approximately 50-feet and side trim large lateral branches by 12-15 with crane. Two (2) trees in northwest buffer zone will be reduced in height to approximately 65-feet to contain any tree failures to within buffer zone.	Gas valve, railroad tracks, pedestrians on railroad tracks. Adjacent trees to be protected in place as ESHA.
Total:		**544 of 608**	**522 Topping/Pruning 22 Removals**	

5.0 RESOURCE PROTECTION MEASURES

The following protection measures will be implemented to ensure compliance with ISA standards, and nesting bird regulations (MBTA and FGC 3503 and 3503.5). The measures are intended to provide a prescriptive formula addressing trees that require immediate attention, while balancing the need for protections during the nesting season:

- Proposed work areas will be predetermined by the Project's Certified Arborist/Certified Tree Care Specialist utilizing the ISA Tree Risk Assessment methodology. Trees that threaten public safety or significant property damage will be the initial priority for proposed work activities. High priority trees outside of nesting bird protective buffers will be the focus of current maintenance activities and the remainder of the work activities will be reserved to a time after the active nesting season.

- Tree pruning shall be conducted by a qualified tree trimmer according to International Society of Arboriculture (ISA) Best Management Practices for at-risk trees.

- All native trees at the Project Site will be afforded protection from work activities on nearby non-native trees, including direction of felled limbs, staging of equipment, fueling and maintenance, and parking vehicles.

- A qualified biologist will perform a thorough nesting bird survey one week prior to the start of work as a follow-up to the previous surveys already performed. Ongoing breeding/nesting bird surveys will be performed by a qualified biologist throughout the duration of the project as the crew works through different areas.

- Active bird nests will be provided temporary protective buffers of a minimum of 75 feet for passerines, depending on species (some species are more acclimated to human activities than others), and 500 feet for raptors. At the discretion of the biologist, temporary buffers may be increased to avoid disturbing nesting behavior. Work within the buffers will not be initiated until a biologist has confirmed that nesting is complete, and the juveniles have fledged and are independent of the nest.

- A permanent buffer of 25-feet will be provided around raptor nest trees to protect the nests from increased wind exposure. Only very limited tree maintenance will be performed within this buffer, and only when the nests are inactive.

- A Chevron representative and the tree maintenance crew will be provided a biological orientation by a biologist to discuss bird breeding/nesting behavior and required protections.

- Trees on the western edge of the north-south windrow in the Buffer Zone and Drainage Area No. 4 areas will be protected in place to ensure protection of historical monarch butterfly roosting areas.

- The biologist will visit the Project Site and be in direct contact with the tree trimming crew at least once each day for the duration of the activity. Prior to initiating tree maintenance at each location, a tree care specialist will inspect the tree and its surroundings while ascending in the crane and obtaining aerial vantage points. If potential or known breeding/nesting bird activity is observed, the crew will safely stop work, and their findings will be discussed with the biologist before proceeding. If nesting is confirmed, the crew will move to another location outside the buffer established by the biologist.

- Areas of active nest activity will be avoided at all times unless significant danger from a tree fall is evident that threatens public safety or significant property damage. In the rare instance that the hazard tree supports an active nest and cannot be cordoned off until after nesting activity is complete, Chevron will contact CDFW for emergency consultation. With CDFW authorization, all attempts will be made to either leave the nest in place if still intact, or salvage the eggs or chicks and deliver them to a bird rehabilitation center immediately after the tree is felled and the safety concern is eliminated.

6.0 PREPARERS

This Plan was prepared by Mr. Chris Dunn, a biologist with 24 years of professional experience, including over 11 years as an International Society of Arboriculture (ISA) Certified Arborist, with reference to professional recommendations and tree risk evaluations provided by Mr. Chris Newton, owner of Branch Out Tree Care and ISA Certified Arborist WE-7331A and Certified Tree Care Professional #03517. Land survey mapping of tree locations and quantities was provided by WM Surveys, Inc. Biological survey data was collected by Mr. Ryan Newkirk, and Mr. Ken Gilliland, Padre Associates, Inc. professional biologists with experience conducting nesting bird and other wildlife surveys, tree evaluations and scientific data collection.

June 1, 2023

Chris Dunn
Senior Project Manager/Biologist
ISA Certified Arborist No. WE-9525A
(805) 644-2220 ext. 412

TREE MAINTENANCE INVENTORY MAP

LEGEND:

- AMCR Nest
- HOOR Nest
- AC Nest Buffer - 125 ft
- ANHU, BUSH, CASJ, HOOR, & WEBB Nest Buffer - 75 ft
- Operational Area

Tree Types:

- Coyote Brush
- Cypress, Sycamore, Ash, & Sage
- Eucalyptus
- Island Pine
- Mixed Woodland
- Tam, Orn, Palm, & Oak

Surveyed Tree Location (March 6, 2023)

- Tree to be Protected in Place
- Tree for Topping and Pruning
- Tree for Removal

0 50 100
FEET

Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA
OIL AND GAS PROCESSING FACILITY PROPERTIES
SANTA BARBARA COUNTY, CA

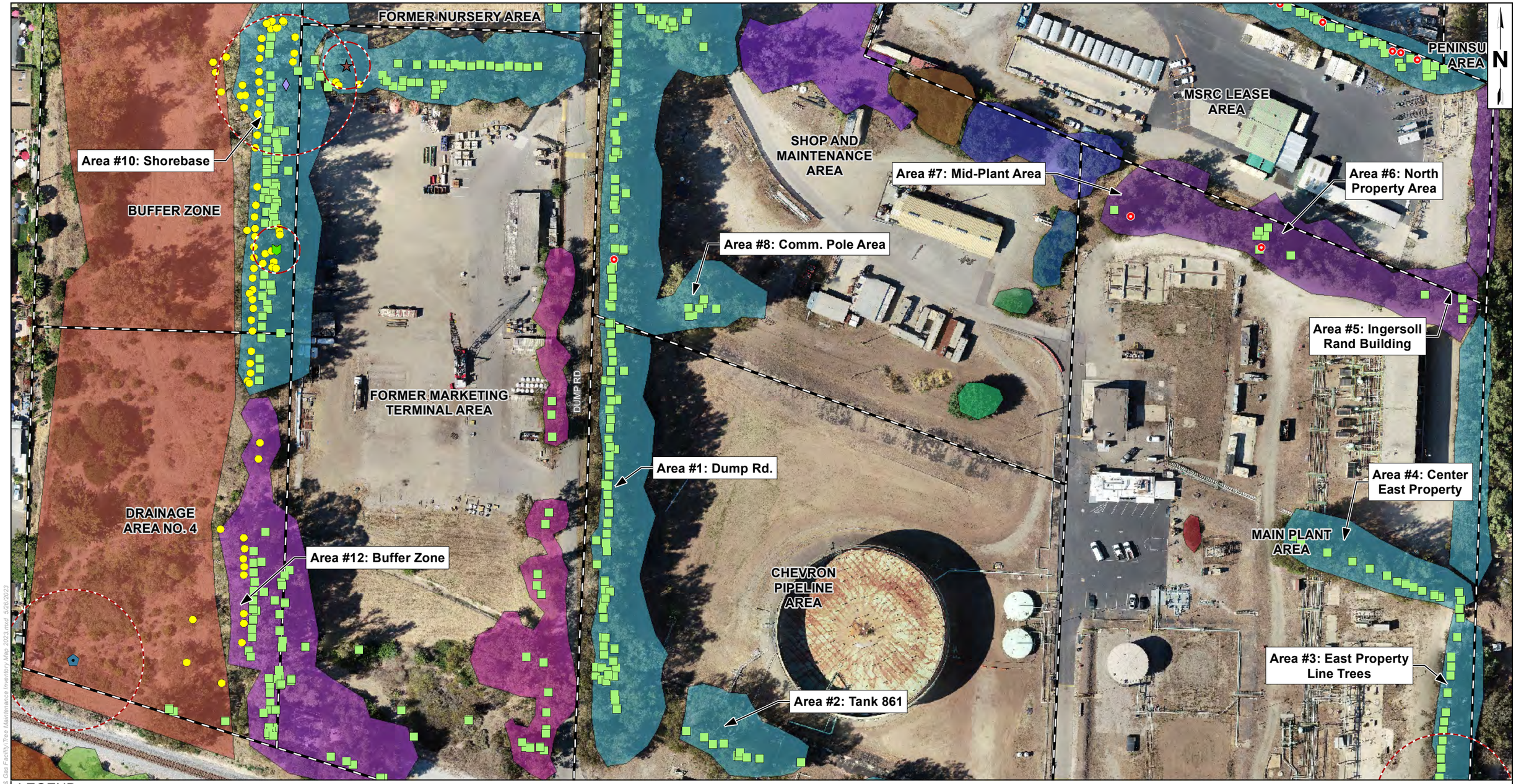
PROJECT NUMBER: 1901-0505

DATE: May 26, 2023

TREE MAINTENANCE INVENTORY MAP

FIGURE 1

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Oil & Gas Facility\Tree Maintenance Inventory Map_2023.mxd 5/26/2023



LEGEND:

- CASJ Nest
- Unoccupied Raptor Nest
- WEBB Nest
- RTHA Nest (Unoccupied as of May 19, 2023)
- ANHU, BUSH, CASJ, HOOR, & WEBB Nest Buffer - 75 ft
- Unoccupied Raptor Nest Buffer - 25 ft
- Operational Area

Tree Types:

- Ash, Avocado, & Fruit
- Avocado
- Coast Live Oak
- Cypress
- Dawn Redwood
- Eucalyptus
- Eucalyptus & Elm
- Eucalyptus & Pine
- Eucalyptus & Tam
- Fruit
- Mixed Woodland
- Orn
- Tam, Orn, Palm, & Oak
- Willow

Surveyed Tree Location (March 6, 2023)

- Tree to be Protected in Place
- Tree for Topping and Pruning
- Tree for Removal

0 50 100
FEET

Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

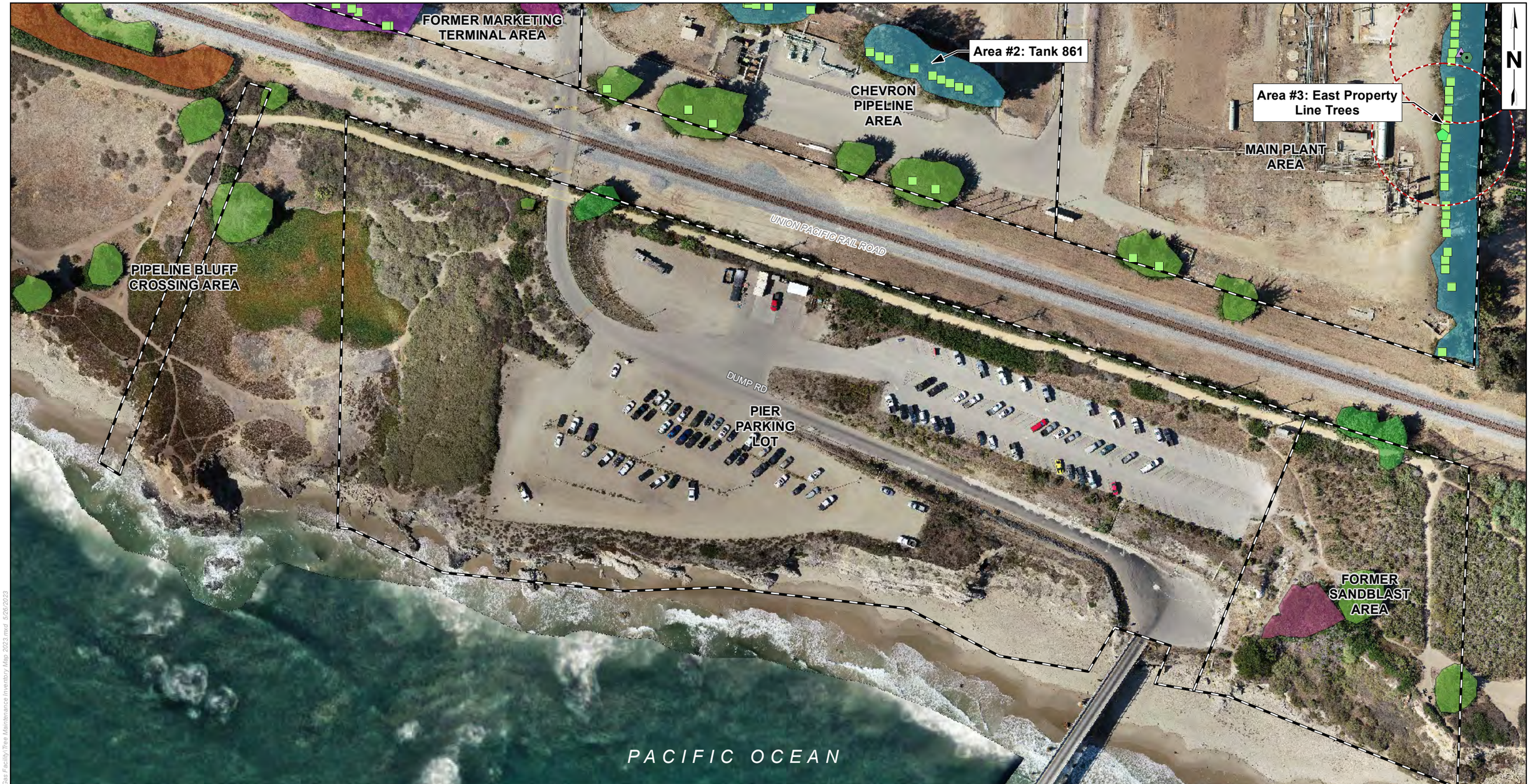
padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA OIL AND GAS PROCESSING FACILITY PROPERTIES SANTA BARBARA COUNTY, CA
PROJECT NUMBER: 1901-0505
DATE: May 26, 2023

TREE MAINTENANCE INVENTORY MAP

FIGURE 2

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Oil & Gas Facility\Tree Maintenance Inventory Map 2023.mxd 5/26/2023



LEGEND:

- ANHU Nest
- BUSH Nest
- LEGO Nest
- ANHU, BUSH, CASJ, HOOR, & WEBB Nest Buffer - 75 ft
- Operational Area

Tree Types:

- Arroyo Willow Thicket
- Cypress
- Eucalyptus
- Eucalyptus & Elm
- Eucalyptus & Pine
- Mixed Woodland
- Sycamore
- Willow

Surveyed Tree Location (March 6, 2023)

- Tree for Topping and Pruning

0 50 100
FEET

Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA OIL AND GAS PROCESSING FACILITY PROPERTIES SANTA BARBARA COUNTY, CA
PROJECT NUMBER: 1901-0505
DATE: May 26, 2023

TREE MAINTENANCE INVENTORY MAP

FIGURE 3

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Oil & Gas Facility\Tree Maintenance Inventory Map 2023.mxd 5/26/2023

BIOLOGICAL SURVEY REPORT

CHEVRON BIOLOGICAL SURVEY AND HABITAT IMPACT REVIEW FORM

SURVEY INFORMATION

Prepared for:	Mr. Chris Penza	Dates:	03/03/23 03/06/23 03/07/23	Times:	0830-1245 0730-1445 0730-1345
Prepared by:	Ryan Newkirk				
Field/Area:	Carpinteria, CA	Lease/Property:	Carp Oil & Gas Processing Facility properties	☒Fee	☐Federal
Section/T/R(s):	East and west of Dump Road			Weather:	45-56°F/0-5mph/mostly clear

Project Location and Description: 12 project areas within Carpinteria Oil and Gas Plant Property:
Area #1: east side of Dump Rd., Area #2: south of T861, Area #3: east property line, Area #4: center east property line, Area #5: northeast of Ingersoll-Rand building, Area #6: south of MSRC office building, Area #7: south of Control Room, Area #8: north of Tank 861, Area #9: Gate 1 entry area, Area #10: Shorebase area, Area #11: MSRC north property line, Area #12: Buffer Zone area – Downed tree removal and live tree trimming to be conducted by Branch Out Tree Care on behalf of Chevron/Beacon West Energy Group LLC.

	Project Footprint Sq. ft. / acres	**Undisturbed Habitat**	**Not Habitat or Significantly Disturbed**	**Total Calculated Impact**
Permanent	0	0	0	0
Temporary	45.5 acres	0 sq. ft	45.5 acres	45.5 acres

The conversion factor is 1 acre = 43,560 sq. ft. Use either acres or sq. ft.

SURVEY METHOD

☐ Pads or locations - Impact area plus 100' buffer with transects spaced at: _____ feet

☐ Linear projects - Centerline plus corridor to either side out to:

☒ Other - describe: Proposed project areas surveyed on foot and with 10x42 binoculars. Nearby trees and areas of opportunity surveyed within 100' buffer of impact areas. Focus on identifying nesting birds within or near the trees proposed for trimming or removal. Blue gum (*Eucalyptus globulus*) and athel tamarisk (*Tamarix aphylla*) proposed for trimming or removal throughout property were surveyed over 3 separate survey visits, moving from areas of high priority to areas of lower priority, as identified by Branch Out Tree Care. Immediate area surrounding trees within project areas surveyed on foot and with binoculars, while canopies were scanned with binoculars. Area around and within the fallen branches of one (1) recently downed *Eucalyptus globulus* within Area #6 surveyed extensively for the presence of sensitive species. Additionally, duff was repeatedly disturbed by hand to survey for the presence of fossorial reptiles.

☐ All sensitive burrows/dens were marked with:

TOPOGRAPHY

☒ Flat Terrain ☐ Rolling Hills ☐ Floodplain ☐ Steep Hills ☐ Potential CDFW Streambed

☐ Potential ACOE Waters of the U.S.

Comments (include elevation if known, and amount of existing disturbance): All areas surveyed occur between 37 and 62 feet in elevation (MSL). Tree trimming and removal locations are located throughout the facility, and all areas have undergone various temporary disturbances in the past including soil cleanup, weed abatement, dead tree felling, stormwater management, and vegetation restoration. The ongoing remediation of Tank 861, located ~150 ft. to the east of Dump Rd. and adjacent to several survey locations, was occurring during each survey date.

VEGETATION OBSERVED AT PROJECT SITE

☒ Non-Native Grassland ☐ Coastal Sage Scrub ☐ Chaparral ☒ Ruderal ☐ Riparian (stream)

☐ Oak woodland ☒ Other: Eucalyptus, London plane, Monterey cypress, and coast live oak habitats observed within to the survey areas (see Figure 1 below).

Dominant shrub or tree layer (an "*" indicates a non-native species) - Common Name (*Scientific Name*): blue gum eucalyptus* (*Eucalyptus globulus*), Monterey cypress (*Hesperocyparis macrocarpa*), athel tamarisk (*Tamarix aphylla*), western sycamore (*Platanus racemosa*), London plane (*Platanus* x *Acerifolia*), longleaf wattle* (*Acacia longifolia*), coyote brush *(Baccharis pilularis)*, tree tobacco* (*Nicotiana glauca*), and myoporum* (*Myoporum laetum*).

Dominant herb layer (an "*" indicates a non-native species) - Common Name (*Scientific Name*): wood sorrel* (*Oxalis pes-caprae*), cheeseweed* (*Malva parviflora*), California sagebrush (*Artemisia californica*), felt-leaf everlasting (*Pseudognaphalium microcephalum*), California bush sunflower (*Encelia californica*), lemonadeberry (*Rhus integrifolia*), prickly sow thistle* (*Sonchus asper*), white sweet clover* (*Melilotus albus*), English plantain* (*Plantago lanceolata*), curly dock* (*Rumex crispus*), common sow-thistle* (*Sonchus oleraceus*), Italian thistle (*Carduus pycnocephalus*), and onion-leaved asphodel* (*Asphodelus fistulosus*).

Sensitive Plants:			
	☐ None Observed	☐ Coast live oak	☐ Plummer's baccharis
	☐ Mariposa lily sp.	☐ S. CA black walnut	☒ Other: (describe below)

Was survey performed at appropriate time for detection of sensitive annual plants? ☒ Yes ☐ No

	Plant Comments: Proposed impact areas are largely ruderal, with live and recently fallen blue gum eucalyptus (*Eucalyptus globulus*) and Monterey cypress (*Hesperocyparis macrocarpa*) making up much of the overstory. Ruderal herbaceous vegetation has colonized some of the understory, with large swaths of bare ground covered in eucalyptus duff and tree litter. A sparse mix of native and non-native vegetation surrounds the large eucalyptus windrows on either side of Dump Rd.
WILDLIFE HABITAT AND/OR SIGN OBSERVED AT PROJECT SITE	☐ None Observed ☐ Western Pond Turtle ☐ Coast Patch-nosed Snake ☐ Western Whiptail ☐ Least Bell's Vireo ☐ Two-striped Garter Snake ☐ Raptors (nesting) ☐ Legless Lizard ☐ CA Gnatcatcher ☒ Other (describe below)
Wildlife Comments:	Special focus paid to presence or absence of nesting passerine birds and raptors, monarch butterfly aggregations, and reptiles. Species observed (an "*" indicates a non-native species): California scrub jay, red-tailed hawk, yellow-rumped warbler, mourning dove, Anna's hummingbird, American crow, bushtit, house finch, western gull, Eurasian starling, Allen's hummingbird, mallard, turkey vulture, house sparrow, lark sparrow, Eurasian collared dove, song sparrow, white-crowned sparrow, California towhee, snowy egret, Cassin's kingbird, house finch, acorn woodpecker, western bluebird, lesser goldfinch, western gull, black phoebe, band-tailed pigeon, American pipit, Say's phoebe, downy woodpecker, western kingbird, bushtit, northern flicker, rock dove, house wren, ruby-crowned kinglet, California ground squirrel, Audubon's cottontail, western fence lizard, red fox (den).
SURVEY RESULTS	☒ The project **should not** result in direct impacts to threatened or endangered species provided that standard Chevron precautionary measures are implemented along with the specific directions listed below in the comments section. ☐ Additional survey and/or follow-up is required; Follow-up results completed by a Qualified Biologist must be attached prior to proceeding with project. Were any modifications made to project as a result of this survey? ☒ Yes ☐ No Survey Comments: Particular attention was paid to the presence of nesting avian species, monarch butterflies, and fossorial reptiles. Individual monarch butterflies were observed within and around the proposed work area, but no aggregations were observed. Three (3) active avian nests were documented during the survey: - One (1) active Anna's hummingbird (*Calypte anna*) nest was observed ~10 feet up within a blue gum eucalyptus in the N-S windrow of Area #3. Nesting behavior observed included nest defense behavior and incubation, indicating the presence of eggs within the nest (see figure 1, photos below). Accordingly, I recommend the establishment of a 75-foot buffer around the nest, within which no work should occur while the nest is active. - One (1) active bushtit (*Psaltriparus minimus*) nest was observed ~6 feet up, also within a blue gum eucalyptus in the N-S windrow of Area #3, ~75 feet south of the Anna's hummingbird nest. Two adults were actively constructing the nest and nest defense behavior was also noted (see figure 1, photos below). Accordingly, I recommend the establishment of a 75-foot buffer around the nest, within which no work should occur while the nest is active. - One (1) active red-tailed hawk (*Buteo jamaicensis*) nest was observed ~100 fee up within the E-W windrow of Area #10. Nesting behavior included pair-bonding behavior and nest material deliveries from adults (see figure 1, photos below). Accordingly, I recommend the establishment of a 200-foot buffer around the nest, within which no work should occur, while the nest is active, and the tree supporting the nest should be left intact over the long-term. Survey recommendations: - Follow the buffer recommendations as highlighted above. Passage through these buffers by personnel on foot and vehicles is acceptable, but no other work should occur within the buffer (i.e. parking, staging, vegetation removal, etc.) while the nest is active. - Limit the removal of duff (fallen leaves and organic matter) beneath eucalyptus to keep their shallow root and mycorrhizal systems intact and avoid potential impacts to fossorial (burrowing) reptiles (e.g., legless lizard and ring-neck snake). If fossorial reptiles are encountered, crews should immediately contact a qualified biologist to provide rapid and accurate conservation recommendations. - Should aggregations of monarch butterflies be observed within any trees due to be trimmed or removed, work should be stopped and crews should contact a qualified biologist to provide conservation recommendations.
FOLLOW-UP SURVEY	Target Species/Issues | Timeframe: Surveyor Name: Company: Padre Associates, Inc. Date:
FORM DISTRIBUTION:	☐ ☒ HES SJVBU Staff - 9525 Camino Media Kacy Twist (KacyOMalley@chevron.com) ☒ Other: Mr. James Tolar, Kevin Duganne

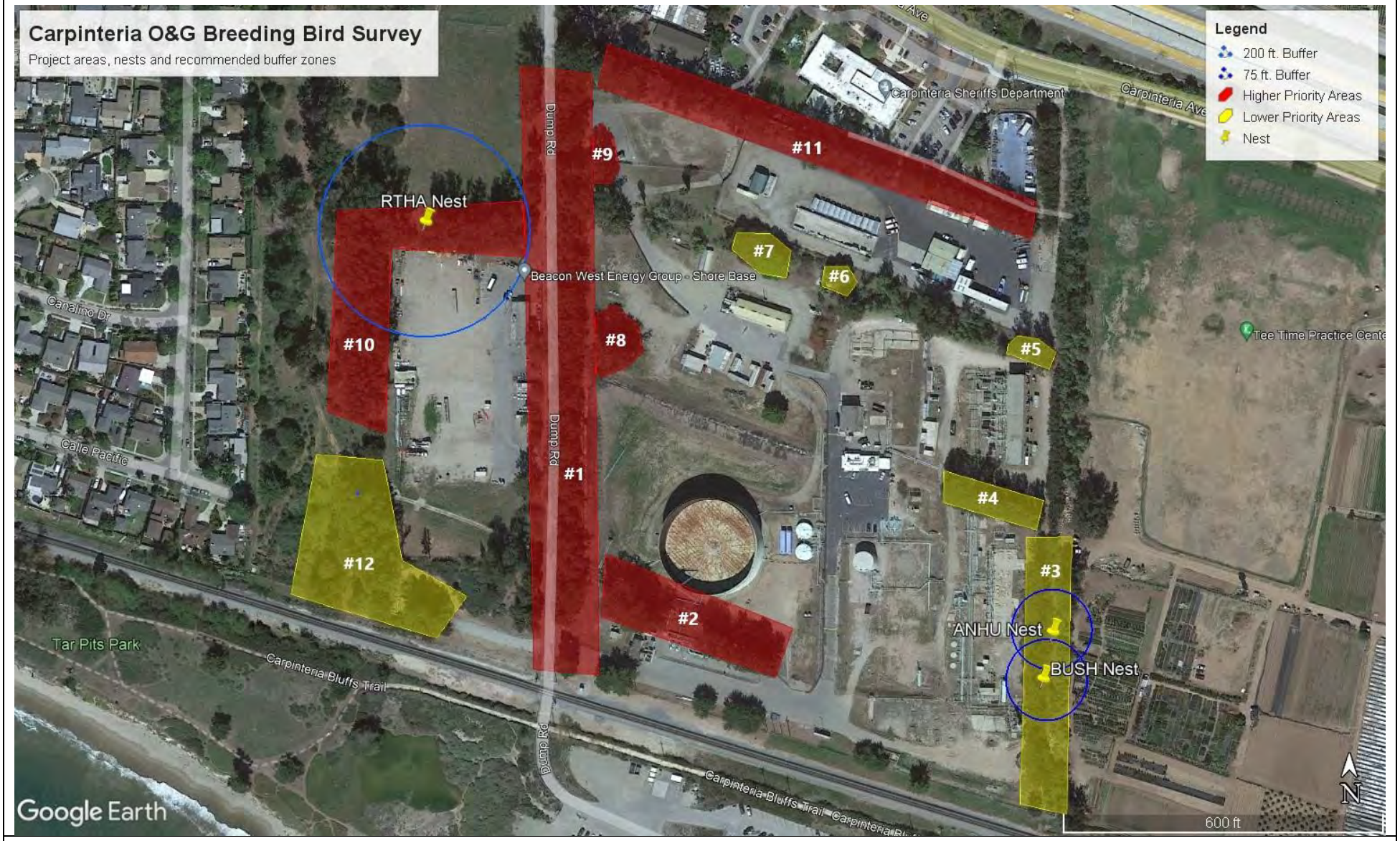


Figure 1. Project areas surveyed 3/3/23, 3/6/23, and 3/7/23.

Photo 1. View to the southeast, showing Area #1 eucalyptus windrow along Dump Rd. March 3, 2023

Photo 2. View to the northeast of Area #2, south of Tank 861. Visible are several recently "topped" blue gum eucalyptus. March 3, 2023

Photo 3. View to the southeast of Area #3 eucalyptus windrow running north-south. March 7, 2023

Photo 4. View to the northwest of Area #4, showing dense stand of eucalyptus. March 7, 2023

Photo 5. View to the north of Area #5, showing trees in proximity to high voltage cables. March 7, 2023

Photo 6. View to the northeast of Area #6. Trees are located just south of MSRC office building. March 7, 2023

Photo 7. View to the northwest of Area #7, showing large eucalyptus with tamarisk proposed for removal leaning onto it. March 3, 2023

Photo 8. View to the east of Area #8, showing dense stand of eucalyptus surrounding communications pole. March 6, 2023

Photo 9. View to the northwest of Area #9, showing stand of eucalyptus near the Gate 1 entryway. March 6, 2023

Photo 10. View to north of east-west windrow within Shorebase area, showing very large eucalyptus. An active red-tailed hawk nest (barely visible) is indicated by a red arrow. March 6, 2023

Photo 11. View to northwest of Area #11, showing east-west eucalyptus windrow north of the MSRC yard. March 6, 2023

Photo 12. View to the south of a section of Area #12, showing buffer zone area with large eucalyptus. March 7, 2023

	
Photo 13. View of Anna's hummingbird adult incubating on a nest within Area #3. March 7, 2023	**Photo 14.** View of bushtit nest located within Area #3. March 7, 2023
	
Photo 15. View to the east of pink flagging (highlighted by a red circle) indicating location of Anna's hummingbird nest within Area #3. March 7, 2023	**Photo 16.** Binocular view of red-tailed hawk nest located ~100 feet up within a eucalyptus in Area #10. March 3, 2023

Appendix C-4

Coastal Wetlands Delineation Report

COASTAL WETLANDS DELINEATION REPORT

DECOMMISSIONING AND REMEDIATION OF THE CARPINTERIA OIL AND GAS PROCESSING FACILITIES

CARPINTERIA, SANTA BARBARA COUNTY

Project No. 2002-5211

Prepared for:

Chevron West Coast Decommissioning Program
3916 State Street, Suite 200
Santa Barbara, CA 93105

Prepared by:

Padre Associates, Inc.
1861 Knoll Drive
Ventura, California 93003

JUNE 2021
REVISED DECEMBER 2021

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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ATTACHMENTS

1.0 INTRODUCTION

This Coastal Wetlands Delineation Report has been prepared by Padre Associates, Inc. (Padre) on behalf of Chevron USA (Chevron). The term “coastal wetlands” is used in this Report to refer to wetlands as defined in the California Coastal Act and California Coastal Commission policies. This Report has been developed to document coastal wetlands in areas that may be affected by implementation of the Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities Project located in the eastern portion of the City of Carpinteria, California, between U.S. Highway 101 and the Pacific Ocean (see Onshore Facilities Map). This Report has been written in support of the Project’s application for a Conditional Use Permit/Coastal Development Permit that is being filed with the City of Carpinteria and County of Santa Barbara.

1.1 PROJECT SUMMARY

The Project's purpose is to demolish and remove surface and subsurface facilities and subsequent remediation of any contaminated soils at the onshore Carpinteria Oil and Gas Processing Facility to accommodate the Project Site's potential future redevelopment.

1.2 BACKGROUND

The Project site is located within an area that has been historically utilized for agricultural production and more recently for and oil and gas development support activities. Historical agricultural production activities documented at the Project site from the 1920’s through 1959 included dry farming, row crop production, orchards (fruit trees and nuts), and commercial flower production (plant nursery). The Carpinteria Oil and Gas Processing Facility has been in operation since 1959 and historically supported offshore Platforms Hazel, Hilda, Hope and Heidi (Carpinteria Field), and Grace and Gail (Santa Clara Field and Sockeye Field). Abandonment of the wells and decommissioning/removal of offshore Platforms Hazel, Hilda, Hope, and Heidi (4H Platforms) from the Santa Barbara Channel were completed in 1996. Although Platform Grace ceased production in 1998, the Plant and Tank 861 continued to receive oil and gas from Platform Gail until approximately 2017.


N
FORMER NURSERY AREA
BUFFER ZONE
PENINSULA AREA
MSRC LEASE AREA
SHOP AND MAINTENANCE AREA
FORMER MARKETING TERMINAL AREA
DRAINAGE NO. 4
CHEVRON PIPELINE AREA
MAIN PLANT AREA
PIPELINE BLUFF CROSSING AREA
PIER PARKING LOT
FORMER SANDBLAST AREA
Pacific Ocean
0
75
150
Feet
LEGEND:
Operational Area
Project Site
Project Disturbance Area
Oil Pipeline
MAP EXTENT:
padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS
PROJECT NAME
CARPINTERIA PLANT DECOMMISSIONING
SANTA BARBARA COUNTY, CA
PROJECT NUMBER
2002-5211
DATE
May 2021
ONSHORE FACILITIES MAP
FIGURE
1.3-3

2.0 REGULATORY SETTING

The term wetland is used to describe a particular landscape characterized by inundation or saturation with water for a sufficient duration to result in the alteration of physical, chemical, and biological elements relative to the surrounding landscape. Wetland areas are characterized by prevalence of vegetation typically adapted for life in saturated soil conditions.

2.1 FEDERAL REGULATIONS

Federal regulatory agencies with jurisdiction over wetlands include the U.S. Army Corps of Engineers (Corps) with authority to enforce two Federal regulations involving wetland preservation; the Clean Water Act (Section 404), which regulates the disposal of dredge and fill materials in waters of the U.S., and the Rivers and Harbors Act of 1899 (Section 10), which regulates diking, filling, and placement of structures in navigable waterways.

Under Corps and U.S. Environmental Protection Agency regulations, wetlands are defined as:

> *"those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."*

2.2 STATE OF CALIFORNIA REGULATIONS

State regulatory agencies with jurisdiction over wetlands include the State Water Quality Control Board that enforces compliance with the Federal Clean Water Act (Section 401) regulating water quality and the California Coastal Commission (CCC), which regulates development within the coastal zone as stipulated in the California Coastal Act (Sections 30230, 30231, 30233, and 30240 apply to preservation and protection of wetlands).

The Coastal Commission's regulations establish a "one parameter definition" that only requires evidence of a single parameter to establish coastal wetland conditions:

> *Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats. (14 CCR Section 13577).*

The Coastal Commission's regulations provide general decision rules for establishing the upland boundary of coastal wetlands:

- The boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover.

- The boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or
- In the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation, and land that is not (14 CCR Section 13577).

2.3 CITY OF CARPINTERIA

The City uses the Coastal Act (Section 30121) definition of wetlands:

"Wetland" means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.

3.0 DESCRIPTION OF SURFACE WATERS

Regional drainage features (such as Carpinteria Creek or its tributaries) do not occur within or traverse the Project site. On-site drainage features handle local storm run-off only, which is highly subdivided by berms used to contain potential oil spills. Storm run-off from the western portion of the Project site is directed along the east side of Dump Road into a 36-inch diameter above-ground pipe that traverses the Former Marketing Terminal Area and the Drainage No. 4 Area to the Railroad Ditch which runs along the north side of the Union Pacific Railroad embankment. The Railroad Ditch extends from the Project site approximately 750 feet to the west where it flows under the Union Pacific Railroad tracks in a box culvert and disperses over the bluff area.

4.0 FIELD METHODS

Field methods were taken from the Arid West Supplement to the Corps of Engineers Wetland Delineation Manual.

4.1 SURVEY AREA

The survey area was selected to encompass all operational areas (see Figure W-1) that may be affected by decommissioning activities including:

- Drainage No. 4
- Buffer Zone
- Former Marketing Terminal Area
- Former Nursery Area
- Chevron Pipeline Area
- Shop and Maintenance Area
- MSRC Lease Area
- Main Plant Area
- Pipeline Bluff Crossing Area

- Pier Parking Lot
- Former Sandblast Area

4.2 HYDROPHYTIC VEGETATION

Vegetation of the survey area was assessed in coordination with preparation of the Biological Resources Study and in consultation with Padre Associates biologists that have extensive knowledge of the biological resources of the site. A plant list for all onshore facilities is provided as Attachment A and represents a compilation of the results of botanical surveys conducted over the past 15 years. All areas supporting hydrophytes were inspected and sampled when needed to verify hydrophytic status. The location of each sample point is provided on Figure W-1.

The dominance of hydrophytic vegetation was determined at each sample point, dominant plant species within each stratum (tree, sapling/shrub, herbaceous, and woody vine) at the sample point location were identified using The Jepson Manual (second edition). The hydrophytic indicator status of the species was determined in accordance with the 2018 National Wetland Plant List, Arid West Region as facultative (FAC), facultative-wetland (FACW) or obligate (OBL) wetland species. The vegetation was then analyzed using the dominance test to determine if greater than 50 percent of the dominant species were hydrophytic and the prevalence index calculation to determine if the prevalence index was less than or equal to 3.0. Wetland Determination Data Forms are provided in Attachment B for each sample point.

4.3 WETLAND HYDROLOGY

Wetland hydrology was examined in areas not already considered coastal wetlands based on hydrophytic vegetation. Hydrologic characteristics of the sample points were evaluated by identifying evidence of inundation, and the presence of surface water, soil saturation, sediment deposits/sorting, salt crusts, drift deposits and local drainage patterns.

4.4 HYDRIC SOILS

Soil information (including excavation of soil pits) was collected where needed to determine the presence of hydric soil, primarily in areas supporting hydrophytic vegetation that did not meet the dominance or prevalence tests (see Section 3.2).

5.0 COASTAL WETLANDS DELINEATION RESULTS

5.1 HYDROPHYTIC VEGETATION

Hydrophytic plant species found within the survey area are listed in Table 1. Most sampling points that met either the dominance or prevalence test for hydrophytic vegetation supported arroyo willow (sample points 5, 7, 10, 10A, 13, 15, 16, 17, 18, 19) or brass buttons and English plantain (sample points 1 and 2). However, sample point 20 represents pure stands of quail bush (FAC) in the Pier Parking Lot area. Areas dominated by quail bush but also supporting non-hydrophytic plant species (such as *Encelia californica* or *Rhus integrifolia*) failed the dominance or prevalence tests and are not considered hydrophytic vegetation.

Table 1. Hydrophytic Plant Species of the Survey Area

Common Name	Scientific Name	Hydrophytic Status*	Sample Points Where Found
Curly dock	*Rumex crispus*	FAC	1,2
Brass buttons	*Cotula coronopifolia*	OBL	1,2
English plantain	*Plantago lanceolata*	FAC	1,2,5,8
Tall flat sedge	*Cyperus eragrostis*	FACW	1
Boconne's sand-spurrey	*Spergularia bocconi*	FACW	1
Western sycamore	*Platanus racemosa*	FAC	3,12
Arroyo willow	*Salix lasiolepis*	FACW	4,5,6,7,10,10A,13,15,16,17,18,19
Mulefat	*Baccharis salicifolia*	FAC	9,11
California bulrush	*Schoenoplectus californicus*	OBL	11
California wild rose	*Rosa californica*	FAC	12,13
California blackberry	*Rubus ursinus*	FAC	12,13
Spiny rush	*Juncus acutus*	FACW	14
Quail bush	*Atriplex lentiformis*	FAC	20

*Listed as OBL (obligate wetland: almost always occurs in wetlands, >99% probability); FACW (facultative-wetland: usually occurs in wetlands, 67-99% probability); FAC (facultative: equally likely to occur in wetlands or non-wetlands, 34-66% probability)

5.2 WETLAND HYDROLOGY

Wetland hydrology indicators were found only in the following sample points:

- Tank containment area within the Chevron Pipeline Area (sample points 1 and 2, sediment deposits)
- Patch of California bulrush at terminus of railroad ditch (sample point 11, soil saturation and drainage patterns)

These two areas were considered coastal wetlands based on hydrophytic vegetation, such that wetland hydrology did not result in additional areas being included as coastal wetlands.

5.3 HYDRIC SOILS

Hydric soil indicators were not found during the coastal wetland delineation. However, sampling was mostly limited to areas not meeting other wetland criteria. It is expected that sample point 11 supports hydric soils due to seasonal periods of soil saturation.

5.4 COASTAL WETLANDS DELINEATION RESULTS

The coastal wetlands delineation results at each of the sample points is summarized in Table 2. Areas meeting the coastal wetlands definition (sum of all areas exhibiting dominance by hydrophytic vegetation, indicators of wetland hydrology and hydric soils) are mapped on Figure W-1) and the area of each wetland polygon is quantified in Table 3. A total of 1.67 acres of coastal wetlands were found within the survey area.

Table 2. Wetlands Sample Point Data Summary

Sample Point no.	Site Area	Hydrophytic Vegetation Criterion met?	Hydric Soils Criterion met?	Wetland Hydrology Criterion met?	Coastal Wetland?
1	Chevron Pipeline Area	Yes	No	Yes	Yes
2	Chevron Pipeline Area	Yes	No, based on soils data collected at nearby sample point 1	No	Yes
3	Drainage No. 4	No	No, based on soils data collected at nearby sample point 5	No	No
4	Drainage No. 4	No	No, based on soils data collected at nearby sample point 5	No	No
5	Drainage No. 4	Yes	No	No	Yes
6	Drainage No. 4	No	No	No	No
7	Drainage No. 4	Yes	No, based on soils data collected at nearby sample point 6	No	Yes
8	Drainage No. 4	No	No, based on soils data collected at nearby sample point 6	No	No
9	Drainage No. 4	No	No	No	No

Sample Point no.	Site Area	Hydrophytic Vegetation Criterion met?	Hydric Soils Criterion met?	Wetland Hydrology Criterion met?	Coastal Wetland?
10	Former Sandblast Area	Yes	No data	No	Yes
10A	Former Sandblast Area	Yes	No data	No	Yes
11	Tarpits Park/Bluffs	Yes	No data	Yes	Yes
12	Tarpits Park/Bluffs	Yes	No data	No	Yes
13	Tarpits Park/Bluffs	Yes	No data	No	Yes
14	Tarpits Park/Bluffs	Yes	No data	No	Yes
15	Tarpits Park/Bluffs	No	No data	No	No
16	Tarpits Park/Bluffs	Yes	No data	No	Yes
17	Tarpits Park/Bluffs	Yes	No data	No	Yes
18	Tarpits Park/Bluffs	Yes	No data	No	Yes
19	Tarpits Park/Bluffs	Yes	No data	No	Yes
20	Pier Parking Lot	Yes	No data	No	Yes

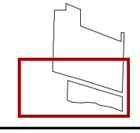
Table 3. Wetlands Delineation Results

Wetland no.	Location	Area (acres)
W-1	Chevron Pipeline Area	0.17
W-2	Drainage No. 4 Area	0.02
W-3	Drainage No. 4 Area	0.03
W-4	Former Sandblast Area	0.08
W-5	Pier Parking Lot	0.65
W-6	Pier Parking Lot (in part)	0.13
W-7	Pier Parking Lot	0.11
W-8	Tarpits Park/Bluffs	0.05
W-9	Tarpits Park/Bluffs	0.11
W-10	Tarpits Park/Bluffs	0.08
W-11	Tarpits Park/Bluffs	0.03
W-12	Tarpits Park/Bluffs	0.07
W-13	Tarpits Park/Bluffs	0.10
W-14	Tarpits Park/Bluffs	0.04
Total		**1.67**

LEGEND:

- Wetland Sampling Point
- Coastal Wetland
- Operational Area
- Project Boundary

MAP EXTENT:



0 75 150
FEET

Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA OIL AND GAS PROCESSING FACILITY PROPERTIES SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: June 2021

COASTAL WETLAND MAP

FIGURE W-1

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Oil & Gas Facility\Terrestrial Biological Resources Study\Coastal Wetland Map.mxd 6/8/2021

ATTACHMENT A

CARPINTERIA OIL AND GAS PROCESSING FACILITY PLANT LIST

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITY - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot and/or Pipeline Landing
CUPRESSACEAE (Cypress Family)												
Monterey cypress	*Hesperocyparis macrocarpa*	T	NL	I		X	X	X		X	X	X
Dawn redwood	*Metasequoia glyptostroboides*	T	NL	I						X		
PINACEAE (Pine Family)												
Aleppo pine	*Pinus halepensis*	T	NL	I			X				X	
Monterey pine	*Pinus radiata*	T	NL	I				X	X	X		
TAXODIACEAE (Bald Cypress Family)												
Redwood	*Sequoia sempervirens*	T	NL	I			X					
ARAUCARIACEAE (Araucaria Family)												
Norfolk island pine	*Araucaria excelsa*	T	NL	I					X			
ADOXACEAE (Muskroot Family)												
Blue elderberry	*Sambucus nigra ssp. caerulea*	T	FACU	N				X	X			X
AIZOACEAE (Fig-Marigold Family)												
Crystalline iceplant	*Mesembryanthemum crystallinum*	H	FACU	I	Moderate						X	
Baby sun rose	*Mesembryanthemum cordifolium*	V	NL	I			X					
Freeway iceplant	*Carpobrotus edulis*	S	NL	I	High					X	X	X
ANACARDIACEAE (Sumac or Cashew Family)												
Laurel sumac	*Malosma laurina*	S	NL	N		X						
Lemonade berry	*Rhus integrifolia*	S	NL	N		X		X	X		X	X
Brazilian pepper tree	*Schinus terebinthifolius*	T	NL	I	Moderate		X	X				
APIACEAE (Carrot Family)												
Poison hemlock	*Conium maculatum*	H	FACW	I	Moderate	X		X				
Fennel	*Foeniculum vulgare*	H	NL	I	Moderate	X						X
APOCYNACEAE (Dogbane Family)												
Oleander	*Nerium oleander*	S	NL	I			X	X				
ARALIACEAE (Ginseng Family)												
English ivy	*Hedera helix*	V	NL	I	High		X	X				
ASPARAGACEAE (Asparagus Family)												
Century plant	*Agave americana*	S	UPL	I						X		
Dracaena	*Dracaena sp.*	S	NL	I						X		
ASPHODELACEAE (Asphodel Family)												
Aloe	*Aloe sp.*	S	NL	I						X		
Onionweed	*Asphodelus fistulosus*	H	NL	I	Moderate	X				X		X
ASTERACEAE (Sunflower Family)												
Western ragweed	*Ambrosia psilostachya*	H	FACU	N		X		X	X	X	X	X
California sagebrush	*Artemisia californica*	H	NL	N		X			X		X	X
Mugwort	*Artemisia douglasiana*	H	FAC	N		X		X			X	
Coyote brush	*Baccharis pilularis*	S	NL	N		X		X	X	X	X	X
Mule fat	*Baccharis salicifolia*	S	FAC	N				X			X	
Italian thistle	*Carduus pycnocephalus*	H	NL	I	Moderate		X	X				
Tocalote	*Centaurea melitensis*	H	NL	I	Moderate	X						X
Bull thistle	*Cirsium vulgare*	H	FACU	I	Moderate							X
Brass buttons	*Cotula coronopifolia*	H	OBL	I	Limited					X		
Artichoke	*Cynara scolymus*	H	NL	I				X				
German Ivy	*Delairea odorata*	V	NI	I	High	X		X				
California bush sunflower	*Encelia californica*	S	NL	N		X				X	X	X
Horseweed	*Erigeron canadensis*	H	FACU	N						X		
Crown daisy	*Glebionis coronaria*	H	NL	I	Moderate					X		
Bristly ox-tongue	*Helminthotheca echioides*	H	FAC	I	Limited		X	X	X	X		
Telegraph weed	*Heterotheca grandiflora*	H	NL	N						X		X

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITY - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot and/or Pipeline Landing
Rough cat's-ear	*Hypochaeris radicata*	H	NL	I	Moderate			X	X			X
Coastal golden-bush	*Isocoma menziesii*	S	NL	N		X				X		X
Prickly lettuce	*Lactuca serriola*	H	FACU	I		X		X		X		
Narrowleaf cottonrose	*Logfia gallica*	H	NL	I						X		
Green everlasting	*Pseudognaphalium californicum*	H	NL	N		X				X		
Cudweed	*Pseudognaphalium microcephalum*	H	FACU	N		X				X		
Cotton-batting plant	*Pseudognaphalium stramineum*	H	FAC	N						X		
Milk thistle	*Silybum marianum*	H	NL	I	Limited					X		
Prickly sow thistle	*Sonchus asper*	H	FAC	I		X						
Common sow thistle	*Sonchus oleraceus*	H	UPL	I			X	X		X		X
BIGNONIACEAE (Bignonia Family)												
Trumpet creeper	*Campsis radicans*	V	NL	I				X				
Cape honeysuckle	*Tecoma capensis*	S	NL	I				X	X			
BORAGINACEAE (Borage Family)												
Large-flowered popcorn flower	*Cryptantha intermedia*	H	NL	N						X		
Pride of Madeira	*Echium candicans*	S	NL	I	Limited			X		X		
Branching phacelia	*Phacelia ramosissima*	H	FACU	N						X	X	X
BRASSICACEAE (Mustard Family)												
Shepherd's purse	*Capsella bursa-pastoris*	H	FACU	I						X		
Summer mustard	*Hirschfeldia incana*	H	NL	I	Moderate	X	X	X	X	X	X	X
Wild radish	*Raphanus sativus*	H	NL	I	Limited		X	X	X	X		
London rocket	*Sisymbrium irio*	H	NL	I	Limited					X		
CACTACEAE (Cactus Family)												
Mission prickly-pear	*Opuntia ficus-indica*	S	NL	I						X		
CARYOPHYLLACEAE (Pink Family)												
Sand-spurrey	*Spergularia bocconi*	H	FACW	I						X		
Four-leaved all-seed	*Polycarpon tetraphyllum*	H	NL	I			X					
CHENOPODIACEAE (Goosefoot Family)												
Big saltbush, quailbush	*Atriplex lentiformis*	S	FAC	N		X			X		X	X
Five-hook bassia	*Bassia hyssopifolia*	S	FACU	I	Limited		X		X	X		
Pitseed goosefoot	*Chenopodium berlandieri*	H	NL	N						X		
Nettle leaf goosefoot	*Chenopodium murale*	H	FACU	I						X		
Russian thistle	*Salsola tragus*	H	FACU	I	Limited				X	X		
CONVOLVULACEAE (Morning-Glory Family)												
Chaparral morning-glory	*Calystegia macrostegia ssp. intermedia*	V	NL	N		X	X	X				X
Bindweed	*Convolvulus arvensis*	H	NL	I			X			X		
CRASSULACEAE (Stonecrop Family)												
Pygmy weed	*Crassula connata*	H	FAC	N						X		
Jade plant	*Crassula ovata*	H	NL	I						X		
EUPHORBIACEAE (Spurge Family)												
Spotted spurge	*Chamaesyce maculata*	H	FACU	I			X			X		
Caper spurge	*Euphorbia lathyris*	H	NL	I			X					
Petty spurge	*Euphorbia peplus*	H	NL	I			X	X		X		
Carnation spurge	*Euphorbia terracina*	H	NL	N	Limited				X	X	X	
Castor bean	*Ricinus communis*	H	FACU	I	Limited		X	X	X		X	X
FABACEAE (Legume Family)												
Sydney golden wattle	*Acacia longifolia*	T	NL	I	Watch				X	X		
Strigose lotus	*Acmispon strigosus*	H	NL	N						X		
Miniature lupine	*Lupinus bicolor*	H	NL	N						X		

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITY - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot and/or Pipeline Landing
Succulent lupine	*Lupinus succulentus*	H	NL	N					X			
Collared annual lupine	*Lupinus truncatus*	H	NL	N						X		
California bur-clover	*Medicago polymorpha*	H	NL	I	Limited			X		X		
Yellow sweet clover	*Melilotus indicus*	H	FACU	I		X			X	X		X
Spring vetch	*Vicia sativa*	H	FACU	I				X	X		X	
FAGACEAE (Oak Family)												
Coast live oak	*Quercus agrifolia*	T	NL	N		X	X	X	X	X		X
Scrub oak	*Quercus berberidifolia*	T	NL	N								X
GERANIACEAE (Geranium Family)												
Red-stemmed filaree	*Erodium cicutarium*	H	NL	I	Limited	X	X		X	X	X	
White-stemmed filaree	*Erodium moschatum*	H	NL	I						X		
Cut-leaf geranium	*Geranium dissectum*	H	NL	I	Limited			X		X		
Geranium	*Pelargonium sp.*	H	NL	I				X				
GROSSULARIACEAE (Gooseberry Family)												
Fuschia-flowered gooseberry	*Ribes speciosum*	S	NL	N					X			
LAMIACEAE (Mint Family)												
Horehound	*Marrubium vulgare*	H	FACU	I	Limited	X				X		
Rosemary	*Rosmarinus officianalis*	S	NL	I			X					
Black sage	*Salvia mellifera*	S	NL	N					X		X	
Purple sage	*Salvia leucophylla*	S	NL	N		X		X			X	X
LAURACEAE (Laurel Family)												
Avocado	*Persea americana*	T	NL	I						X		
MAGNOLIACEAE (Magnolia Family)												
Southern magnolia	*Magnolia grandiflora*	T	NL	I						X		
MALVACEAE (Mallow Family)												
Bull mallow	*Malva nicaeensis*	H	NL	I			X	X	X	X		
Cheeseweed	*Malva parviflora*	H	NL	I				X	X	X	X	
MYOPORACEAE (Myoporum Family)												
Myoporum	*Myoporum laetum*	T	NL	I	Moderate			X	X	X		
MYRTACEAE (Myrtle Family)												
Blue gum	*Eucalyptus globulus*	T	NL	I	Moderate			X	X	X	X	
Scarlet gum	*Eucalyptus ficifolia*	T	NL	I				X				
NYCTAGINACEAE (Four O'Clock Family)												
Bougainvillea	*Bougainvillea spectabilis*	S	NL	I				X	X	X		
OLEACEAE (Olive Family)												
Oregon ash	*Fraxinus latifolia*	T	FACW	I				X		X		
Olive	*Olea europaea*	T	NL	I	Limited			X				
ONAGRACEAE (Evening Primrose Family)												
Small evening primrose	*Camissoniopsis micrantha*	H	NL	N						X		X
OXALIDACEAE (Oxalis Family)												
Creeping wood sorrel	*Oxalis corniculata*	H	FACU	I		X	X					X
Bermuda buttercup	*Oxalis pes-capre*	H	NL	I	Moderate		X	X	X	X	X	X
PAPAVERACEAE (Poppy Family)												
California poppy	*Eschscholzia californica*	H	NL	N					X	X		
PITTOSPORACEAE (Pittosporum Family)												
Victorian box	*Pittosporum undulatum*	T	NL	I			X	X		X		
PLANTAGINACEAE (Plantain Family)												
English plantain	*Plantago lanceolata*	H	FAC	I	Limited	X		X	X	X	X	
Common plantain	*Plantago major*	H	FAC	I				X				
PLATANACEAE (Sycamore Family)												

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITY - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot and/or Pipeline Landing
Western sycamore	*Plantanus racemosa*	T	FAC	N		X		X		X	X	X
POLYGONACEAE (Buckwheat Family)												
California buckwheat	*Eriogonum fasciculatum*	S	NL	N								X
Seacliff buckwheat	*Eriogonum parvifolium*	S	NL	N							X	X
Common knotweed	*Polygonum aviculare ssp. depressum*	H	FAC	I				X				
Curly dock	*Rumex crispus*	H	FAC	I	Limited		X	X	X	X	X	
MYRSINACEAE (Myrsine Family)												
Scarlet pimpernel	*Anagallis arvensis*	H	FAC	I		X	X			X		X
RANUNCULACEAE (Buttercup Family)												
Virgin's bower	*Clematis ligusticifolia*	V	FAC	N			X			X		
ROSACEAE (Rose Family)												
California rose	*Rosa californica*	S	FAC	N							X	
California blackberry	*Rubus ursinus*	PV	FAC	N							X	
Cotoneaster	*Cotoneaster pannosa*	S	NL	I	Moderate			X		X		
Toyon	*Heteromeles arbutifolia*	S	NL	N				X	X		X	
Peach	*Prunus persica*	S	NL	I			X	X		X		
Firethorn	*Pyracantha koidzumii*	S	NL	I				X				
Blackberry	*Rubus pensilvanicus*	V	NL	I			X	X				
RUBIACEAE (Madder Family)												
Common bedstraw	*Galium aparine*	H	FACU	N						X		
SALICACEAE (Willow Family)												
Arroyo willow	*Salix lasiolepis*	T	FACW	N		X	X	X		X		X
SAURURACEAE (Lizards-tail Family)												
Yerba mansa	Anemopsis californica	H	OBL	N							X	
SOLANACEAE (Nightshade Family)												
Tree tobacco	*Nicotiana glauca*	S	FAC	I	Moderate					X		X
Nightshade	*Solanum douglasii*	H	FAC	N			X	X				
Black nightshade	*Solanum nigrum*	H	FACU	I		X						
Purple nightshade	*Solanum xanti*	S	NL	N								X
TAMARICACEAE (Tamarisk Family)												
Athel tamarisk	*Tamarix aphylla*	T	FAC	I	Limited					X		
TROPAEOLACEAE (Nasturtium Family)												
Garden nasturtium	*Tropaeolum majus*	H	NL	I			X	X	X			
ULMACEAE (Elm family)												
Chinese elm	*Ulmus parvifolia*	T	UPL	I					X			
URTICACEAE (Nettle Family)												
Dwarf nettle	*Urtica urens*	H	NL	I						X		
VERBENACEAE (Vervain Family)												
Verbena	*Verbena lasiostachys var. scabrida*	H	FAC	N		X						X
ARECACEAE (Palm Family)												
Canary Island palm	*Phoenix canariensis*	T	NL	I	Limited			X				
Mexican fan palm	*Washingtonia robusta*	T	NL	I	Moderate				X			
CYPERACEAE (Sedge Family)												
Tall cyperus	*Cyperus eragrostis*	H	FACW	N			X	X		X		
California bulrush	*Scheonoplectus californicus*	H	OBL	N							X	
JUNCACEAE (Rush Family)												
Spiny rush	*Juncus acutus ssp. leopoldii*	H	FACW	N							X	
POACEAE (Grass Family)												
Slender wild oat	*Avena barbata*	G	NL	I	Moderate	X	X	X	X	X		
Wild oat	*Avena fatua*	G	NL	I	Moderate		X	X	X			

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITY - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot and/or Pipeline Landing
Brachypodium	*Brachypodium distachyon*	G	NL	I	Moderate	X						
Rescue grass	*Bromus catharticus*	G	NL	I			X	X				
Ripgut grass	*Bromus diandrus*	G	NL	I	Moderate	X	X	X	X		X	X
Soft cheat	*Bromus hordeaceus*	G	FACU	I	Limited			X		X	X	X
Red brome	*Bromus madritensis* ssp. *rubens*	G	UPL	I	High	X				X		X
Pampas grass	*Cortaderia selloana*	G	FACU	I	High	X	X	X				X
Bermuda grass	*Cynodon dactylon*	G	FACU	I	Moderate				X			X
Giant wildrye	*Elymus condensatus*	G	FACU	N								X
Erect veldt grass	*Ehrharta erecta*	G	NL	I	Moderate		X					
Italian ryegrass	*Festuca perennis*	G	FAC	I	Moderate			X	X			
Farmer's foxtail	*Hordeum murinum ssp. leporinum*	G	NI	I	Moderate	X	X	X	X	X	X	
Goldentop grass	*Lamarckia aurea*	G	FACU	I						X		
Dallis grass	*Paspalum dilatatum*	G	FAC	I				X				
Kikuyu grass	*Pennisetum clandestinum*	G	FACU	I	Limited		X	X				
Fountain grass	*Pennisetum setaceum*	G	NL	I	Moderate							X
Pennisetum	*Pennisetum villosum*	G	NL	I	Watch	X				X		X
Annual bluegrass	*Poa annua*	G	FAC	I			X					
Smilo grass	*Stipa mileacea*	G	NL	I	Limited			X	X	X		
Purple needlegrass	*Stipa pulchra*	G	NL	N		X						
Cultivated wheat	*Triticum aestivum*	G	NL	I					X			
Rattail fescue	*Festuca myuros*	G	FACU	I	Moderate	X					X	X

Native Status Notes	Invasiness Notes
N: Native (to the region)	Invasiveness Rating from California Invasive Plant Inventory (2020)
I: Introduced	

Wetland Notes

OBL: Obligate wetland species, occurs almost always in wetlands (>99% probability)
FACW: Facultative wetland species, usually found in wetlands (67-99% probability)
FAC: Facultative species, equally likely to occur in wetland and non-wetlands (34-66% probability)
FACU: Facultative upland species, not usually found in wetlands (1-33% probability)
UPL: Upland species, almost never found in wetlands (<1% probability)
NI: No indicator has been assigned due to a lack of information to determine indicator status
NL: Not listed, assumed upland species

ATTACHMENT B

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21
Applicant/Owner: Chevron State: CA Sampling Point: 1
Investigator(s): Ingamells Section, Township, Range: T4N R25W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2
Subregion (LRR): LRR-C Lat: 34.38792 Long: 119.50824 Datum: WGS 84
Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____ (COASTAL)
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 10' diameter)			
1. Rumex crispus	5	No	FAC
2. Cotula coronopifolia	40	Yes	~~OBL~~ OBL
3. Plantago lanceolata	10	Yes	FAC
4. Cyperus eragrostis	5	No	FACW
5. Medicago polymorpha	10	Yes	FACU
6. Spergularia bocconi	10	Yes	FACW
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 40	x 1 = 40
FACW species ~~10~~ 15	x 2 = ~~20~~ 30
FAC species 15	x 3 = 45
FACU species 10	x 4 = 40
UPL species. ____	x 5 = ____
Column Totals: 80 (A)	155 (B)

Prevalence Index = B/A = 1.9

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7/3	10YR 3/2						Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ✓ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 2

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38832 Long: 119.50828 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____ (COASTAL)
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' diameter)			
1. Cotula coronopifolia	30	Yes	OBL
2. Plantago lanceolata	50	Yes	FAC
3. Medicago polymorpha	5	No	FACU
4. Rumex crispus	2	No	FAC
5.			
6.			
7.			
8.			
	87 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	_____	x 2 =	_____
FAC species	52	x 3 =	156
FACU species	5	x 4 =	20
UPL species	_____	x 5 =	_____
Column Totals:	87 (A)		206 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
		See sample point 1						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1) **(Nonriverine)**
- ✓ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 3

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38807 Long: 119.51027 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is the Sampled Area within a Wetland? (COASTAL) Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus racemosa	80	Yes	FAC
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Heteromeles arbutifolia	15	Yes	UPL
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10' diameter)			
1. Bromus diandrus	30	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	125 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species 80	x 3 =	240
FACU species _____	x 4 =	_____
UPL species 45	x 5 =	225
Column Totals: 125 (A)		465 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
		See sample point 5						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21
Applicant/Owner: Chevron State: CA Sampling Point: 4
Investigator(s): Ingamells Section, Township, Range: T4N R25W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2
Subregion (LRR): LRR-C Lat: 34.38803 Long: 119.51036 Datum: WGS 84
Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is the Sampled Area within a Wetland? (COASTAL) Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	40	Yes	FACW
2.			
3.			
4.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Heteromeles arbutifolia	30	Yes	UPL
2. Baccharis pilularis	10	Yes	UPL
3.			
4.			
5.			
	40	= Total Cover	
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= Total Cover	

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 40	x 2 =	80
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 40	x 5 =	200
Column Totals: 80 (A)		280 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
	See Sample point 5							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 5

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38806 Long: 119.51016 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? (COASTAL) Yes ✓ No ____
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	80	Yes	FACW
2.			
3.			
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. Ambrosia psilostachya	25	Yes	FACU
2. Stipa miliacea	5	Yes	UPL
3. Plantago lanceolata	2	Yes	FAC
4. Artemisia californica (seedlings)	2	Yes	UPL
5.			
6.			
7.			
8.	34		
	~~34~~	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____	= Total Cover	

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x 1 =	____
FACW species	80	x 2 =	160
FAC species	2	x 3 =	6
FACU species	25	x 4 =	100
UPL species	7	x 5 =	35
Column Totals:	114 (A)		301 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/3		7.5YR 4/2	5			sandy loam	Very faint redox depletions
6->12	7.5YR 4/3						loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 6

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38797 Long: 119.51036 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? (COASTAL) Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	100	Yes	FACW
2.			
3.			
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Heteromeles arbutifolia	20	Yes	UPL
2. Quercus agrifolia	30	Yes	UPL
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. Hedera helix (seedlings)	2	No	FACU
2. Bromus diandrus	75	Yes	UPL
3. Oxalis pes-caprae	4	No	UPL
4.			
5.			
6.			
7.			
8.			
	81	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____	= Total Cover	

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x 1 =	____
FACW species	100	x 2 =	200
FAC species	____	x 3 =	____
FACU species	2	x 4 =	8
UPL species	129	x 5 =	645
Column Totals:	231 (A)		853 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/3		7.5YR 4/2	2			~~Loamy~~ sandy loam	
6-12	7.5YR 4/3						loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

very faint redox depletions

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 7

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38786 Long: 119.51043 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland? (COASTAL) Yes ✓ No ____
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Salix lasiolepis	90	Yes	FACW
2. Heteromeles arbutifolia	3	No	UPL
3.			
4.			
5.			
	93	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. Bromus diandrus	5	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____	= Total Cover	

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 = ____	
FACW species 90	x 2 = 180	
FAC species ____	x 3 = ____	
FACU species ____	x 4 = ____	
UPL species 8	x 5 = 40	
Column Totals: 98 (A)	220 (B)	

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
	See sample point						6	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 8

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38779 Long: 119.51025 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? (COASTAL) Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diamet)			
1. Artemisia californica	25	Yes	UPL
2. Baccharis pilularis	5	Yes	UPL
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 10' diamet)			
1. Plantago lanceolata	60	Yes	FAC
2. Medicago polymorpha	20	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 = ____	
FACW species ____	x 2 = ____	
FAC species 60	x 3 = 180	
FACU species ____	x 4 = ____	
UPL species 50	x 5 = 250	
Column Totals: 110	(A)	(B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
	See sample point 6							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 9

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38785 Long: 119.57052 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓ (UPLAND)
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Baccharis salicifolia	75	Yes	FAC
2.			
3.			
4.			
5.			
	75 = Total Cover		
Herb Stratum (Plot size: 10' diameter)			
1. Bromus diandrus	50	Yes	UPL
2. Geranium dissectum	5	No	UPL
3. Medicago polymorpha	25	Yes	FACU
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	75	x 3 =	225
FACU species	25	x 4 =	100
UPL species	55	x 5 =	275
Column Totals:	155 (A)		800 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/3						loamy sand	
6-12	7.5YR 4/4						loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 10

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38576 Long: 119.50619 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: (coastal)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diamet)			
1. Salix lasiolepis	100	Yes	FACW
2.			
3.			
4.			
5.			
	100 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species 100	x 2 =	200
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: 100 (A)		200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21
Applicant/Owner: Chevron State: CA Sampling Point: 10A
Investigator(s): Ingamells Section, Township, Range: T4N R25W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2
Subregion (LRR): LRR-C Lat: 34.38584 Long: 119.50606 Datum: WGS 84
Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is the Sampled Area within a Wetland? (Coastal) Yes ✓ No _____
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Salix lasiolepis	100	Yes	FACW
2.			
3.			
4.			
5.			
	100 = Total Cover		
Herb Stratum (Plot size: 10' diameter)			
1. Oxalis pes-caprae	40	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 = _____	
FACW species 100	x 2 = 200	
FAC species _____	x 3 = _____	
FACU species _____	x 4 = _____	
UPL species 40	x 5 = 200	
Column Totals: 140 (A)	400 (B)	

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 10A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 11

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38781 Long: 119.51821 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ____ (CONTAC)
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diam)			
1. Baccharis salicifolia	15	Yes	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 10' diameter)			
1. Schoenoplectus californicus	~~95~~ 95	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.	110		
	~~110~~ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	95	x 1 =	95
FACW species	____	x 2 =	____
FAC species	15	x 3 =	45
FACU species	____	x 4 =	____
UPL species	____	x 5 =	____
Column Totals:	110 (A)		140 (B)

Prevalence Index = B/A = 1.3

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 3

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 12

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38790 Long: 119.51233 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____ (COASTAL)
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' diameter)			
1. Platanus racemosa	100	Yes	FAC
2.			
3.			
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Rosa californica	60	Yes	FAC
2.			
3.			
4.			
5.			
	60	= Total Cover	
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	____	= Total Cover	
Woody Vine Stratum (Plot size: 15' diameter)			
1. Rubus ~~californicus~~ ursinus	35	Yes	FAC
2.			
	35	= Total Cover	

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 = ____	
FACW species ____	x 2 = ____	
FAC species 195	x 3 = 585	
FACU species ____	x 4 = ____	
UPL species ____	x 5 = ____	
Column Totals: 195 (A)	585 (B)	

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: B

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 3438780 Long: 119.51200 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? (COASTAL) Yes ✓ No ____
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	15	No	FACW
2. Platanus racemosa	85	Yes	FAC
3.			
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Rosa californica	75	Yes	FAC
2.			
3.			
4.			
5.			
	75	= Total Cover	
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	____	= Total Cover	
Woody Vine Stratum (Plot size: 15' diameter)			
1. Rubus ursinus	25	Yes	FAC
2.			
	25	= Total Cover	

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	____	x 1 =	____
FACW species	15	x 2 =	30
FAC species	185	x 3 =	555
FACU species	____	x 4 =	____
UPL species	____	x 5 =	____
Column Totals:	200 (A)		585 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? ✓ Yes ____ No ____

Remarks:

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 14

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38772 Long: 119.51180 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is the Sampled Area within a Wetland? (CONTACT) Yes ✓ No _____
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 10' diamet)			
1. Juncus acutus	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	100	x 2 =	200
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Patch ~ 25' x 100' along south side of Trail

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No [illegible] indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 15

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38771 Long: 119.51169 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? (COASTAL) Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	95	Yes	FACW
2.			
3.			
4.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Encelia californica	40	Yes	UPL
2. Rhus integrifolia	10	Yes	UPL
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 10' diameter)			
1. Bromus diandrus	50	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	50	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____	= Total Cover	

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species 95	x 2 =	190
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species 100	x 5 =	500
Column Totals: 195 (A)		690 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 16

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38765 Long: 119.51141 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____ (COASTAL)
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diam)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	100	Yes	FACW
2.			
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species 100	x 2 =	200
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: 100 (A)		200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21
Applicant/Owner: Chevron State: CA Sampling Point: 17
Investigator(s): Ingamells Section, Township, Range: T4N R25W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2
Subregion (LRR): LRR-C Lat: Long: Datum: WGS 84
Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ____
Hydric Soil Present? Yes ____ No ____
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? (COASTAL) Yes ✓ No ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	100	Yes	FACW
2.			
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Encelia californica	15	Yes	UPL
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 10' diameter)			
1. Salix lasiolepis (seedling)	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 105	x 2 =	210
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 15	x 5 =	75
Column Totals: 120 (A)		285 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 18

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38749 Long: 119.51074 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? (COASTAL) Yes ✓ No ____
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diam)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	100	Yes	FACW
2.			
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diam)			
1. Rhus integrifolia	40	Yes	UPL
2.			
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 100	x 2 = 200
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 140 (A)	400 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 19

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: _____ Long: _____ Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____ (CONTRC)
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diamph)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	100	Yes	FACW
2.			
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diamph)			
1. Rhus integrifolia	20	Yes	UPL
2. Encelia californica	20	Yes	UPL
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 100	x 2 =	200
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 40	x 5 =	200
Column Totals: 140 (A)		400 (B)

Prevalence Index = B/A = 2.9

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carpinteria O+G Facility City/County: Carpinteria Sampling Date: 4/20/21

Applicant/Owner: Chevron State: CA Sampling Point: 20

Investigator(s): Ingamells Section, Township, Range: T4N R25W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): <2

Subregion (LRR): LRR-C Lat: 34.38682 Long: 119.50916 Datum: WGS 84

Soil Map Unit Name: Xerothents, cut and fill areas NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____ (COASTAL)
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' diameter)			
1. Atriplex lentiformis	100	Yes	FAC
2.			
3.			
4.			
5.			
	100 = Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species 100	x 3 =	300
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: 100 (A)		300 (B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

No data

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators

Appendix C-5

Marine Biological Resources Study

MARINE BIOLOGICAL RESOURCES STUDY

DECOMMISSIONING AND REMEDIATION OF THE CARPINTERIA OIL AND GAS PROCESSING FACILITIES SANTA BARBARA COUNTY, CALIFORNIA

Project No. 2002-5211

Prepared for:

Chevron West Coast Decommissioning Program
3916 State Street, Suite 200
Santa Barbara, CA 93105

Prepared by:

Padre Associates, Inc.
1861 Knoll Drive
Ventura, California 93003

DECEMBER 2021

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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1.0 INTRODUCTION

This Marine Biological Resources Study (Study) has been prepared on behalf of Chevron USA (Chevron) in support of the Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities Project (Project). The proposed Project includes demolition of surface and subsurface facilities and remediation of any subsurface soil and groundwater contamination at the Carpinteria Onshore Oil and Gas Processing Facility, as well as subsea pipeline removal from the shore out to State Waters (three nautical miles) (Project Site). The Project will also include the removal of pipelines from the bluff and beach areas adjacent to the Casitas Pier and west of the Carpinteria Harbor Seal Rookery.

This Study includes a description of the proposed offshore Project activities, followed by the study methodology section, which describes desktop study and analytical methods used to assess the biological resources within the Project site. The methodology section includes a review of literature concerning historical site use, special-status species, sensitive habitats, and general biological site conditions. The environmental setting describes abiotic and biotic conditions at the Project site including climate, substrates, typical habitats and associated algal, marine plant and wildlife species, and special-status species reported in or near the Project Site. A review of regulatory requirements is then provided, and the final section summarizes the avoidance and minimization measures currently proposed by Chevron to reduce Project impacts to less than significant levels.

2.0 BACKGROUND

Chevron is planning the decommissioning of onshore and offshore oil and gas facilities associated with the Carpinteria Oil and Gas Facility. Given the marine biological nature of this Study, the following Project description focuses on the beach, nearshore and offshore components of the Project. A summary of terrestrial biological resources is provided in a separate report. Decommissioning and remediation of the Carpinteria Oil and Gas Processing Facilities from the beach to the boundary of State Waters (three nautical miles) will include:

Beach Crossing and Offshore Pipelines (State Waters)

- Pig and flush pipelines in preparation for removal
- Removal of offshore Project pipeline segments out to 3-mile State waters limit
- Removal of nearshore beach crossing pipeline segments
- Recycling/disposal of all materials removed from the Project site(s)
- Restoration in accordance with the Site Restoration Plan (once approved)

2.1 LOCATION AND LAND USE

The onshore Project Site is located in the eastern portion of the City of Carpinteria, California, between U.S. Highway 101 and the Pacific Ocean. The offshore Project site is located between the onshore Project Site and the State water boundary within the Santa Barbara Channel (Figure 2-1 - Offshore Project Site and Study Area). The onshore facilities developed at the Project Site historically have been used to process oil and gas produced from the Summerland, Carpinteria, Santa Clara, and Sockeye Fields located within the Santa Barbara Channel. The associated offshore pipelines area located within State Lease Nos. PRC 3133, 3150, 7911, and 4000 on submerged lands leased from the City (from shore to 2 miles offshore) and County (from 2 to 3 miles offshore). Ownership of the Project Site was originally obtained by Chevron (formerly Standard Oil Company) in 1959 and subsequently sold to Venoco in 1999. Chevron reacquired ownership of the Project Site in an agreement between Chevron and Venoco in 2017.

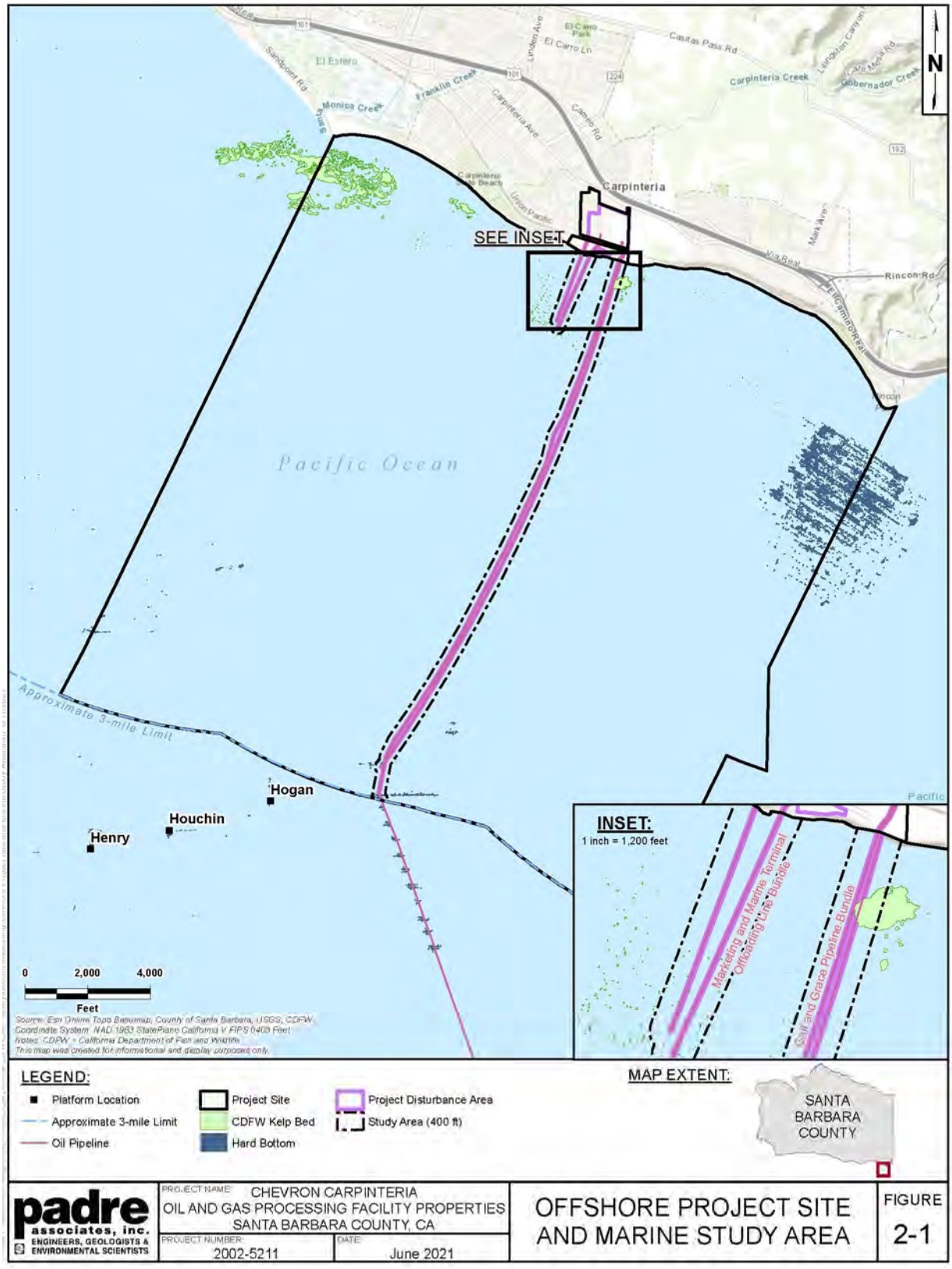

Figure 2-1. Offshore Project Site and Study Area

2.2 PROJECT DESCRIPTION SUMMARY

Demolition and remediation activities will be broken into three primary areas according to their respective location and supporting construction methodologies. The three areas include the Onshore Processing Facility (including the area extending to the bluff face), Beach Crossing (bluff face to mean high tide line), and Offshore Pipeline Segments (mean high tide out to 3 nm State waters limit). Due to the marine biological nature of this Study, the following Project Description will focus on two Project areas: The Beach Crossing and Offshore Pipeline Segments. A full description of beach and offshore Project activities can be found in the Project Description (Padre, 2021).

2.2.1 Beach Crossing and Offshore Pipeline Decommissioning

Two operational areas are present within the beach crossing and offshore Project site: The Marketing and Marine Terminal Offloading Lines Bundle and the Gail and Grace Pipeline Bundle/10-inch oil pipeline area. Table 2-1 below lists the pipeline components for each operational area, lengths of pipeline to be removed, and the anticipated removal methods.

The proposed Project will require the mobilization of an offshore marine equipment spread consisting of either a dynamically positioned or anchored work barge(s) with support vessels. A commonly used offshore spread for pipeline removal projects consists of a derrick barge with deck crane (i.e., M/V Salta Verde or equivalent sized vessel) and tending tug, a materials barge (M/V Abalone Pt. or equivalent sized vessel) and tending tug, and a crew boat for transit between the nearest harbor and the offshore Project Site. In addition, a commercial dive support vessel and an offshore survey and surface navigation vessel may be required to locate and track progress during pipeline recovery operations. The derrick barge and dive vessel spread will include a vessel crane and mounted-winch, jet pump, air lift, cutting equipment, and recovery rigging to provide options for uncovering, pulling, cutting and recovery. When working in shallow depths, the derrick barge will require an anchor-handling vessel to run all the vessels anchors to pre-determined anchor locations. Anchoring along the pipeline bundles' corridors will be limited to sandy areas of the seafloor and will not occur on hard-bottom areas.

Table 2-1. Proposed Offshore Final Disposition Summary

Offshore Operational Area	Bundle Components	Pipeline Corridor Length (approximate feet)	Proposed Removal Methods
Gail and Grace Bundle/10-inch Oil Pipeline Area	10-inch oil pipeline 10-inch gas pipeline	19,030	**Offshore**: Reverse installation/under running pipeline utilizing crane barge to lift and cut pipe into sections on barge deck. Removal out to State Waters boundary (three nautical miles). **Surf Zone:** Shore-side and dive crews, remove concreate armoring, excavate
	10-inch oil pipeline (on risers)	17,909	

Offshore Operational Area	Bundle Components	Pipeline Corridor Length (approximate feet)	Proposed Removal Methods
			and recover pipelines to an offshore derrick barge. **Bluff**: Shore-side crews remove concrete armoring and recover concrete pieces and pipelines to the top of bluff via crane.
Marketing and Marine Terminal Offloading Line Bundle	10-inch offloading crude oil line 2, 4-inch subdrain pipelines 6-inch wastewater pipeline	2,843	**Offshore**: Diver-directed hydraulic pipe shear to cut into sections on seafloor and pipe grapple to recover pipe sections to barge deck. Removal out to existing offshore termini. **Surf Zone**: Shore-side and dive crews, excavate, as needed, in surf zone and on beach, and recover pipelines to a derrick barge. Alternatively, pipe could be recovered to top of the bluff via winch and crane (2 locations). Alternatively, a derrick barge could be utilized. **Bluff**: Shore-side crews remove rip rap armoring and recover boulders and pipelines to the top of bluff via crane and/or heavy equipment. Excavate and remove valve box following pipeline removal.
	20” crude oil pipeline 6” wastewater pipeline 8” wastewater pipeline Valve box (on bluff)	3,285	

3.0 METHODOLOGY

3.1 LITERATURE REVIEW

Padre biologists reviewed available facility design information, historic Carpinteria Oil and Gas Processing Facilities reports and seafloor maps, as well as regional marine biological geographic information systems (GIS) data from California Department of Fish and Wildlife (CDFW) and bathymetric mapping from U.S. Geological Survey (USGS) (CDFW, 2021, Johnson et al., 2013). A list of federally listed Threatened and Endangered species was obtained from the U.S. Fish and Wildlife Service (USFWS) and from the National Marine Fisheries Service (NMFS), and are included under Attachment A. The Multi-Agency Rocky Intertidal Network (MARINe) and Partnership of Interdisciplinary Studies of Coastal Oceans (PISCO) Databases were reviewed to assess the potential for biological resources and to determine the likelihood of occurrence for special-status species and/or sensitive and regulated habitats on the site. Special-status taxa that are known to exist or have the potential to exist on the Project site were also identified through a review of relevant literature.

3.2 DESKTOP STUDY

A biological resources study area was identified prior to beginning desktop studies. The study area includes all temporary disturbance areas, vessel and barge spread area and a 400-foot buffer from potential anchor locations (based on water depth). Boundaries of the study area are depicted in Figure 2-1. Reconnaissance surveys were conducted to familiarize with the lay-out and spatial limits of the study area; however, no focused field surveys were conducted within the study area at this time.

4.0 ENVIRONMENTAL SETTING

The offshore Project site is located between the onshore Project Site bluff edge and out to the State Waters line within northern side of the Santa Barbara Channel. The Marketing and Marine Terminal offloading line bundle terminates at approximately a 60-foot (18-meter) water depth, while the Gail and Grace pipeline bundle extends from its landfall at the Project site then out into City of Carpinteria and County of Santa Barbara deeded tidelands, continuing to the three-mile State Waters boundary and then eventually southward to Platforms Grace and Gail. Water depths within the offshore Project Site range between zero and approximately 150 feet (46 meters). The local climate of nearshore and offshore waters of the Project Site is comprised of temperatures averaging between 55 to 65 degrees Fahrenheit and winds from the west, that range from eight to 16 miles per hour (mph); however, winds speed near the coast can be much lower than those in open waters (Argonne National Laboratory, 2019). The Project site lies southeast of regionally important coastal migration and topographic landmarks, Point Conception, Point Arguello and Santa Ynez Mountains, and north of the California Channel Islands. The region is a major biogeographic transition zone offshore, where the cold-temperature waters of the Oregonian Province meet with the warm-temperate waters of the San Diego Province. This transition zone has resulted in the development of distinctive communities and foraging grounds for migrating wildlife.

4.1 MARINE HABITAT DESCRIPTIONS

4.1.1 Sandy Beach Habitat

The Project Site is located at Carpinteria Beach/Tarpits Park, which is heavily utilized by the public during most of the year. The beach habitat within this area is comprised of a gradually sloping sandy beach area that is located to the south of the bluff within the study area and extends to the intertidal zone. Due to regular inundation of saltwater from high tides and wave activity, wind, and dynamic soils, the sand beach habitat does not support vegetation. However, deposits of kelp detritus and driftwood from extreme high tide periods provide cover for a variety of avifauna and marine invertebrates in portions of this habitat. The amount of available habitat from these deposits of kelp detritus and driftwood debris fluctuates throughout the year based on ocean tides and wave activity.

4.1.2 Intertidal Habitats

The intertidal zone within the study area consists primarily of sand with a mosaic of intermittent low- to medium-relief rocks and soft-bottom sediments. In addition, the Casitas Pier pilings provide submerged artificial substrates in the intertidal zone. The intertidal zone is a dynamic environment influenced in part by daily tidal fluctuations (leading to high concentrations of sunlight, and periods of aerial exposure) and wave forces. Organisms residing within the intertidal zone are characterized by hardy species that are capable of withstanding stresses associated with waves and daily tidal fluxes. Where it occurs, hard substrate provides habitat structure and a semi-permanent surface that algae, benthic, and sessile organisms may attach to. Areas with hard substrate within the intertidal zone (i.e., rocky intertidal) can be areas of rich species diversity and abundance; however, due to the seasonal deposition and retreat of sand from the beach, relatively few specialized species live in the dynamic sand habitat within the study

area. Commonly documented species include crustaceans such as sand crab (*Emerita analoga*), enchinoderms, arthropods, polychaetes, and mollusks. Common intertidal species found on exposed rocks and pier pilings include mussels (*Mytilus californianus*), barnacles (*Balanus* spp.), various species of red and brown turf algae, and other biofouling bryozoans and non-native species.

The intertidal substrates throughout the nearshore study area includes mixed substrate types consisting of sand and exposed bedrock, as well as low to medium-relief rock reefs along the mean low-tide line. In general, substrate types are similar along the length of the shoreline within the study area with exposed rock located along the western edge of the lease boundary and on the east side of Casitas Pier where exposed rock reef provides haul-out habitat for a Pacific harbor seal (*Phoca vitulina richardii*) rookery.

Surf grass beds (*Phyllospadix* sp.) are commonly found along the southern California intertidal reefs and are known to provide cover and habitat structure for intertidal invertebrates and marine alga. Surf grass can be observed form shore growing on the surface of intertidal rocks in the study area and previous site visits during low tide events have identified surf grasses in subtidal habitats; however, its presence may fluctuate on a seasonal basis depending on the intensity of sand deposition or wave action. Further study will be required to determine if eelgrasses (*Zostera* sp.) is present in the study area. The nearest monitored eelgrass bed at a southern facing coastline is located approximately 18.5 miles northwest of the Project Site, in 20 to 25 feet of water offshore Goleta Beach (Santa Barbara Channelkeeper, 2010).

4.1.3 Subtidal Habitats

As with the intertidal zone, the mixed sedimentary and rock reef habitat continues offshore along the subtidal study area. Wave exposure, sediment grain size, and depth are the main physical factors that influence the composition of subtidal benthic communities. Soft substrate habitats with small sand grain size within the subtidal zone typically have a lower diversity and abundance of species than those areas with hard substrate. However, the sandy subtidal environments support communities of organisms that are unique to this environment, and as such are important to marine ecosystems. Organisms typically found in sandy subtidal environments include but are not limited to tube worms (*Diopatra ornate*), sand dollars (*Dendraster excentricus*), and various species of crabs, sea stars, snails, and demersal fish. The Casitas Pier is located within soft substrate habitat; therefore, the seafloor beneath the Pier is expected to be dominated by soft substrate species. In addition, the pier pilings provide man-made structure for subtidal organisms to attached to including mussels, barnacles, tunicates, bryozoa, porifera, anemones (*Anthopleura elegantissima*), decorator crabs (*Loxorhynchus grandis* and *L. crispatus*), sea stars (*Pisaster* sp., *Patiria miniata*) red rock crabs (*Cancer* spp.), and rock scallop (*Crassedoma giganteum*).

In subtidal areas off the southern California coast where hard/rocky substrate is available, giant kelp (*Macrocystis pyrifera*) communities (i.e., kelp forests) are often present. Kelp forests are an important part of the marine ecosystem in that they provide habitat structure and substrate surfaces for many epibiotic, benthic and sessile organisms, and provide food, shelter, and nursery habitat for migratory and resident species of fish, marine mammals, and invertebrates. Recent site visits and a historic review of satellite imagery (June 2002 through March 2020), as well as kelp bed data from CDFW identified a kelp bed located approximately 470 feet east from the

offshore end the Casitas Pier (Figure 2-1). Common fish species may utilize the kelp bed and near-by pier structure and shallow rock reefs for foraging and breeding. Species that are likely to occur include surfperches (*Embiotoca jacksoni*, *Rhacochilus vacca*), wrasses (*Oxyjulis californica, Halichoeres semicinctus)*, and adult and young-of-year-rockfish (*Sebastes* spp.). In addition, there is the potential that juvenile bocaccio (*Sebastes paucispinis)*, a CDFW managed special-status rockfish species, may occur within the subtidal study area.

4.1.4 Pelagic and Benthic Habitats

The open water habitat within the offshore pipeline corridors support migration and foraging habitat for marine mammals, reptiles, and avifauna. Water depth between the subtidal zone and the boundary of California State waters (three nautical miles) ranges between approximately 30 to 148 feet (9 to 45 meters) and therefore would support species that are adapted to live at those depths. The primary substrates within the offshore segments of the pipeline corridor have been characterized as fine- to medium-grained smooth sediments, with infrequent areas of mixed smooth sediment and bedrock, coarse-grained sand, gravel, cobbles (Johnson et al., 2013). Remote Operated Vehicle (ROV) surveys have reported that the majority of the pipeline corridor is buried under soft sediments from approximately -45 to -140 feet and then intermittently exposed to the State waters limit (-148 feet) (Aqueos, 2019). Epifauna of deeper waters in sedimentary habitats and those species found growing or foraging on exposed pipeline segments include plumose anemone (*Metridium senile*), bat stars (*Patiria miniate*), and rockfish (*Sebastes* sp.).

4.2 WILDLIFE

The nearshore rocky coastline, sedimentary benthic seafloor, and open water habitat within the study area provide habitat for a wide variety of resident and migratory wildlife species. Special-status wildlife species (i.e., endangered, threatened, rare, or other special-status species) occurring, or potentially occurring, within the Project site and surrounding area are discussed in Section 4.5 below.

The composition, topography, water depth and other physical characteristics of marine communities determine the diversity and abundance of wildlife species residing in the study area. Wildlife species known to occur within the habitats present within the beach and offshore Project Site are discussed below.

4.2.1 Birds

Many bird species rely on intertidal and subtidal habitats and surf grass beds as places to rest or forage for food. Bird species with the potential to occur along the beach and intertidal habitat include semipalmated plover (*Charadrius semipalmatus*), whimbrel (*Numenius phaeopus*), marbled godwit (*Limosa fedoa*), sandpiper (*Calidris* spp.), and gulls (*Larus* spp.). Bird species that have a potential to occur within the subtidal habitat include but are not limited to western grebe (*Aechmophorus occidentalis*), surf scoter (*Melanitta perspicillata*), cormorants (*Phalacrocorax* spp.), and California brown pelicans (*Pelecanus occidentalis*).

Bird species commonly associated with nearshore open waters of the central and southern California coast have the potential to occur in the open waters of the Project site. These birds include but are not limited to western grebes, brown pelicans, loons (*Gavia* sp.), Cassin's auklet (*Ptychoramphus aleuticus*), cormorants, gulls, surf scoters, eiders (*Somateria spectabilis*), and

murres (*Uria aalge*). These marine bird species feed on small schooling fish, squid, and zooplankton, and forage in open water where prey is concentrated near the water's surface. In addition, several special-status species have the potential to migrate and/or forage in the offshore study area including California least terns (*Sternula antillarum*), Ashy storm petrels (*Oceanodroma homochroa*), and black storm petrels (*Oceanodroma melania*).

4.2.2 Marine Invertebrates

The epifauna of the shallower sedimentary habitats typically includes several species of macro-invertebrates, including sea stars, Pacific sand dollars (*Dendraster excentricus*), and slender crabs (*Cancer gracilis*), as well as polychaete worms and mollusks. The rocky substrata tend to support a generally more diverse epibiota, comprised of macrophytic algae, urchins (*Strongylocentrotus* spp.), sea stars, and cnidarians (anemones and solitary corals).

Abalone are known to inhabit nearshore rocky reef habitats along the southern California coast. Black and white abalone (*Haliotis cracherodii* and *H. sorenseni*) are both federally endangered species protected under FESA and are considered rare in the study area. Black abalone live in rocky intertidal and subtidal reefs (out to 18 feet deep) where they are generally found in rock crevices and feed on drifting giant kelp (*Macrocystis*) and feather boa kelp (*Egregia menziesi*i). White abalone live on rocky substrates alongside sand channels and are found at depths of 50 to 180 feet. They feed on algae that accumulates within the sand channels between deep rock reefs and are more often found out of crevices but camouflaged by the algae that grows on their shells. Other abalone species that could be found in the study area include red (*H. rufescens*), pink (*H. corrugate*), green (*H. fulgens*), and pinto (*H. kamtschatkana*), whose populations are managed by CDFW.

4.2.3 Fish

Fish assemblages off southern California are comprised of both year-round residents and migratory species. The abundance of some year-round residents, such as northern anchovy (*Engraulis mordax*), may fluctuate considerably as new cohorts of juveniles migrate inshore or develop from larvae during spring and summer months. Substrate composition, wave exposure, depth, and presence of kelp or seagrass often determine fish species composition in a particular area. The study area provides habitat for demersal species, such as sanddabs (*Citharichthys* spp.), California halibut (*Paralichthys californicus*), or Pacific staghorn sculpin (*Leptocottus armatus*) that are associated with soft substrates. Other species such as white croaker (*Genyonemus lineatus*) or barred surfperch (*Amphisticus argenteus*) inhabit the water column but feed on invertebrates living in the substrate. Still others are restricted mainly to the water column, such as anchovy, sardine (*Sardinops sagax*), topsmelts (*Atherinidae*), striped bass (*Morone saxatilis*), or white seabass (*Atractoscion nobilis*), where they feed on midwater plankton or other midwater fishes. Isolated hard substrate features may occur at a small portion of the open water study area. These hardbottom deeper reefs attract different assemblages of fishes, primarily rockfish (*Sebastes* sp.), which could transit through the region during localized movements.

Grunion (*Leuresthes tenuis*) is a member of the silverside family (*Atherinidae*) that uses sandy beaches from Monterey Bay to Central Baja California for spawning. Twice a month, at new and full moons between March and early September, grunions come ashore during the two or three nights following the highest tide. Grunion bury their eggs four to five inches below the surface, with maturation occurring in ten days. The next spring high tide reaches the eggs, induces

them to hatch, and carries the larvae offshore where they mature. Grunion runs are more common along northern Santa Barbara County Beaches; however, there is the potential the species may occur seasonally within the study area.

4.2.4 Marine Mammals and Sea Turtles

Baleen whales, toothed whales (including dolphins), and pinnipeds (California sea lion [*Zalophus californianus*] and Pacific harbor seal [*Phoca vitulina richardsi*]), could occur in the study area, in addition to an active rookery for Pacific harbor seal on the exposed rock and sandy beach on the east side of the Casitas Pier. The harbor seal rookery is discussed further below in Section 4.4.1.3 (Pinniped Haul-Outs). Some species of marine wildlife are seasonally present within the study area while others are resident species. All marine mammals are protected by the Marine Mammal Protection Act (MMPA) of 1972, and all sea turtles in U.S. waters are listed under the Federal Endangered Species Act (FESA). These laws are overseen by the National Marine Fisheries Service (NMFS). Marine mammals and sea turtle are discussed below in Sections 4.3, 4.4, and 4.5. Although rarely encountered, marine turtles occasionally are reported within waters off the southern California coast, and could potentially occur within the study area. Populations of marine turtles have been greatly reduced due to over harvesting and loss of nesting sites in tropical coastal areas. Sea turtles breed at sea and the females return to their natal beaches to lay their eggs; however, sea turtles do not nest anywhere along the California coast. The four listed sea turtles that may occur within the study area include the endangered Leatherback turtle (*Dermochelys coriacea*) and Loggerhead turtle (*Caretta caretta*), and the threatened Green turtle (*Chelonia mydas*) and Olive Ridley turtle (*Lepidochelys olivacea*). Although several occurrences of sea turtles have been documented off the southern California coast, the likelihood of their occurrence in the study area is considered low.

4.2.4.1 Marine Mammal Hearing and Noise Thresholds

NMFS, in coordination with National Oceanic and Atmospheric Administration (NOAA), has identified acoustic threshold (received sound level) criteria above which marine mammals are predicted to experience changes in their hearing sensitivity, either permanent or temporary hearing threshold shifts (PTS or TTS, respectively). Physiological responses such as auditory or non-auditory tissue injuries are known as Level A Harassment in the MMPA and harm in the FESA. Level A Harassment becomes a concern when the sound levels from human-made sounds reach or exceed the acoustic thresholds associated with auditory injury in marine species. PTS is a permanent, irreversible increase in an animal's auditory threshold within a given frequency band or range of the animal's normal hearing. TTS is a temporary, reversible increase in the threshold of audibility at a specific range of frequencies. While TTS is not an injury, it is considered Level B Harassment by the MMPA and harassment by the FESA. In addition, along with TTS, Level B harassment includes behavioral impacts. Several variables can characterize sound, including frequency and intensity. Frequency describes the pitch of a sound and is measured in hertz (Hz), while intensity describes the loudness of a sound (i.e., sound pressure level [SPL]) and is measured in decibels (dB), which are measured using a logarithmic scale (e.g., a 10-dB increase represents a 10-fold increase in sound intensity). Sound intensity for underwater applications is typically expressed in dB referenced to in units of pressure in micropascals (1 µPa[1]).

[1] 1 µPa is the reference sound pressure for sound in water.

General underwater Project activities such as jetting, pipe-cutting, vessel transit, as well as construction equipment on the surface, have the potential to temporarily increase ambient noise levels in the local marine environment. While tidal currents and waves produce hydrodynamic sounds, which register at very low frequencies (<100 Hz), ship traffic and underwater construction noise can range from 10 to 1000 Hz (USACE 2015).

Disturbing, harassing, injuring, or killing a protected species is prohibited by the MMPA. General underwater construction noise levels, related to pipe cutting and underwater excavation, are not anticipated to exceed harassment thresholds published by NMFS in the *Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing*. The major contributors to underwater noise from excavation jetting include sounds involving the movement of sediment, water, and air against the seabed, and ship machinery sounds associated with the lowering and lifting of equipment. Project vessels produce noise primarily with their propellers, motors, and gears. The faster the propeller rotates the more cavitation noise, and the higher the frequency of noise produced (i.e., a slowly rotating propeller generates low frequencies [below 10 Hz] and a faster spinning propeller can produce frequencies up to 20 kilohertz [kHz]). Noise levels from marine vessels can range from <150 dB re 1 µPa2s to over 190 dB re 1 µPa2s at 1 meter from the sound source (USACE 2015). Underwater pipe-cutting and shearing can increase noise levels in the immediate work area with disturbance of sediments and operating machinery; however, the noise levels differ from site to site depending on seafloor substrates, water depth and specific equipment. At close ranges, underwater equipment sound levels can have physiological and behavioral effects on fish and marine wildlife; however, marine wildlife will likely avoid underwater work areas and equipment and would not stay close enough to the equipment to experience injury or mortality. Marine wildlife will likely leave the area of their own volition and disperse to available and suitable habitat within the greater Project region; therefore, marine wildlife are not expected to experience impacts from underwater construction noise.

Beach/bluff and Surf Zone construction noise, related to operating heavy equipment, concrete demolition and ground disturbance has the potential to temporarily increase noise levels adjacent to the harbor seal rookery discussed in detail in Section 4.4.1.3. The NMFS has established in-air sound thresholds for sea lion and harbor seals that are set at 100 dB and 90 dB, respectively. The harbor seal rookery is largely abandoned in the summer and fall, due to unrestricted, seasonal public access and beach activities, which will correspond to when the proposed beach and offshore Project activities will occur; therefore, Project activities are not expected to cause incidental harassment of marine mammals.

4.2.5 Non-Native Aquatic Species

Non-native aquatic species (NAS), also known as non-indigenous species, include plants, animals, and micro-organisms that have been introduced to new regions through various human activities. In coastal environments, commercial shipping is the most significant vector for invasions, and vessel biofouling and ballast water are considered the primary contributors of NAS. Once established, NAS can cause significant ecological, economic, and human health problems in the receiving environment, including altering the structure and function of ecosystems, causing declines in native and commercial fisheries, and spreading human pathogens. CDFW recognizes 347 NAS with established populations in California coastal waters (CDFW Office of Spill Prevention and Response [OSPR], 2014). The origin of many NAS is unknown; however, the

majority of NAS in California appear to be native to the northwest Pacific or northeast Atlantic. NAS could be present on the pilings of Casitas Pier or on exposed segments of Project pipelines.

Caulerpa taxifolia is an invasive alga with bright green, feathery, fern-like fronds that is native to tropical waters and has been a nuisance in southern California harbors. It can form dense mats and grow up to three inches per week, displacing native aquatic plants and animals. Caulerpa has the potential to significantly reduce the native diversity and abundance of marine algae and animals once it has invaded. Caulerpa taxifolia can grow in shallow coastal lagoons as well as in deeper ocean waters, possibly to depths of greater than 150 feet (nearly 50 meters). Prior to offshore decommissioning activities, focused marine biological surveys will be completed to determine the presence or absence of Caulerpa within the offshore the Project site in accordance with the standard resource agency requirements.

4.3 WILDLIFE CORRIDORS

Multiple species of cetaceans (whales and dolphins,), marine turtles, and pinnipeds (seals and sea lions) have been recorded within the State waters offshore Santa Barbara County. Most of the species can occur for long durations within the greater Project region, although seasonal abundances of these taxa vary; pinnipeds and some dolphins are year-round residents. For example, Pacific harbor seals and California sea lions are year-round residents within the study area and utilized several beaches, rocky headlands, as well as floating docks and pier loading decks as haul-out areas.

Other marine species are migratory, such as the gray whale (*Eschrichtius robustus*), or seasonal, such as the humpback whales (*Megaptera novaeangliae*) and are more abundant during specific months. Large, baleen whales are known to spend the summer months feeding in northern latitudes building up fat stores to sustain them through the winter and then migrating to warmer, sheltered waters in Baja California, Mexico, Hawaii, and/or Central America for calving and breeding during winter months. Large baleen whales may be present in the study area during their migrations through the Santa Barbara Channel in areas where convergence zone produce large aggregations of prey, such as krill, small schooling fish, and squid. There are no known cetacean breeding areas offshore California; however, there are several Biologically Important Areas (BIAs) for blue and humpback whales offshore of the Project area, which are based on known areas for high-concentration of feeding animals. BIAs for gray whales are based on their migratory corridor as they transit between primary feeding areas located in northern latitudes and breeding areas offshore Mexico (Calambokidis et al., 2015). The BIAs are primarily centered along areas near the continental shelf edge in waters that are deeper than the Project area. Whales are at their highest densities in these areas from June to October when prey species present and water temperatures are favorable.

Blue and Humpback whale feeding BIAs are located within the Santa Barbara Channel and around San Miguel Island. Blue whales are seasonally more likely to occur in the Project area and within the greater Santa Barbara Channel between June and October, while Humpback whales are seasonally more likely to occur between March and September (Calambokidis, 2015).

Gray whale migration BIAs are present along the entire coast of California. The migration corridor used by most gray whales is within 6 miles (10 kilometers) of the coast, including the Channel Islands, and those whales with calves will migrate closer to the coast during their

Northbound transit (Calambokidis et al., 2015). Gray whales can be seasonally present in the Project area during their southern migration from October to March and then again from late January to July, peaking in April.

In addition to the regional convergence zones that provide coastal upwelling and foraging opportunities, the California Channel Islands provide essential nesting and feeding grounds for 99 percent of breeding seabirds in Southern California (Argonne National Laboratory, 2019). The Project region supports a diverse assemblage of birds due to the area's unique location along the Pacific Flyway migration corridor. Over 400 species of bird are recorded migrating to the Channel Islands which provide essential feeding and nesting grounds for 99 percent of the breeding seabirds in Southern California, and important wintering areas and stop over points for shore birds (Argonne National Laboratory, 2019). The spring coastal seabird northern migration, which begins in late February, is in full swing by mid-February, with the peak movement of hundreds of individual birds occurring between late March and early May (Lehman, 2019). Pelagic species begin to arrive offshore in early May to mid-June, such as phalaropes, jaegers, several alcids, Black-footed Albatross, shearwaters, and storm-petrels. During early June the last of the shorebirds and coastal seabirds are still moving north. Southbound transient and migrant shorebirds begin to arrive in Santa Barbra County by late June and large numbers are present by the end of July; however, due to the region's temperate climate fall migration is quite protracted, with large numbers of migrants still present between mid-August and mid-November, as well. However, southbound transients pass slightly farther offshore and are harder to detect in large numbers from along the southern coast of Santa Barbara County.

The Project Site does not include areas around the Channel Islands; however, the Project region is known as a migration corridor between offshore foraging and island nesting areas.

4.4 SENSITIVE HABITATS AND PROTECTED AREAS

4.4.1.1 Marine Protected Areas

MPAs are afforded protection with the CDFW under the Marine Life Protection Act. The following designations are managed within the West Coast MPA network: State Marine Reserve (SMR), State Marine Conservation Area (SMCA), and State Marine Recreational Management Area (SMRMA). The closest MPA to the Project site is the Goleta Slough SMCA, which is located approximately 19 miles (mi) (30 kilometers [km]) west of the study area. Project activities will not occur within an MPA.

4.4.1.2 Critical Habitats

The study area is not within a designated critical habitat area for marine species. The nearest aquatic critical habitat is designated for southern California steelhead and is located approximately one mile west of the study area within Carpinteria Lagoon as well as Rincon Creek, located approximately two miles southeast of the study area (Hydrologic subarea 331534); however, Project activities will not occur within critical habitat areas (NMFS, 2005).

4.4.1.3 Pinniped Haul-Outs

The California south coast provides a diversity of haul-out locations such as rocky shorelines, sandy beaches, estuaries and mudflats. California sea lion and harbor seals have several haul-outs along beaches and on shallow, rocky outcroppings.

The Carpinteria Harbor Seal Rookery and Preserve (rookery) is located adjacent to the study area approximately 160 feet east of the Casitas Pier (Figure 4-1). The rookery is accessible to the public during low tides to the west from Carpinteria Beach State Park and from Rincon Point to the east. The bluffs overlooking the colony are on private property now owned by Chevron, who continues to allow public access for viewing of the harbor seal rookery. The next nearest mainland harbor seal rookery is at the Mugu Lagoon, at Pt. Mugu Naval Air Warfare Center in Ventura County, making the Carpinteria rookery one of a few known active harbor seal rookeries in Southern-central California.

In addition to year-round Federal and State protections, the City of Carpinteria closes the beach surrounding the rookery for 750 feet (230 meters) to the east and west of the colony from December 1 through May 31 of each year to protect breeding seals and seal pups. Public access and projects related to oil field operations are not allowed on this part of the beach during the seasonal closure. In addition, waters out to 1,000 feet (305 meters) offshore from the closed beach area is restricted to personalized watercraft; however, offshore oil-field related crew and supply vessels are exempt from this law. In addition to the City legislation, the Coastal Land Use Plan for Santa Barbara County includes marine mammal haul-out and pupping grounds as environmentally sensitive habitat areas (ESHA).

The local harbor seal population has been monitored and counted on annual basis since 1982 (MRS, 2008). In addition, the Carpinteria Seal Watch volunteers provide counts on a daily basis during the harbor seal breeding season (end of January to late-May). Due in large part to the beach closure ordinance and the efforts of the Seal Watch volunteers, the local breeding population has continued to expand from 13 seals in 1977 to a maximum of 240 seals (adults and pups) recorded in May 2017 (MRS, 2008; Carpinteria Seal Watch, 2021). However, these numbers are potentially underestimating the overall local population given that the best time to assess population numbers is during molting season in the summer and fall, when the greatest number of animals haul-out (MRS, 2008). Since the beach is open to the public during the molting season, this rookery is largely abandoned in the summer and fall, which will correspond to when the proposed beach and offshore Project activities will occur. The most recent State-wide count of harbor seals was conducted in 2012 and estimated there are 27,348 seals and that the population has been stable since 2009 but decreased since counts in 2004.

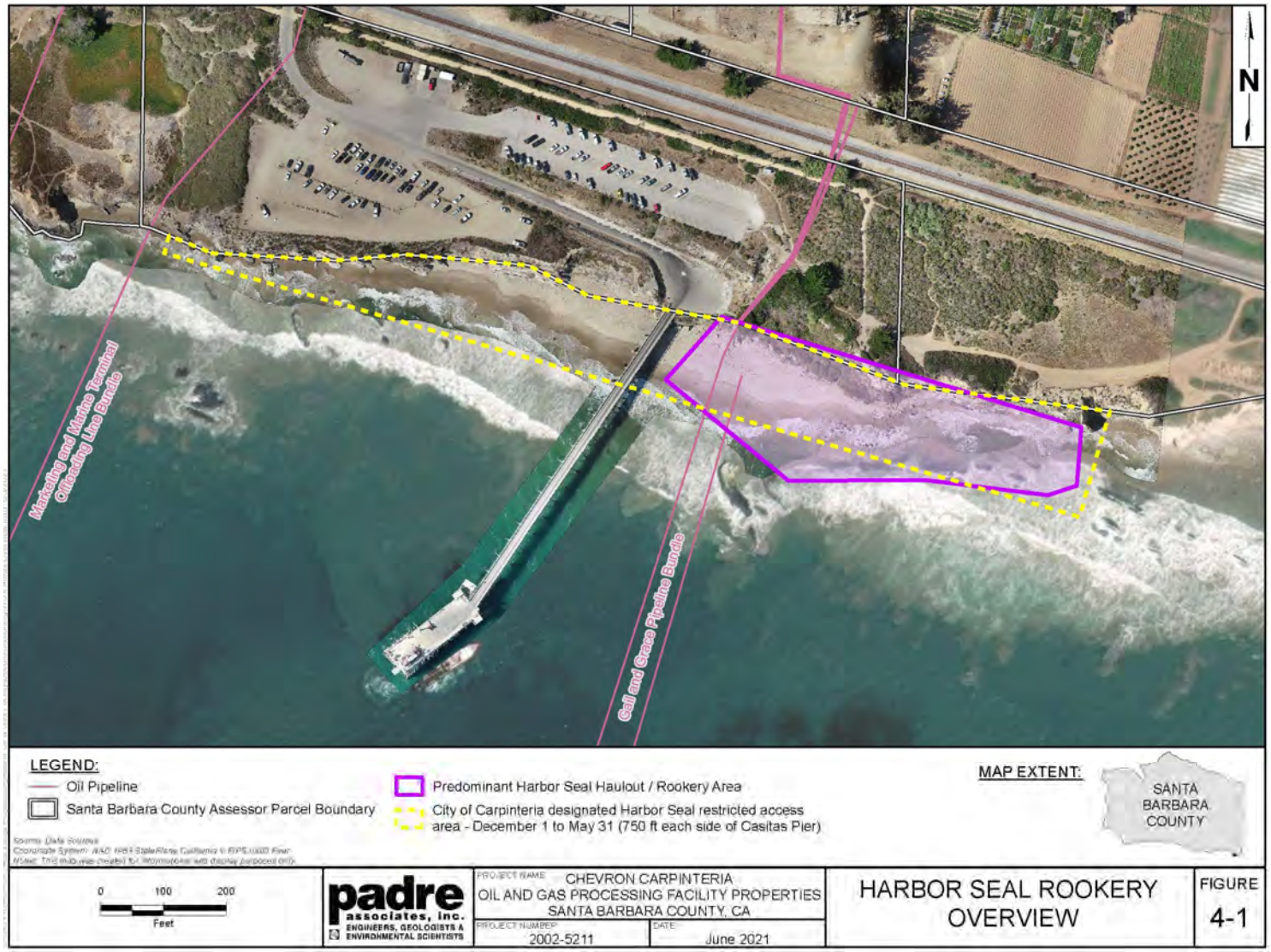

Figure 4-1. Harbor Seal Rookery Overview

4.4.1.4 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) defined essential fish habitat (EFH) as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." According to the NMFS, EFH can include sediment, hard bottom, underwater structures, and associated biological communities (PFMC, 2005). Section 303, subdivision (a)(7) of the MSA requires fishery management councils to identify EFH. EFH that is judged to be particularly important to the long-term productivity of populations of one or more managed species, or to be particularly vulnerable to degradation, should be identified as habitat areas of particular concern (HAPC).

Based on the proposed activities and the assessment of existing habitats, only the adjacent kelp beds within the eastern side of the study area represent essential habitat for managed species (see inset on Figure 2-1). By avoiding these features, the impacts related to removal of the pipelines and associated diver activities are not considered significant impact to the EFH of any of the managed species that could occur within the area. There are no HAPCs designated for highly migratory or coastal pelagic species; and there will be no impacts to EFH for those species. Offshore decommissioning activities will be limited to narrow corridors and distinct anchor points within a sedimentary or sandy seafloor. The sedimentary bottom will be disturbed only during removal activities and Project vessels will not anchor in hard bottom habitat or within areas of sensitive resources. Refer to Appendix C4 - Essential Fish Habitat for a detailed analysis of EFH within the study area.

4.4.1.5 California Coastal National Monument

The California Coastal National Monument managed by the Bureau of Land Management (BLM) provides unique habitat for marine-dependent species on more than 20,000 rocks, islands, exposed reefs, and pinnacles, as well as 7,924 acres of public land at six onshore units: Trinidad Head, Waluplh-Lighthouse Ranch, Lost Coast Headlands, Point Arena-Stornetta, Cotoni-Coast Daires, and Piedras Blancas. The rocky headlands within the California Coastal National Monument provide foraging and roosting areas, nesting habitat for breeding seabirds and haul-outs for marine mammals. The offshore rocks included in the Monument are those exposed above mean high tide within 12 nautical miles of the California mainland. Approximately seven rock features of Monument land, are present within the study area (Figure 4-2). The Monument rock features partially correspond with the protected harbor seal haul-out and rookery and intertidal habitat located within the surf zone. Monument lands will be avoided and will not be disturbed or altered during Project decommissioning activities.

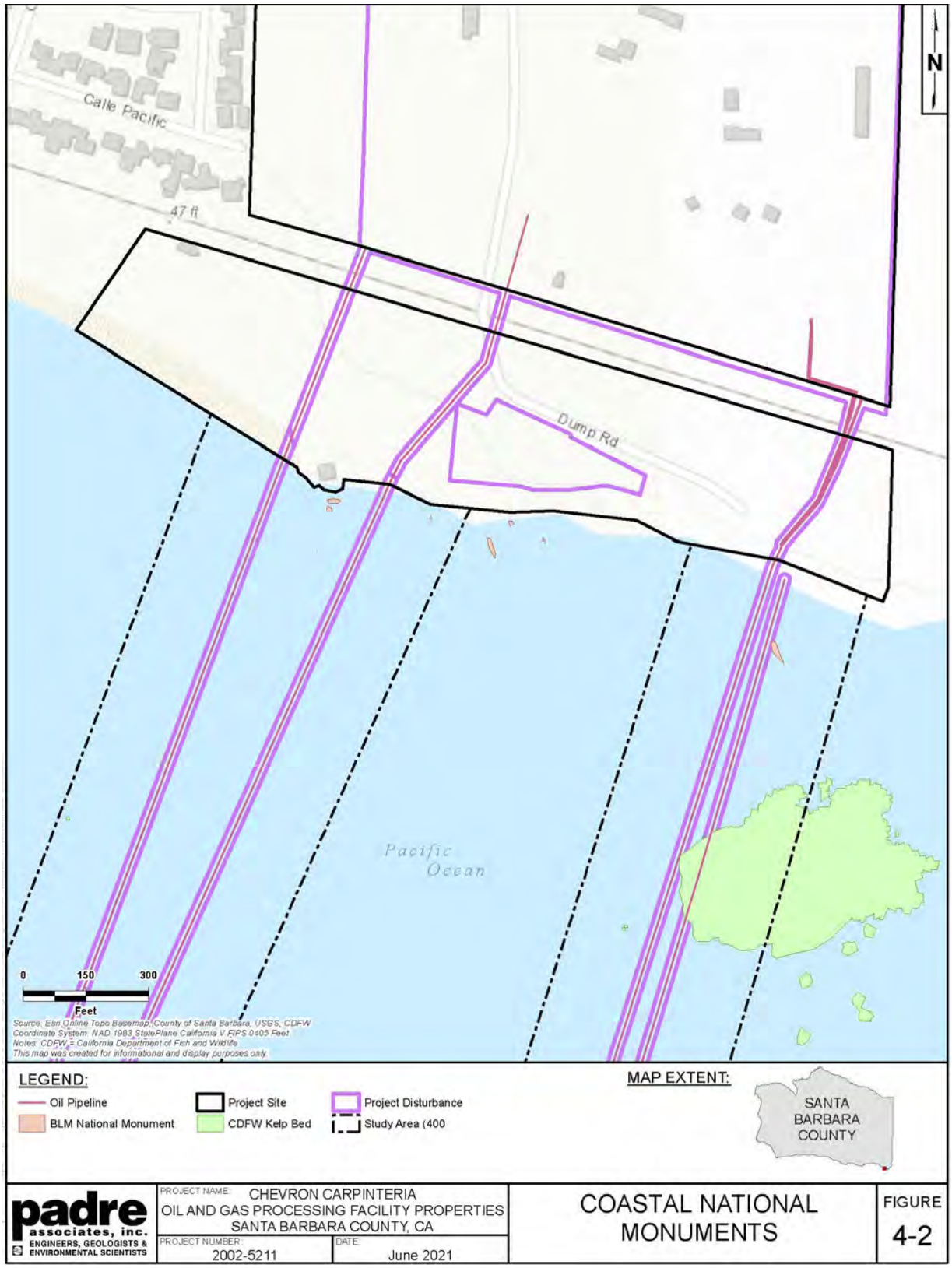

Figure 4-2. Coastal National Monument in Study Area

4.5 SPECIAL-STATUS SPECIES

For the purposes of this Study, a special-status species is a plant or animal species that is:

- Listed as endangered, threatened, or a candidate species under the Federal Endangered Species Act (FESA);
- Listed as endangered, threatened, or a candidate species under the California Endangered Species Act (CESA);
- Listed as a species of special concern by the CDFW;
- Marine mammal species afforded protection by National Marine Fisheries Service (NMFS) under the Marine Mammal Protection Act (MMPA);
- A species that would occur in Habitat Areas of Particular Concern (HAPC) within Essential Fish Habitat (EFH); and/or
- Considered rare, threatened, or endangered under California Environmental Quality Act (CEQA) Guidelines 15380(d) as the species' survival is in jeopardy due to loss or change in habitat.

Based on the literature review and species lists obtained from USFWS (IPaC Trust Resource Report) (Consultation code: 08EVEN00-2021-SLI-0413) and from NMFS (NMFS, 2021) for the Carpinteria quadrangle, a list of special-status species that have been reported within a five-mile radius surrounding the Project site has been compiled. Special-status species with occurrences within five miles of the site that were considered for potential occurrence on the Project site are listed in Table 4-1. Table 4-1 also includes rationale for why certain species were considered unlikely to occur or absent from the study area.

An analysis of the likelihood of occurrence for each species was conducted on the basis of species ranges, previous observations, contemporary sightings, and presence of suitable habitat elements. The Project may be located outside of the known range of some species, or within the geographic range for a certain species, but suitable habitat, such as nesting, migrating corridors or deep-water habitats are absent from the study area.

Table 4-3. Special-Status Species Occurring Within Five Miles of the Offshore Study Area and Considered for Potential Occurrence in the Vicinity of the Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Scientific Name	Common Name	Status[1,2]	Habitat	Probability of Occurrence
PLANTS				
Cordylanthus maritimus ssp. maritimus	Salt Marsh Bird's-beak	FE	Marshes and swamps, coastal dunes, limited to the higher zones of salt marsh habitat.	**Absent.** No suitable habitat present.
Phyllospadix spp.	Surf grass	HAPC	Intertidal rocky substrate in areas with turbulent surf.	**Present.** Species observed on intertidal rocks within study area.
Zostera marina and *Zostera pacifica*	Eelgrass	HAPC	Soft or sandy sheltered seafloor typically in shallow bays or estuaries 0.5 ft to 12 feet (0.1 to 3.7 meters) (*Zostera marina*) and subtidal habitats along protected coastlines (*Zostera pacifica*) from 13 to 56 feet (4 to 17 meters).	**Moderate.** Suitable habitat occurs within study area. Nearest recorded bed occurs in the Ventura Marina, approximately 17 miles southeast of the study area (Sherman and DeBruyckere, 2018).
INVERTEBRATES				
Haliotis cracherodii	Black abalone	FE	Intertidal and subtidal habitats from upper intertidal to 20 feet (6 meters) depth between Point Arena, California to Bahia Tortugas, Mexico. Most commonly observed in complex habitats with deep crevices and drift macroalgae.	**Low.** Suitable habitat is patchy within study area. Nearest occurrence is located at Coal Oil Point Reserve, approximately 21 miles west of the study area (MARINe, 2021).
Haliotis sorenseni	White abalone	FE	Low relief, rock reefs or boulder habitat surrounded by sand between 98 and 196-foot (30 and 60-meter) depths.	**Low.** Lack of suitable habitat within preferred depths within study area. Patchy habitat and small populations are present along Santa Barbara coasts; however, exact occurrence location information is not available.

Table 4-3. Special-Status Species Occurring Within Five Miles of the Offshore Study Area and Considered for Potential Occurrence in the Vicinity of the Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Scientific Name	Common Name	Status[1,2]	Habitat	Probability of Occurrence
FISH				
Acipenser medirostris	Green sturgeon – Southern DPS	FT, CSC	Anadromous fish species found in near shore marine and estuarine environments from Alaska to Baja California, Mexico. Juveniles have been collected in the San Francisco Bay up to the lower reaches of the Sacramento and San Joaquin Rivers. Green sturgeon depend on large rivers to spawn, typically in deep pools in large turbulent mainstem rivers. Spawning is documented in Sacramento River, but little is known about specific spawning locations.	**Low.** The Project is outside of the species' known spawning range. A small number of green sturgeons have been historically reported from the southern California coast. A mature green sturgeon was reported to be caught near Dana Point, Orange County in 1978, but there are no recent observation of green sturgeon within the study area.
Oncorhynchus mykiss	Southern California steelhead	FE	Marine dispersal and rearing habitats consist of nearshore vegetative cover for shelter and prey base near natal rivers/streams.	**Low**. Minimal suitable dispersal habitat present in nearshore study area. Historically present in Carpinteria and Rincon Creeks, approximately one to two miles from the study area, respectively.
Eucyclogobius newberri	Tidewater goby	FT	Lagoons and estuaries where water salinity is less than 12 parts per million and water depth between 3 and 9 feet (one and 3 meters) deep. Marine dispersal is rare and species has no dependency on marine habitats.	**Absent.** No suitable habitat present in study area.
Sebastes paucispinis	Bocaccio	FE (Puget Sound/Georgia Basin DPS), CSC	Shallow water to over 1,000 ft (305 m) deep, over rocky-reefs and soft bottom habitats, but there is strong site fidelity to rocky bottoms and outcroppings	**High.** Suitable habitat areas of exposed pipeline, at deep rock reefs or dispersing through the offshore Project site. Bocaccio are commonly observed beneath Platforms Gail and Grace. (Love et al., 2012).

Table 4-3. Special-Status Species Occurring Within Five Miles of the Offshore Study Area and Considered for Potential Occurrence in the Vicinity of the Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Scientific Name	Common Name	Status[1,2]	Habitat	Probability of Occurrence
REPTILES				
Chelonia mydas	Green sea turtle	FT	Nest at high energy beaches on Ascension Island, Aves Island, Costa Rica and Florida in the U.S. Utilize pelagic convergence zones as juveniles and shallow coastal zones as adults. Small populations inhabit southern San Diego Bay and Long Beach/Seal Beach harbors in Southern California.	**Low.** No suitable nesting or foraging habitat present. Potential migration corridor in offshore study area. Green turtles are rarely observed north of Port of Long Beach in California.
Caretta caretta	Loggerhead sea turtle	FT	Inhabit tropical and temperate waters along continental shelves and estuaries. Rarely observed in Southern California. Nests along coasts of Florida up to North Carolina.	**Low.** No suitable nesting or foraging habitat present. Potential migration corridor in offshore study area. Loggerhead turtles are rarely observed north of San Diego.
Lepidochelys olivacea	Olive Ridley sea turtle	FT	Oceanic and neritic zone migrations in eastern Pacific. Rarely observed along the southcentral coast of California. Nesting from Sonora, Mexico to Columbia and the Galapagos Islands in large arribadas.	**Low.** No suitable nesting or foraging habitat present. Potential migration corridor in offshore study area. Olive Ridley turtles are rarely observed north of San Diego.
Dermochelys coriacea	Leatherback sea turtle	FE	Western Pacific leatherbacks nest in Indonesia and Papua New Guinea and migrate to California central coast following prey jellyfish and sea nettles. Observed offshore central California coast May through December.	**Low.** No suitable nesting habitat present. Potential migration and foraging opportunities based on prey availability within study area; however, leatherback turtles are rarely observed offshore Santa Barbara County.

Table 4-3. Special-Status Species Occurring Within Five Miles of the Offshore Study Area and Considered for Potential Occurrence in the Vicinity of the Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Scientific Name	Common Name	Status[1,2]	Habitat	Probability of Occurrence
BIRDS				
Phoebastria (=Diomedea) albatrus	Short-tail albatross	FE, CSC	Breeding colony occurs on Torishima Island off Japan. Non-breeding population utilized pelagic habitat along Pacific Rim to Gulf of Alaska. Primarily juveniles will use California coastal waters to feed on squid, crustaceans, and fish.	**Low.** Breeding habitat does not occur in study area. Low potential for juvenile birds to occur in study area during fall and early winter (Argonne National Lab, 2019).
Brachyramphus marmoratus	Marbled murrelet	FT, SE	Nest in old growth forests in San Francisco area and Pacific Northwest. Forage in nearshore marine habitats on pelagic fish and invertebrates.	**Low**. Potential nearshore foraging habitat present during late summer/fall migration. Nesting habitat is not present in the study area.
Synthliboramphus scrippsi	Scripps's Murrelet	ST	Pelagic birds that nest on islands in southern California including San Miguel, Santa Cruz, Anacapa, Santa Catalina, San Clemente, and Santa Barbara island. Feed offshore on schooling fish and zooplankton in ocean fronts where prey aggregates.	**High.** Suitable foraging and migrating habitat present in study area. Nesting habitat is not present in study area.
Oceanodroma homochroa	Ashy Storm Petrel	CSC	Pelagic; feed at night on cephalopods, crustaceans, and small fish at waters surface. Nests on South Farallon, Santa Barbara, Prince, and Santa Cruz Islands.	**High.** Suitable foraging and migrating habitat present in study area. Nesting habitat is not present in study area.

Table 4-3. Special-Status Species Occurring Within Five Miles of the Offshore Study Area and Considered for Potential Occurrence in the Vicinity of the Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Scientific Name	Common Name	Status[1,2]	Habitat	Probability of Occurrence
Oceanodroma melania	Black storm petrel	CSC	Pelagic; forage over open water for larval spiny lobster, cephalopods, small fish and crustaceans. Nests on Santa Barbara Island and Sutil Island.	**High.** Suitable foraging and migrating habitat present in study area. Nesting habitat is not present in study area.
Sterna antillarum browni	California least tern	FT	Breeds on sandy beaches with minimal vegetation close to estuaries and embayments. Nearest breeding colony is located at McGrath Beach, approximately 17 miles south of the study area.	**Moderate.** Potential nearshore foraging habitat present during early spring migration. Nesting habitat is not present in the study area.
Charadrius nivosus nivosus	Western snowy plover	FT, CSC	Nests above the drift zone in sandy depressions on dune-backed, sparsely vegetated beaches. Forages for invertebrates from the swash zone to the macrophyte wrack line, on salt flats and along edges of salt marshes and salt ponds.	**Present.** Species observed during non-breeding season (fall and winter) on beaches in study area. Suitable nesting habitat is not present in study area.
MAMMALS				
Delphinus capensis	Long-beaked common dolphin	MMPA	Pelagic; found in large pods (100 to 500 individuals) in shallow, tropical, subtropical, and warmer temperate waters within 50 to 100 miles of the coast and along the continental shelf.	**High.** Suitable foraging habitat present in offshore study area within deeper water depths. Commonly observed in the Santa Barbara Channel.

Table 4-3. Special-Status Species Occurring Within Five Miles of the Offshore Study Area and Considered for Potential Occurrence in the Vicinity of the Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Scientific Name	Common Name	Status[1,2]	Habitat	Probability of Occurrence
Delphinus delphis	Short-beaked common dolphin	MMPA	Pelagic; found in large groups up to thousands in cool temperate water along continental slope in waters 650 to 6,500 feet deep, but in California are common from coast to 300 miles offshore.	**High.** Suitable foraging habitat present in offshore study area within deeper water depths. Commonly observed in the Santa Barbara Channel.
Tursiops truncatus	Bottlenose dolphin	MMPA	Coastal and Pelagic; circumglobally temperate and tropical waters in harbors, bays, estuaries, as well as nearshore coastal waters, and deeper waters over the continental shelf.	**High.** Suitable foraging habitat present in offshore study area within nearshore water depths. Commonly observed in surf zone offshore Santa Barbara County and in the Santa Barbara Channel.
Grampus griseus	Risso's dolphin	MMPA	Pelagic; prefer deeper water (3,300 feet) but can be found feeding around continental shelf following primary prey, squid.	**High.** Suitable foraging habitat present in offshore study area within deeper water depths. Commonly observed in the Santa Barbara Channel.
Balaenoptera musculus	Blue whale	FE	Pelagic; Inhabit broad areas throughout the eastern North Pacific. Concentrations of blue whales have been documented feeding off California each summer and fall.	**Moderate.** Migration habitat is present offshore study area. Blue whales are commonly observed outside the study area in deeper waters, foraging around oil and gas platforms.
Eschrichtius robustus	California gray whale	MMPA	Coastal and Pelagic; migrate through coastal shallow waters in fall and early spring. Breed in warm, shallow lagoons in Baja California. Feed in shallow softbottom habitats on benthic and epibenthic invertebrates by filtering sediments.	**High.** Migration corridors and suitable foraging habitat located in study area. Most likely to be present in study area mid-February through May. Breeding grounds are not present within study area.

Table 4-3. Special-Status Species Occurring Within Five Miles of the Offshore Study Area and Considered for Potential Occurrence in the Vicinity of the Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Scientific Name	Common Name	Status[1,2]	Habitat	Probability of Occurrence
Megaptera novaeangliae	Humpback whale	FE (Central America DPS) FT (Mexico DPS) [3]	Coastal; feed in convergence zones where aggregations of krill occur. Populations off California migrate from Mexico DPS and Central America DPS to feed during summer and fall.	**High.** Suitable migration and foraging habitat are present in offshore and nearshore study area. Commonly observed offshore Santa Barbara County and in Santa Barbara Channel during summer and fall.
Balaenoptera acutorostrata	Minke whale	MMPA	Coastal and pelagic; prefer temperate to boreal waters but are found in tropical and subtropical areas. Minke whales in California/Oregon/Washington are considered residents that do not migrate and establish home ranges. Feed on schools of small fish, crustaceans, and plankton.	**High.** Suitable foraging habitat is present in offshore and nearshore study area. Commonly observed offshore Santa Barbara County and in Santa Barbara Channel during summer and fall.
Balaenoptera physalus	Fin whale	FE	Pelagic migrations from Arctic and Antarctic feeding areas in summer to tropical breeding and calving areas in the winter.	**Low.** Suitable migration and foraging water depths are not present within study area. Fin whales are observed west of the Channel Islands.
Eubalaena glacialis	Northern right whale	FE	Mostly occur in central North Pacific and Bering sea. Spend summers in far northern feeding grounds and migrate south to warmers water in southern California.	**Low.** Species rarely observed offshore Santa Barbara County. Migration routes/patterns unknown. Observations have been recorded in southern California during winter months.
Physeter macrocephalus	Sperm whale	FE	Offshore deep waters, with highest abundance off California from April to mid-June and from August to mid-November.	**Low.** Suitable migrating and foraging water depths are not present in study area. Sperm whales are occasionally observed west of Channel Islands.

Table 4-3. Special-Status Species Occurring Within Five Miles of the Offshore Study Area and Considered for Potential Occurrence in the Vicinity of the Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Scientific Name	Common Name	Status[1,2]	Habitat	Probability of Occurrence
Balaenoptera borealis	Sei whale	FE	Offshore deep waters away from the coastline. Unpredictable distribution. Breeding areas unknown.	**Low.** Suitable foraging water depths are not present in the study area. Rarely observed offshore California. Migration patterns and breeding areas are not well understood.
Orcinus orca	Southern resident Killer Whale	FE	Southern resident killer whale stock consists of a small population off British Columbia, Washington and Oregon. Forage widely along the outer coast of the North Pacific where they follow chinook salmon runs as well as inland waters of the Puget Sound in spring and summer.	**Low.** Study area is outside of the range of federally endangered Southern Resident killer whale DPS.
	West Coast Transient killer whales	MMPA	The West Coast Transient killer whales can be observed in offshore Monterey Bay from April through June feeding on marine mammals and migrating Gray Whale calves. This stock is not a federally listed species.	**Moderate:** Suitable migrating and foraging habitat for west coast transient killer whale occurs in study area. Sighting of transient killer whales are rare but are occasionally observed near Channel Islands.
Zalophus californianus	California sea lion	MMPA	Coastal and beach areas; feed in coastal areas and influenced by anthropogenic structures and fishing activity. Prefer sandy beaches for haul-out or rocky coves for breeding.	**High.** Suitable foraging and haul-out habitat is present in study area. The study area does not support any known rookeries.
Phoca vitulina richardsi	Pacific harbor seal	MMPA	Coastal and beach areas; temperate and coastal habitats within 15 to 31 miles of their natal areas. Perform shallow and deep dives for fish, shellfish, and crustaceans.	**Present.** Rookery and haul-out site present in study area on east side of Casitas Pier, Carpinteria Beach.

Table 4-3. Special-Status Species Occurring Within Five Miles of the Offshore Study Area and Considered for Potential Occurrence in the Vicinity of the Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Scientific Name	Common Name	Status[1,2]	Habitat	Probability of Occurrence
Arctocephalus townsendi	Guadalupe fur seal	FT	Offshore southern California and the Pacific Coast of Mexico. Breed on coastal rocky habitats and caves of Guadalupe Island, Mexico. Recently, few pups have been born on San Miguel Island.	**Low.** Suitable haul-out and rookery habitat is not present in study area and non-breeding season distribution is not well understood. Rare strandings of immature Guadalupe fur seal can occur on beaches between California and Washington states.
Callorhinus ursinus	Northern fur seal	MMPA	Pelagic and coastal; spend most of the year in the ocean. Nocturnal and solitary species. Breeds on rocky and sand beaches of San Miguel Island. May migrate north during summer or some animals are residents around San Miguel Island.	**Moderate.** Suitable haul-out and rookery habitat is present in study area; however, fur seals have not been observed utilizing mainland habitats. Potential foraging habitat available in offshore study area.
Enhydra lutris nereis	Southern sea otter	FT	Coastal; forage and breed in shallow coastal waters associated with giant kelp beds (*Macrocystis*) and bull kelp (*Nerocystis*). Feed on shallow water invertebrates and crustaceans. Current range extends from Pigeon Point to Gaviota Beach, northern Santa Barbara (Hatfield et al., 2019).	**Low.** Minimal suitable habitat present and study area is south of current known range.

[1] Status:
FE = Federal Endangered
FT = Federal Threatened
FC = Federal Candidate
SE = California State Endangered
ST = California State Threatened
SC = California State Candidate
FP = CDFW Fully Protected
CSC = California Species of Special Concern
BCC = USFWS Bird of Conservation Concern
HAPC = Habitat Area of Particular Concern (HAPCs are defined as discrete subsets of EFH that provide important ecological functions and/or are especially vulnerable to degradation)

[2] All marine mammals are Federally protected under the Marine Mammal Protection Act (MMPA).
[3] Individuals from both the Central America and Mexico DPS are known to feed along the California coast.

5.0 REGULATORY SETTING

5.1 FEDERAL

5.1.1 Special-Status Species

The Federal Endangered Species Act (FESA), administered by the USFWS and the NMFS, provides protection to species listed as Threatened (FT) or Endangered (FE), or proposed for listing as Threatened (PFT) or Endangered (PFE). The Services maintain lists of species that are neither formally listed nor proposed but could be listed in the future. These Federal candidate species (FC) include taxa for which substantial information on biological vulnerability and potential threats exists and are maintained in order to support the appropriateness of proposing to list the taxa as an endangered or threatened species. The FESA makes it unlawful to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect an endangered species, or to attempt to engage in any such conduct. Anyone violating the provisions of the ESA and regulations is subject to a fine and imprisonment. An "endangered species" is any species, which the Secretaries of the Department of the Interior and/or the Department of Commerce determine is in danger of extinction throughout all or a portion of its range. A "threatened species" is any species, which the Secretaries determine is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

The United States (U.S.) Marine Mammal Protection Act (MMPA) of 1972, amended 1994, protects all marine mammals, including cetaceans (whales, dolphins, and porpoises), pinnipeds (seals and sea lions), sirenians (manatees and dugongs), sea otters, and polar bears within the waters of the U.S. Specifically, the MMPA prohibits the intentional killing or harassment of these marine mammals; however, incidental harassment, with authorization from the appropriate federal agency, may be permitted. National Oceanic and Atmospheric Administration (NOAA) Fisheries (or National Marine Fisheries Service [NMFS]) is responsible for enforcing the MMPA.

5.1.2 Essential Fish Habitat

Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act protects Essential Fish Habitat (EFH) which is defined as "…those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity." "Waters," as used in this definition, are defined to include "aquatic areas and their associated physical, chemical, and biological properties that are used by fish." These may include "…areas historically used by fish where appropriate; 'substrate' to include sediment, hard bottom, structures underlying the waters, and associated biological communities." "Necessary" means, "the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem." EFH is described as a subset of all habitats occupied by a species (NOAA, 1998).

The National Oceanic and Atmospheric Administration (NOAA) identifies four Habitats of Particular Concern (HAPC) within the southern central California area: estuaries, rocky reefs, seagrass beds, and kelp beds. HAPCs are defined as discrete subsets of EFH that provide important ecological functions and/or are especially vulnerable to degradation. The HAPC designation does not necessarily confer additional protection or restrictions upon an area, but it helps prioritize and focus conservation efforts.

5.1.3 Waters and Wetlands

The Corps and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredge and fill material into jurisdictional "waters of the United States" (WoUS) and wetlands under Section 404 of the Clean Water Act.

The Corps is responsible for the issuance of permits for the placement of dredged or fill material into WoUS pursuant to Section 404 of the Clean Water Act (33 USC 1344). As defined by the Corps at 33 CFR 328.3(a)(3), WoUS are those waters that are used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; interstate waters including interstate wetlands; and territorial seas.

The Corps asserts jurisdiction over traditional navigable waters (TNW) and adjacent wetlands. Under Corps and EPA regulations, wetlands are defined as: "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

5.1.4 Section 10 of the Rivers and Harbors Act of 1899 (33USC 403)

In addition to Section 404, the Corps regulates activities affecting "navigable waters of the United States" under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403). Navigable waters are defined as "…*those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high-water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce* (33 CFR 322.2[a])." Structures or work under or over a navigable WoUS is considered to have an impact on the navigable capacity of the waterbody (33 CFR 322.3[a]).

5.2 STATE

5.2.1 Special-Status Species

The CDFW administers a number of laws and programs designed to protect the State's fish and wildlife resources. Principal of these is the California Endangered Species Act of 1984 (CESA) (Fish and Game Code Section 2050), which regulates the listing and take of State endangered (SE) and threatened species (ST). Under Section 2081 of CESA, CDFW may authorize an incidental take permit allowing the otherwise unlawful take of a SE or ST species.

CDFW maintains lists of Candidate-Endangered species (SCE) and Candidate-Threatened species (SCT). These candidate species are afforded the same level of protection as listed species. CDFW designates Species of Special Concern (SSC) that are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species but may be added to official lists in the future. The SSC list is intended by CDFW as a management tool for consideration in future land use decisions.

5.2.2 Marine Life Protection Act

California adopted the Marine Life Protection Act (MLPA) in 1999 to provide improved protection for the diversity and abundance of California's ocean habitats through a network of marine protected areas (MPAs) with the goals of sustaining, conserving and protecting marine life populations; protecting marine ecosystems; improving recreational, educational and study opportunities provided by marine ecosystems; and protecting marine natural heritage. There is strong scientific evidence that marine protected areas restore and protect the natural diversity and abundance of marine life, and the structure, function and integrity of marine ecosystems.

5.3 LOCAL AND REGIONAL

5.3.1 City of Carpinteria

City of Carpinteria Municipal Code 12.24.090 closes the beach 750 feet (228 meters) east and west of the Carpinteria Harbor Seal rookery on Carpinteria Beach from December 1 through May 31 each year. The closure area also extends out to 1,000 feet (304 meters) offshore during this period.

5.3.2 County of Santa Barbara

The County of Santa Barbara's Coastal Plan defines environmentally sensitive habitat areas as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."

Habitats which are found in the County's coastal zone include: rare and endangered species habitats (as identified by the California Department of Fish and Wildlife), wetlands, streams, near shore reefs, tidepools, offshore rocks, native plant communities, dunes, kelp beds, harbor seal rookeries and hauling out grounds, and seabird roosting and nesting areas.

County policy 30230 (based on the California Coastal Act) requires that marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

County policy 30240(a) requires that environmentally sensitive habitat areas will be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

6.0 AVOIDANCE AND MINIMIZATION MEASURES

The proposed Project has the potential to cause temporary impacts to marine biological species and habitats during pipeline removal activities including impacts from vessel operations, and disturbances during breeding season, sensitive habitat disturbance, oil spills, and introduction of non-native aquatic species. To reduce the likelihood of significant impacts to marine biological resources, the following avoidance and minimization measures will be implemented by Chevron during beach, nearshore, and offshore Project activities.

AMM 1: Environmental Awareness Training. The approved biological monitor(s) will be responsible for conducting an environmental awareness training for all Project personnel to familiarize workers with surrounding common and special-status species and their habitats, applicable regulatory requirements, and measures that must be implemented to avoid or minimize potential impacts to biological resources.

AMM 2: Delineation of Work Limits. Prior to the start of the Project, beach decommissioning work area perimeters will be clearly flagged to ensure heavy equipment and vehicles stay within the permitted disturbance area, minimizing footprints to the extent necessary for equipment staging and activity, and to notify the public to avoid the active work zone. Signage will be posted on each sides of the active work zone alerting pedestrians of the hazards. Natural areas outside of the work zone shall not be disturbed. Designated equipment staging and fueling areas shall also be delineated at this time.

AMM 3: Marine Wildlife Contingency Plan Implementation. A Project Marine Wildlife Contingency Plan (MWCP) will be implemented during all offshore Project activities. A Marine Wildlife Monitor (MWM) shall be present on the offshore Project vessel and within the Beach and Offshore Operational Areas to monitor designated avoidance zones and have the authority to halt Project activities that may impact marine wildlife.

AMM 4. Harbor Seal Monitoring and Protection Plan. The Project Harbor Seal Monitoring and Protection Plan (Appendix C5) will be implemented during decommissioning activities on the bluff/beach and surf zone areas to reduce disturbances to harbor seals in the area. The Plan will include scheduling bluff/beach and surf zone project activities outside of the harbor seal breeding season and beach closure period from December 1 through May 31.

AMM 5: Pre-Decommissioning Marine Biological Dive Surveys. No more than 90 days prior to commencement of offshore activities, Chevron will conduct a pre-decommissioning marine biological survey of the sensitive habitat areas adjacent to the nearshore pipeline corridors. If sensitive seagrass species are identified, anchor locations will be relocated to avoid impacts to these protected habitats and post-decommissioning surveys would be conducted to verify seagrass beds had not been impacted by Project-related activities. Adjustments to decommissioning methodologies in sensitive habitats may be made to reduce impacts to these areas. In addition, ROV or multi-beam geophysical surveys will be conducted at each anchor location to confirm the absence of hard-bottom habitat.

AMM 6: Oil Spill Response and Contingency Plan Implementation. An Oil Spill Response and Contingency Plan (OSRCP) will be implemented during all Project activities in the event of a release of oil or contaminants.

AMM 7: Prevent Introduction of Non-Native Aquatic Species (NAS). All Project vessels will be in compliance with California's state ballast management regulations.

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ATTACHMENT A

USFWS AND NMFS SPECIES LISTS

Chevron Carpinteria Oil and Gas Processing Facilities Decommissioning Project

Following is the copy/pasted results of the informal search of NMFS database to generate a list of species that may be present in the Carpinteria, California Quadrangle. Query performed on June 10, 2021.

Quad Name **Carpinteria**
Quad Number **34119-D5**

- **ESA Anadromous Fish**

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) - **X**
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

- **ESA Anadromous Fish Critical Habitat**

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat - **X**
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Phone: (805) 644-1766 Fax: (805) 644-3958

In Reply Refer To: June 09, 2021
Consultation Code: 08EVEN00-2021-SLI-0413
Event Code: 08EVEN00-2021-E-01380
Project Name: Carpinteria Oil and Gas Processing Facilities Decommissioning Project -offshore component

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve

conflicts with respect to threatened or endangered species or their critical habitat prior to a written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.]

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

Project Summary

Consultation Code: 08EVEN00-2021-SLI-0413
Event Code: 08EVEN00-2021-E-01380
Project Name: Carpinteria Oil and Gas Processing Facilities Decommissioning Project -offshore component
Project Type: OIL OR GAS
Project Description: Decommissioning and removal of surface and subsurface offshore facilities

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.3659627,-119.52806893151833,14z

Counties: Santa Barbara County, California

Endangered Species Act Species

There is a total of 16 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Light-footed Clapper Rail *Rallus longirostris levipes* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6035	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Short-tailed Albatross *Phoebastria (=Diomedea) albatrus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/433	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

Amphibians

NAME	STATUS
Arroyo (=arroyo Southwestern) Toad *Anaxyrus californicus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3762	Endangered
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/57

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/498

Flowering Plants

NAME	STATUS
Gambel's Watercress *Rorippa gambellii*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/4201

Marsh Sandwort *Arenaria paludicola*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2229

Salt Marsh Bird's-beak *Cordylanthus maritimus ssp. maritimus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6447

Ventura Marsh Milk-vetch *Astragalus pycnostachyus var. lanosissimus*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/1160

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

- **ESA Marine Invertebrates**

Range Black Abalone (E) - X
Range White Abalone (E) - X

- **ESA Marine Invertebrates Critical Habitat**

Black Abalone Critical Habitat -

- **ESA Sea Turtles**

East Pacific Green Sea Turtle (T) - X
Olive Ridley Sea Turtle (T/E) - X
Leatherback Sea Turtle (E) - X
North Pacific Loggerhead Sea Turtle (E) - X

- **ESA Whales**

Blue Whale (E) - X
Fin Whale (E) - X
Humpback Whale (E) - X
Southern Resident Killer Whale (E) - X
North Pacific Right Whale (E) - X
Sei Whale (E) - X
Sperm Whale (E) - X

- **ESA Pinnipeds**

Guadalupe Fur Seal (T) - X
Steller Sea Lion Critical Habitat -

- **Essential Fish Habitat**

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH - X
Coastal Pelagics EFH - X
Highly Migratory Species EFH - X

- **MMPA Species (See list at left)**
- **ESA and MMPA Cetaceans/Pinnipeds**

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans - **X**

MMPA Pinnipeds - **X**

ATTACHMENT B

SITE PHOTOGRAPHS

Photo 1. Study area on west side of Casitas Pier and Marketing and Marine Terminal Offloading line bundle area (buried). Date: April 20, 2021, aspect east.

Photo 2. Study area on east side of Casitas Pier with Gail and Grace pipeline bundle (buried) and exposed concrete armament. Date: April 20, 2021, aspect west.

Photo 3. Casitas Pier and overview of harbor seal rookery on the east side of the Pier. Date: April 20, 2021, aspect southeast.

Photo 4. Overview of typical intertidal habitat dominated by mussels (*Mytilus* sp.) within study area. Date: April 20, 2021, aspect south.

Appendix C-6

Carpinteria Harbor Seal Rookery Monitoring and Protection Plan

CARPINTERIA HARBOR SEAL ROOKERY MONITORING AND PROTECTION PLAN

DECOMMISSIONING AND REMEDIATION OF THE CARPINTERIA OIL AND GAS PROCESSING FACILITIES
SANTA BARBARA, CALIFORNIA

Project No. 2002-5211

Prepared for:

Chevron West Coast Decommissioning Program
3916 State Street, Suite 200
Santa Barbara, CA 93105

Prepared by:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401

DECEMBER 2021

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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1.0 INTRODUCTION

This Carpinteria Harbor Seal Monitoring and Protection Plan (Plan) has been prepared on behalf of Chevron U.S.A. (Chevron) in support of the Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities Project (Project). The proposed Project includes demolition of surface and subsurface facilities and remediation of any subsurface soil and groundwater contamination at the Carpinteria Onshore Oil and Gas Processing Facility (Project Site). The Project will also include the removal of pipelines from the bluff and beach areas adjacent to the Casitas Pier and west of the Carpinteria Harbor Seal Rookery. This Plan outlines avoidance and minimization measures intended to reduce the potential for Project-related impacts on the harbor seals during temporary construction activities.

1.1 BEACH AND BLUFF PIPELINE DECOMMISSIONING SUMMARY

The nearshore worksite contains two pipeline decommissioning areas (Figure 1-1). East of the Casitas Pier, the Platform Gail and Grace Pipeline Bundle includes a concrete encased 10-inch oil and 10-inch gas pipeline bundle which originate from Platforms Grace and Gail (formerly through Platform Hope). Additionally, a 10-inch idled oil pipeline from the former Platform Hope, is located on risers east of the Grace and Gail pipelines. The pipelines continue northward up the bluffs and through the Former Sandblast Area, then under the Union Pacific Railroad and into the Main Plant Area.

Additionally, the former Marketing and Marine Terminal Offloading Line Bundle is located west of the Casitas Pier. The Marketing and Marine Terminal mooring area supported two separate pipeline corridors from the onshore facilities which transported refined products from the Marketing Terminal and a separate crude oil line from the onshore Tank 861. The pipelines transect the beach and enter into a rock rip rap revetment below the edge of the bluff. The pipelines are buried within the bluff and leading into the Former Marketing Terminal Area.

1.1.1 Gail and Grace Bundle Pipeline Decommissioning

Beginning at the shoreward termination, in approximately 15 feet of water, the Gail and Grace pipeline bundle will be removed from the surf zone utilizing a combination of shore side construction crews and offshore dive crews. Surf zone and associated beach pipeline removal operations will be scheduled during seasonal work windows with the least amount of sand cover, avoiding the harbor seal rookery beach closure (December 1 through May 31st), and at extreme low tides when necessary, to facilitate safe recovery of each pipeline out to the mean low-low water (MLLW) line.

Working from the beach and the adjacent Casitas Pier, shore side crews will first have to remove the concrete armoring from the 10- -inch pipelines that run to Platform Gail and Grace. The concrete currently protects the pipelines from damage through the surf zone and up to the base of the bluff.

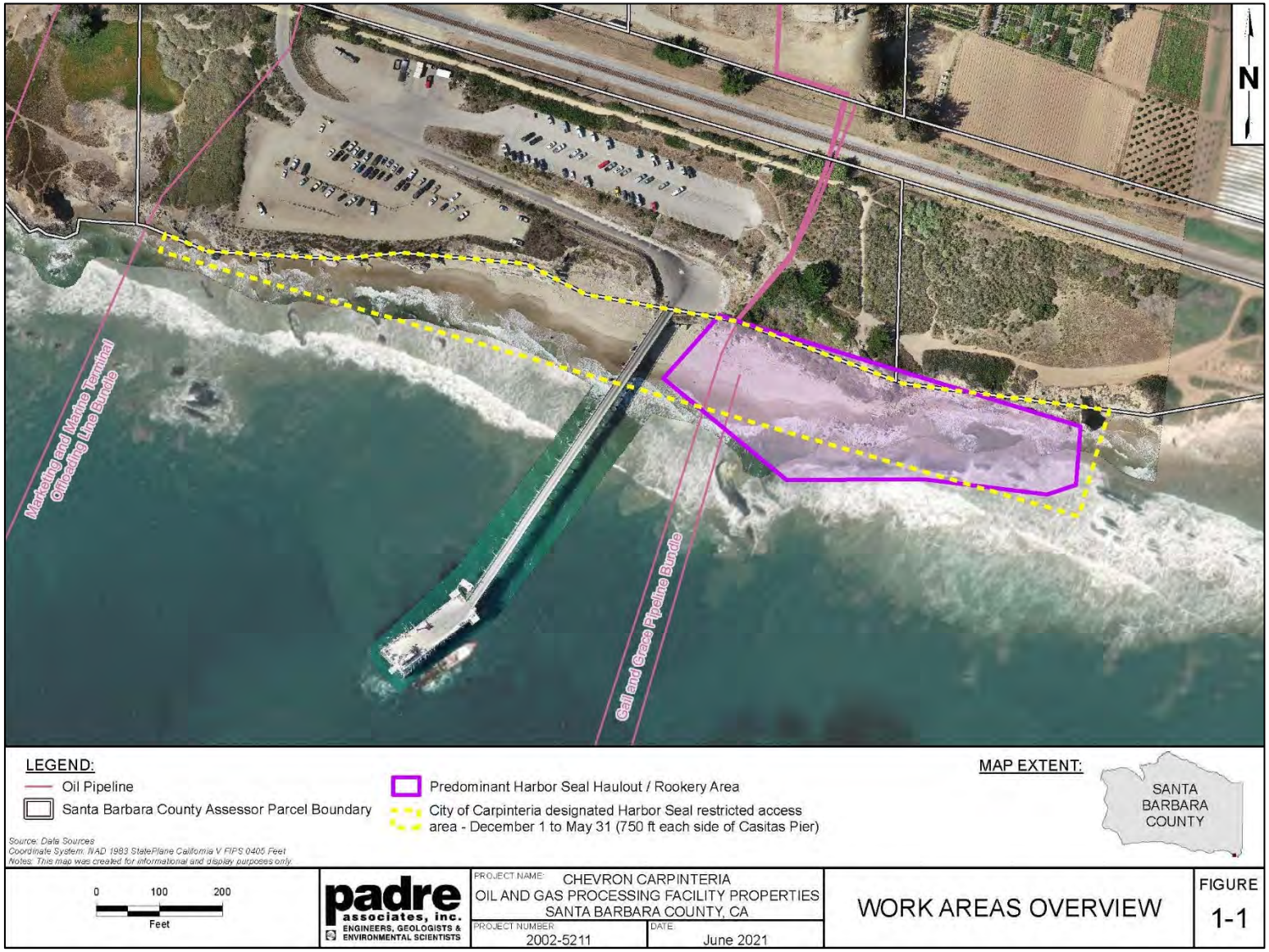

Figure 1-1. Site Location Map

Removal of the concrete armoring will require concrete saws and/or jack hammers and will be done with precision, in order to protect the pipelines underneath. As they are removed, pieces of concrete will be loaded into containers and lifted by the existing pier crane and transported to the asphalt staging area adjacent to the north end of the Casitas Pier for transport/disposal.

Pipelines will ideally be pulled from the surf zone onto an anchored derrick barge with dive support vessels stationed at a safe distance offshore. Divers will then locate the cut end of each pipeline and excavate as needed to prepare the pipe to be pulled offshore. Each nearshore pipeline will be attached to a pull winch or crane and lifted to the deck of the derrick barge.

The decommissioning of the Gail and Grace Bundle to the top of the bluff will be scheduled following the removal of the offshore and surf zone pipelines. All concrete armoring currently surrounding the Gail and Grace pipeline bundle up the bluff will be removed using similar methods as surf zone removal. Concrete pieces will be systematically cut, from the top of the bluff down, and placed into a container suspended from a crane, to be lifted to the staging area. Exposure and removal of the pipeline bundle through the bluff may require trenching techniques into the bluff face, dependent on bluff stability and depth of burial, to expose the pipelines and winch them to a safe location away from the bluff or into the adjacent asphalt staging area at the north end of the Casitas Pier, where they can be cut into disposable pieces and loaded into transport trucks.

The pipeline segments located across the Former Sand Blast Area and leading into the Onshore Processing Facility will be abandoned-in-place, with exception of the portion located beneath the Union Pacific Railroad right-of-way, which will be removed.

1.1.2 Marketing and Marine Terminal Offloading Line Bundle Pipeline Decommissioning

The former Marketing and Marine Terminal Offloading Line Bundle pipeline segments will be removed by sectioning the pipeline on the seafloor and lifting the cut pipe segments to the deck of the barge one section at a time. The offshore segment removal work will be terminated at approximately the 15-foot bathymetric contour line.

Beginning at the shoreline termination, the Marketing and Marine Terminal Offloading Line Bundle will be removed from the surf zone utilizing a combination of shore side construction crews and offshore dive crews. Surf zone removal operations will be scheduled during seasonal work windows with the least amount of sand cover and at extreme low tides to facilitate safe recovery of each pipeline out to the MLLW line. A derrick barge and dive support vessel will be mobilized and positioned at the offshore cut end of the pipelines. Due to shallow depths, the derrick barge will require an anchor-handling vessel to run all the vessels anchors to pre-determined anchor locations. Divers will then locate the previously cut end of each pipeline and excavate as needed to prepare the pipe to be pulled toward the offshore spread, similar to the Gail and Grace Bundle.

Working from the beach, shore side crews will expose each buried pipeline on the beach, if needed, from the shoreward extent of rip rap at the base of the bluffs to the MLLW line. Each pipe will be uncovered as far into the surf zone as safely practicable. The decommissioning of the pipelines within the bluff and vault along the top of the bluff will be scheduled following the removal of the offshore and surf zone pipelines as well as any pipeline segments that run south from the Project plant facilities toward the shore. The removal of pipelines from the bluff will require an excavator, positioned safely away from the bluff edge, to dig a trench to uncover buried segments

of pipe. In addition, all rip rap currently surrounding the 20-inch loading line and associated pipelines will be removed to expose the bluff face. Rip rap will be systematically removed up the bluff to extent necessary with an approved lifting and rigging plan, an excavator with a thumb and soft sling attachments, and loader positioned safely on the bluff. Once the pipelines are fully exposed in the bluff, they will be lifted or winched to a safe location away from the bluff where they can be cut again into disposable pieces.

2.0 CARPINTERIA HABOR SEAL POPULATION AND REGULATIONS

The beach adjacent to the Gail and Grace Bundle Project Site is a documented Pacific harbor seal (*Phoca vitulina richardsii*) haul out area and rookery (Figure 2-1). This beach is one of four harbor seal rookeries in California and documentation suggests that harbor seals have used the site as a rookery for over 100 years MMCG (2002). Use of the area by harbor seals varies seasonally, with pupping predominately occurring between February and March. During the summer months, the area is used as a nighttime haul out. To protect the seals during haul-out and pupping periods, the City of Carpinteria closes the beach to the public from December 1st through May 31st. The beach is closed within 750 feet west and east of the rookery, as well as out to 1,000 feet offshore (Figure 2-1).

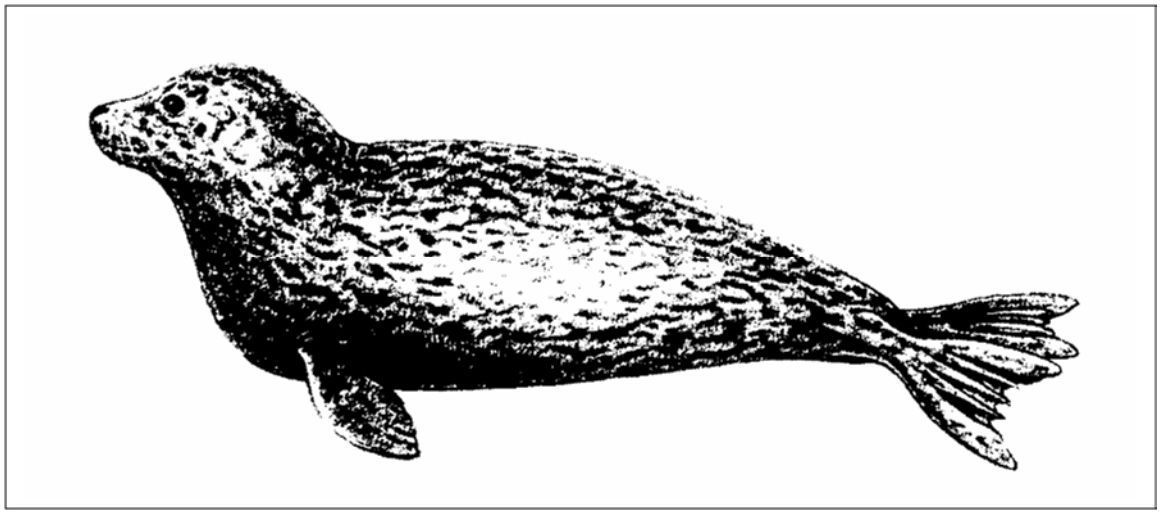

Figure 2-1. Pacific Harbor Seal (Depiction)

The Pacific harbor seal ranges from Cedros Island (Baja California) through the Aleutian Islands and to the Pribilof Islands. There are approximately 27,000 harbor seals along the California Coast (Carretta et al., 2015). Daugherty, 1985 and Yates, 1988 characterize the Pacific harbor seal as chunky-shaped, with a spotted coat, large eyes, and square muzzle; the front flippers are small, and the hind flippers are backward-pointing. Males, which can be up to six feet long and weigh over 300 pounds, are slightly larger than females. Pups wean within four to six weeks of birth and individuals of this species have been known to reach 40 years of age.

The Carpinteria harbor seal rookery is located adjacent to Casitas Pier, which operates daily in support of offshore oil and gas activities. The seals in the area are acclimated, to an extent, to regular human activity around the Pier. During previous repair and construction work around the rookery, harbor seals have been exposed to disturbances including vehicle and boat sounds, machinery, hammering or grinding on the pier, vibratory pile driving and crane activities, and concrete demolition. In addition, human disturbances around the rookery when the beach is open include people walking, jogging, fishing, intentional harassment by children or dogs (on and off leash), low-flying helicopters, and use of watercraft (kayaks, boat, and paddleboards) (California Coastal Commission, 2020).

Current reports indicate that approximately 100 to 150 adults and up to 60 pups can be found at the Carpinteria rookery in February and March (Carpinteria Seal Watch https://carpinteriasealwatch.org/about/). Table 2-1 below provides 2021 month counts from the rookery.

Table 2-1. 2021 Seal Watch Totals

Month	Week	High adult count	High pup count
January	Jan 1 - Jan 3	129	0
	Jan 4 - Jan 10	68	0
	Jan 11 - Jan 17	77	0
	Jan 18 - Jan 24	102	1
	Jan 25 – Jan 31	102	1
February	Feb 1 - Feb 7	87	2
	Feb 8 - Feb 14	92	3
	Feb 15 - Feb 21	92	10
	Feb 22 - Mar 28	91	27
March	Mar 1 - Mar 7	122	45
	Mar 8 - Mar 14	143	53
	Mar 15 - Mar 21	137	50+
	Mar 22 - Apr 28	153	59
April	Mar 29 – Apr 4	137	56
	Apr 5 – Apr 11	122	20+
	Apr 12 – Apr 18	182	10
	Apr 19 – Apr 25	169	2
May	Apr 26 – May 2	169	0
	May 3 – May 9	220	0
	May 10 – May 16	178	0

Harbor seals are a protected species under the Marine Mammal Protection Act of 1972 (MMPA). Under the requirements of the MMPA the take of protected marine mammals is prohibited. Take is defined “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill any marine mammal.” Harassment is defined in the 1994 amendments to the MMPA as “…any act of pursuit, torment or annoyance…” and has two levels: Level A has the potential to injure a marine mammal or marine mammal stock, and Level B has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding or sheltering. Penalties for violating any provision of the MMPA range from $10,000 to $20,000 and imprisonment for no more than one year per incident.

3.0 POTENTIAL IMPACTS

The Carpinteria harbor seal rookery is located approximately 270 feet from the east side of the Gail and Grace pipeline bundle and approximately 1,200 feet east of the Marketing and Marine Terminal Offloading Line Bundle beach and surf zone pipeline removal area(s). Project decommissioning activities, including removal of cement armaments, removal of rip rap, cutting of the pipe into sections and pulling of pipe sections offshore, have the potential to cause a significant disturbance to harbor seals if they are hauled-out on the beach during Project activities. Although no injury or mortality is expected to occur, even Project-related foot traffic on the beach may cause hauled-out harbor seals to startle and flush into the water, which could qualify as a Level B harassment as defined by National Marine Fisheries Service (NMFS) (disrupting behavioral patterns).

The proposed Project will require personnel and small equipment to access and temporarily utilize a portion of the beach. Project activities could result in noise from demolition and from the physical presence of workers and equipment in proximity to the rookery. Due to the sensitivity of hauled-out seals, particularly mother and newborn pups, protective measures will be required to reduce these potential impacts to the maximum extent feasible as described in Section 4.0 (Avoidance and Protection Measures).

4.0 AVOIDANCE AND PROTECTION MEASURES

The Project would occur within the beach and nearshore areas of Casitas Pier. The decommissioning activities will be conducted by a work crew utilizing hand tools and potentially small equipment. Staging of equipment and trucks will occur within the paved parking area east of Casitas Pier. No trucks or equipment will be staged on the beach. Electric and air lines will be run, as needed, from the Project staging area to the immediate work area on the beach and removed each day following work activities. No tools or equipment will remain on the beach overnight.

Project activities will be scheduled during low tide windows and limited to daylight hours only to maximize visibility and ensure safety during repair work. In addition, a Marine Wildlife Monitor (MWM) will remain onsite during all work to ensure that activities are limited to the immediate work area. All Project activities will be conducted in accordance with standard Chevron best management practices (BMPs) and in accordance with all laws and regulations.

Given the biological sensitivity of the Project area, a number of marine wildlife protection measures have been incorporated by Chevron into the Project. These measures have been developed based upon protection measures adhered to during previous work activities in the Project area, as well as direct input from responsible agencies; including the National Marine Fisheries Service (NMFS,) California Coastal Commission (CCC), and City of Carpinteria, as well as input from the Carpinteria Seal Watch Organization. The following marine wildlife protection measures would be followed during the proposed Project activities:

- **Project Timing:** It will be a priority of the Project to schedule activities outside of the pupping season. However, there is the potential the proposed decommissioning Project activities will occur for a short period during the period that the beach is closed to the public. Project activities adjacent to the rookery during pupping season (December 1 through May 31) will be minimized to the maximum extent feasible to conduct pipeline decommissioning activities.
- **Carpinteria Seal Watch Coordination:** Given their extensive database of information regarding the local harbor seal population in this area, the Carpinteria Seal Watch organization will be notified prior to initiation of Project activities on the bluff or beach to best coordinate timing and initiation of work activities. One of the onsite marine mammal monitors will work directly with Seal Watch volunteers present at the overlook to coordinate direct observation of harbor seal activities during Project-related activities.
- **Pre-Project Notifications:** Once coordination with Carpinteria Seal Watch has been completed, Chevron will immediately notify Ms. Tina Fahy (NMFS) regarding upcoming work activities. Additionally, Chevron will notify Ms. Fahy at least 48 hours prior to initiation of bluff or beach Project activities and will include information on the location of mother/pups pairs in relationship to the work area. This notification will be copied to all other responsible agencies, including; but not limited to the California Coastal Commission, U.S. Army Corps of Engineers, Regional Water Quality Control Board, and the City of Carpinteria.

- **Project Personnel:** The number of on-beach personnel will be minimized. Work crews will access the work site to the west of the pier and approach the area adjacent to the foot of the bluff. A marine wildlife monitor will be present at all times during required work activities, including activities scheduled outside of pupping season (June 1 through November 30), until the surf zone and bluff pipeline removal has been completed and all equipment/personnel have left the area.
- **Equipment Storage:** Required equipment will be stored on the paved parking lot above the beach and away from the bluff edge.
- **Marine Wildlife Sensitivity Training:** Prior to the initiation of the Project, personnel will be given marine wildlife sensitivity training. This training will include specifics regarding Project restrictions, operational limits, and ingress/egress methodology. The crews will be instructed to wear neutral colored clothing, and to move slowly during ingress/egress as well as minimize hand gestures or signals during work activities to avoid startling the harbor seals.
- **Minimization of the Work Zone:** Project-related activities on the bluff and beach will be restricted to the minimum area necessary to conduct work.
- **Place a Screen Between the Work Area and Seal Rookery Area:** Due to its close proximity to the harbor seal rookery, Chevron would erect a temporary visual screen between the Gail and Grace pipeline bundle work area and seal rookery area to further reduce the potential for behavioral changes of nearby harbor seals. Installation of the visual screen would be considered if determined to be necessary during pupping season to mitigate visual impacts and conducted in coordination with Carpinteria Seal Watch and a qualified Marine Wildlife Observer. The screen would be approximately 8-feet high by 30-feet wide, would be maintained taut to avoid flapping or excessive movement due to wind or wave action, and would be positioned to screen the immediate Project area from view of the rookery area. The screen would be placed, maintained, and removed in a manner and at times that avoid disturbance to seal present on the beach; for example, placing it before first light on the first day of work and removing it after last light on the final day of work.
- **Minimization of Noise:** Communications between Project personnel will be kept to a minimum. Except in an emergency, no shouting will be allowed. Low volume radio transmissions will be used to reduce potential disturbance to the rookery. Any concrete demolition will be performed outside of the pupping season to minimize noise impacts to nursing seals. Additional noise dampening shields in addition to a temporary screen may be constructed around the work area to reduce the level of noise emitted during work.
- **Best Management Practices:** Repair activities will be performed with the implementation of all Best Management Practices (BMPs). No trash will be discarded on the beach and all trash will be secured in bins with lids. Any Project-generated debris will be removed from the beach and taken to an appropriate disposal facility.

- **Stop-Work Authority:** The on-site MWM will have the authority to stop all operations to avoid harassment of seals. Harassment is defined by the sudden flushing of seals into the water, potentially separating nursing cow and pup pairs, or any abnormal or aggressive behaviors. The monitor will record, photograph, and report compliance with the protective measures throughout the pipeline decommissioning activities.
- **In the Event of Interaction:** In the event of any signs of distress are noted during Project activities, the monitor will notify the construction supervisor and operations will immediately stop Project operations. The monitor will also contact a pre-determined contact at National Oceanic and Atmospheric Administration (NOAA) Fisheries and work activities will not resume until NOAA Fisheries has agreed with any proposed changes to the work procedures.

4.1 NOTIFICATIONS

Chevron will notify applicable agencies, included NOAA Fisheries and California Coastal Commission within 14 days prior to the start of work. Agency notification will include a summary of Project activities that need to be completed and the anticipated work schedule. Additional impact avoidance and minimization measures will be added (if required) following consultation with NOAA Fisheries.

4.2 DATA COLLECTION AND REPORTING

The MWM will ensure that the Project is in compliance with all necessary permits, and that Best Management Practices are followed. The MWM will also be responsible for recording the activities and, if necessary, for stopping the activities in the event that significant changes to harbor seal activities are observed. In addition to briefing all Project personnel on the protective measures prior to initiating work each day, the monitor will delineate the equipment and personnel ingress/egress corridors.

4.3 DATA COLLECTION

Prior to repair activities, the MWM will count and record the number and species of all marine mammals that are within the Project area (within visual range along the beach) and take photographs of the Project site and access route. At regular intervals during the day, the monitor will record the number and location of harbor seals and document the decommissioning activities. Changes in the behavior or number of individuals and/or their proximity to the Project site prior to, during, and immediately following noise-producing activities will be recorded and photographed. The type of activity that promulgated changes in harbor seal abundance or behavior will also be recorded.

During the repair activities, the MWM will also take notes on the weather (i.e. wind direction and speed, percent cloud cover, wave height and direction), non-project human activities, and ex-limital (outside the Project boundaries) observations of avifauna and marine mammals. Although none is expected, should the monitor observe any activity that are considered to be harassment of a marine mammal, that activity will be stopped immediately, and the Chevron Project Manager and NOAA Fisheries representative will be contacted immediately via cell phone.

4.4 REPORTING

Data and observations that were recorded during the removal activities will be presented in tabular and text format in a technical report that will also include copies of photographs. The report will summarize the Project decommissioning activities as well as protective measures and their effectiveness. The technical report will be provided to the regulatory agencies within 30 days of completion of the final beach or bluff decommissioning activities.

5.0 REFERENCES

California Coastal Commission. 2020. Staff Report Follow-on Authorization from an emergency permit to replace to piles at Casitas Pier. May 2020.

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Appendix C-7

Preliminary Restoration/Revegetation Plan

PRELIMINARY RESTORATION/REVEGETATION PLAN

DECOMMISSIONING AND REMEDIATION OF THE CARPINTERIA OIL AND GAS PROCESSING FACILITIES

CARPINTERIA, SANTA BARBARA COUNTY

Project No. 2002-5211

Prepared for:

Chevron West Coast Decommissioning Program
3916 State Street, Suite 200
Santa Barbara, CA 93105

Prepared by:

Padre Associates, Inc.
1861 Knoll Drive
Ventura, California 93003

JUNE 2021

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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1.0 INTRODUCTION

The following Restoration/Revegetation Plan (Plan) has been prepared by Padre Associates, Inc. (Padre) on behalf of Chevron USA (Chevron). This Plan has been developed to outline the restoration process for the areas identified for equipment demolition and soil removal during the Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities Project (Project) located in the eastern portion of the City of Carpinteria, California, between U.S. Highway 101 and the Pacific Ocean (Project Site) (Figure 1-1). This Plan has been written in support of the Project's application for a Conditional Use Permit (CUP)/Coastal Development Permit (CDP) that is being filed with the City of Carpinteria and County of Santa Barbara. Additional details related to the history and purpose of the Project can be found in the Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities Project Description (Padre, 2021a).

This Plan addresses the proposed revegetation that will occur within applicable portions of the Project Site after remediation activities are complete. The Plan provides guidelines for erosion control revegetation or habitat restoration implementation, as appropriate, depending on future potential redevelopment or conservation for each Operational Area. The Plan also provides guidelines for restoration success criteria, monitoring and maintenance, and reporting. The restoration implementation section includes guidelines for the plant palette, plant materials, planting methods, and irrigation. The restoration monitoring and reporting section provides details on performance criteria to measure the success of the restoration, monitoring of restoration progress, reporting requirements and triggers for adaptive management.

1.1 PROJECT SUMMARY

The Project's purpose is to demolish and remove surface and subsurface facilities and subsequent remediation of any contaminated soils at the onshore Carpinteria Oil and Gas Processing Facility to accommodate the Project Site's potential future redevelopment or land use modification to open space along the ocean bluff.

1.2 BACKGROUND

The Project Site is located within an area that has been historically utilized for agricultural production and more recently for and oil and gas development support activities. Historical agricultural production activities documented at the Project Site from the 1920's through 1959 included dry farming, row crop production, orchards (fruit trees and nuts), and commercial flower production (plant nursery). The Carpinteria Oil and Gas Processing Facility has been in operation since 1959 and historically supported offshore Platforms Hazel, Hilda, Hope and Heidi (Carpinteria Field), and Grace and Gail (Santa Clara Field and Sockeye Field). Abandonment of the wells and decommissioning/removal of offshore Platforms Hazel, Hilda, Hope, and Heidi (4H Platforms) from the Santa Barbara Channel were completed in 1996. Although Platform Grace ceased production in 1998, the Plant and Tank 861 continued to receive oil and gas from Platform Gail until approximately 2017.

Most recently, portions of the Project Site were remediated and restored in 2012 to mitigate for impacts related to pesticide impacted soil. The following sites were revegetated

during Winter 2011/2012, completed their monitoring period in Spring 2015 and remain restored and vacant:

- Buffer Zone Area (BZA) –Restored with additional native trees and remained a mosaic of mix woodland and annual grassland following soil remediation.
- Former Nursery Area (FNA) –Restored to pre-project conditions with annual grasses and native herbs following soil remediation. The margins of the sidewalk along Carpinteria Avenue at the northern extent of the FNA were also planted with native shrubs and western sycamore (*Platanus racemosa*).
- Drainage Area No. 4 (DA4) – Restored to support an ephemeral drainage of native facultative wetland species and a mesic wetland plant community with mature native woodland trees.
- Former Sand Blast Area (FSBA) – Restored to native coastal scrub species to blend into surrounding habitat following soil remediation.

Other revegetation activities historically or recently performed by others throughout the Project Site include:

- BZA - A large scale planting of coast live oak (*Quercus agrifolia*) and other trees for creation of a wooded buffer between the Processing Facilities and the homes along Arbol Verde Street to the west of the Project Site.
- Former Marketing Terminal Area (FMTA) – The southern portion of this area was restored with native coastal scrub and chaparral species.
- FSBA, Pier Parking Lot, and Pipeline Bluff Crossing Area – The City of Carpinteria planted both margins of the newly constructed or improved Carpinteria Bluffs trail with native coastal scrub and chaparral species, and western sycamore trees.

LEGEND:

Operational Area

Project Site

MAP EXTENT:

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CARPINTERIA PLANT DECOMMISSIONING SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: June 2021

OPERATIONAL AREAS MAP

FIGURE 1

2.0 BASELINE BOTANICAL SURVEYS

Existing biological resources on the Project Site have been periodically compiled during the course of numerous biological surveys, biological monitoring events, and wetland delineation data collected at different portions of the Project Site from 1998 (as originally documented in 2004) through 2021 in support of various operational, maintenance, demolition, and interim soil cleanup activities conducted during that period. The results of these studies were used to determine the plant palette and performance criteria target values presented in this Plan.

2.1 METHODS

The desktop review included a query of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) to identify reported occurrences of special-status plant and wildlife species and sensitive habitats within the region, as well as review of previous survey reports completed by Padre in support of prior activities on the Project Site (Padre, 2012). Field survey methods consisted of walking systematic transects throughout each Operational Area. The most recent field surveys were conducted in April and May 2021, within the typical blooming period for most plant species including potentially occurring special-status annual plant species. All identifiable plant species observed at the Project Site were documented and the Project Site's botanical inventory derived from previous surveys was updated to include observations of species specific to the Project Operational Areas (Attachment A).

Vegetation mapping of the Project Site was also completed during the April and May 2021 field surveys according to the Manual of California Vegetation, Second Edition (Sawyer et. al, 2009) and is documented in the Terrestrial Biological Resources Study (Padre, 2021b).

2.2 FINDINGS

The majority of the Project Site has been historically cleared for various oil and gas industrial purposes or was planted with landscaping trees (windrows), and thus is highly disturbed from a biological perspective. Vegetation, where present, primarily consists of stands of non-native trees and non-native grasses or ruderal fields, with exception to several native plant restoration areas. Native scrub and non-native groundcover species are also present along the bluffs to the east, west, and south of the Pier Parking Lot. Table 2-1 provides the acreage and locations of each vegetation type throughout the Project Site. The following paragraphs describe on-site vegetation communities in more detail. Figures 2a through 2c provide a vegetation map of the Project Site (Attachment B).

Table 2-1. Vegetation of the Project Site

General Category	MCV2 Classification	Onsite Acreage	Present at:
Tree Windrows	*Eucalyptus globulus* or *camuldulensis* Semi-Natural Woodland Stands (Eucalyptus groves)	7.6	Buffer Zone, Former Nursery Area, Shop & Maintenance Area, MSRC Lease Area, Peninsula Area, Drainage Area No. 4, Former Marketing Terminal Area, Chevron Pipeline Area, and Main Plant Area.
Tree Windrows	*Tamarix* spp. Semi-natural Shrubland Stands (Tamarisk thickets)	0.6	Main Plant Area, and MSRC Lease Area.
Mixed Woodland	*Quercus agrifolia* Woodland Alliance (Coast live oak woodland)	4.7	Buffer Zone, Shop & Maintenance Area, and Drainage Area No. 4.
Mixed Woodland	*Platanus racemosa* – *Quercus agrifolia* Woodland Alliance (California sycamore woodlands)	0.9	Buffer Zone, and Former Sandblast Area.
Arroyo Willow Thicket	*Salix lasiolepis* Shrubland Alliance (Arroyo willow thickets)	0.4	Drainage Area No. 4, Chevron Pipeline Area, Pipeline Bluff Crossing Area, and Former Sandblast Area.
Coastal Scrub	*Artemisia californica* Shrubland Alliance (California sagebrush scrub)	0.6	Buffer Zone, Drainage Area No. 4, and Former Marketing Terminal Area.
Coastal Scrub	*Atriplex lentiformis* Shrubland Alliance (Quailbush scrub)	1.8	Pipeline Bluff Crossing Area, Pier Parking Lot, and Former Sandblast Area.
Coastal Scrub	*Baccharis pilularis* Shrubland Alliance (Coyote brush scrub)	2.1	Pier Parking Lot, and Former Sandblast Area.
Coastal Scrub	*Baccharis salicifolia* Shrubland Alliance (Mulefat thickets)	0.06	Drainage Area No. 4.
Coastal Scrub	*Isocoma menziesii* Shrubland Alliance (Menzies's golden bush scrub)	0.4	Pier Parking Lot.
Chaparral	*Heteromeles arbutifolia* Shrubland Alliance (Toyon chaparral)	0.9	Drainage Area No. 4.

Chaparral	*Rhus integrifolia* Shrubland Alliance (Lemonade berry scrub)	0.7	Pier Parking Lot, and Former Sandblast Area.
Chaparral	*Sambucus nigra* Shrubland Alliance (Blue elderberry stands)	0.2	Former Marketing Terminal Area.
Iceplant Mat	*Carpobrotus edulis* or Other Ice Plants Semi-Natural Herbaceous Stands (Ice plant mats)	1.6	Pipeline Bluff Crossing Area, and Pier Parking Lot.
Annual Grassland	*Brassica (nigra)* and Other Mustards Semi-Natural Herbaceous Stands (Upland mustards)	6.6	Former Nursery Area, Former Marketing Terminal Area, and Chevron Pipeline Area.
Annual Grassland	*Bromus diandrus* or *hordaceous* Semi-Natural Herbaceous Stands (Annual brome grasslands)	2.5	Former Nursery Area, Former Marketing Terminal Area, and Chevron Pipeline Area.
Developed Land	Not specified (mostly bare ground or patchy ruderal vegetation)	23.9	Main Plant Area, Shop and Maintenance Area, and Chevron Pipeline Area.

Tree Windrows (MCV2: *Eucalyptus globulus* or *camaldulensis* Semi-Natural Woodland Stands [Eucalyptus groves]; *Tamarix* spp. Semi-natural Shrubland Stands [Tamarisk thickets]). Tree windrows comprised mostly of blue gum (*Eucalyptus globulus*), and to a lesser degree of athel tamarisk (*Tamarix aphylla*), occur between the Buffer Zone and Former Marketing Terminal Area, along both sides of Dump Road, on both sides of the MSRC Lease Area, and along the east edge of the entire Project Site from the Peninsula Area, south along the Main Plant Area. The eastern edge of the Former Marketing Terminal Area also supports a row of Chinese elm (*Ulmus parvifolia*) trees. Tree windrows were first introduced at the Project Site as windbreaks for agricultural fields, and later to screen oil and gas facilities.

Mixed Woodland (MCV2: *Quercus agrifolia* Woodland Alliance [Coast live oak woodland]; *Platanus racemosa – Quercus agrifolia* Woodland Alliance [California sycamore woodlands]). Trees and intervening areas of non-native grassland occur within the Buffer Zone, form a woodland community. The trees include coast live oak (*Quercus agrifolia*) and western sycamore (*Platanus racemosa*), but are also intermixed with Monterey pine, Monterey cypress (*Hesperocyparis macrocarpa*) trees, or abut Eucalyptus groves or tree windrows within the Buffer Zone. Open areas between tree clusters support perennial rye grass (*Festuca perennis*), slender wild oats (*Avena barbata*), and hare barley (*Hordeum murinum*). This area was planted to provide a buffer between the Former Marketing Terminal and the Concha Loma residential neighborhood to the west.

Smaller, more isolated patches of mixed woodland trees occur along the margins of the Shop and Maintenance Area, supporting coast live oak, Oregon ash and non-native dawn

redwood trees abutting the tamarisk and eucalyptus windrows. Stands of non-native trees are labeled as Ornamental on the attached vegetation map.

Coastal Scrub and Chaparral (MCV2: *Artemisia californica* Shrubland Alliance [California sagebrush scrub]; *Atriplex lentiformis* Shrubland Alliance [Quailbush scrub]; *Baccharis pilularis* Shrubland Alliance [Coyote brush scrub]; *Baccharis salicifolia* Shrubland Alliance [Mulefat thickets]; *Isocoma menziesii* Shrubland Alliance [Menzies's golden bush scrub]; *Heteromeles arbutifolia* Shrubland Alliance [Toyon chaparral]; *Rhus integrifolia* Shrubland Alliance [Lemonade berry scrub]; *Sambucus nigra* Shrubland Alliance [Blue elderberry stands]). Portions of the southern end of the Project Site support remnant natural stands and restored areas of coastal scrub and chaparral communities, including at Drainage Area No. 4, the southernmost portion of the Former Marketing Terminal Area, the entrance to the Pier Parking Lot, Former Sandblast Area, and Pipeline Bluffs Crossing Area. Dominant or co-dominant species in these areas include coyote brush (*Baccharis pilularis*), bush sunflower (*Encelia californica*), purple sage (*Salvia leucophylla*), toyon (*Heteromeles arbutifolia*), quailbush (*Atriplex lentiformis*), California sagebrush (*Artemisia californica*), Menzies's golden bush (*Isocoma menziesii*), blue elderberry (*Sambucus nigra ssp. caerulea*) and lemonadeberry (*Rhus integrifolia*).

Notably, in the Pipeline Bluffs Crossing Area are monotypic and mixed stands of quailbush scrub, mixed stands of coyote brush scrub and Menzies's golden bush scrub, which all have undergone some level of disturbance. In Drainage Area No. 4 are a planted mulefat thicket, toyon chaparral, and naturally colonized California sagebrush scrub. The southern portion of the Former Marketing Terminal Area supports a mature thicket of blue elderberry, lemonadeberry and California sagebrush.

Iceplant Mat (MCV2: *Carpobrotus edulis* or Other Ice Plants Semi-Natural Herbaceous Stands [Ice plant mats]). The Pipeline Bluffs Crossing Area supports a large mat of non-native iceplant (*Carpobrotus edulis* and *Mesembryanthemum* sp.), which, where present, has frequently become a naturalized and typically dominant component of bluff scrub communities.

Annual Grasslands and Ruderal Vegetation (MCV2: *Brassica* (*nigra*) and Other Mustards Semi-Natural Herbaceous Stands [Upland mustards]; *Bromus diandrus* or *hordaceous* Semi-Natural Herbaceous Stands [Annual brome grasslands]. The Main Plant Area, Shop and Maintenance Area, and Chevron Pipeline Area, which are all formerly graded, bermed, or degraded asphalt, supports patches of predominantly non-native herbaceous species such as summer mustard (*Hirschfeldia incana*), red brome (*Bromus madritensis ssp. rubens*), ripgut brome (*Bromus diandrus*), red-stem filaree (*Erodium cicutarium*), onionweed (*Asphodelus fistulosis*), bristly ox-tongue (*Helminthotheca echioides*), cheeseweed (*Malva parviflora*), perennial ryegrass, freeway iceplant, Terracina spurge (*Euphorbia terracina*), smilo grass (*Stipa mileacea*), bur-clover (*Medicago polymorpha*) and English plantain (*Plantago lanceolata*). Native species were also observed throughout these areas, but in lesser concentration, including horseweed (*Erigeron canadensis*), telegraph weed (*Heterotheca grandiflora*), coyote brush, and small-flowered evening primrose (*Camissoniopsis micrantha*).

The Former Nursery Area supports an assemblage of weedy non-native species typical of repeated disturbance. Dominant species originally observed in 2004 included cheeseweed,

wild radish (*Raphanus sativus*) and summer mustard. The Former Nursery Area was hydroseeded with a native herbaceous seed mix following removal of pesticide-affected soils in 2012 but has since become mostly recolonized with its former non-native dominants, in addition to the emergence of succulent lupine (*Lupinus succulentus*) and California poppy (*Eschscholzia californica*) included in the seed mix. Similar conditions supporting non-native annual grasses and other herbaceous cover (e.g., English plantain and Terracina spurge, but little or no native species) are present in the Former Marketing Terminal Area immediately south of its developed portion.

Arroyo Willow Thicket (MCV2: *Salix lasiolepis* Shrubland Alliance [Arroyo willow thickets]). The Project Site supports three (3) small patches of arroyo willow thicket with arroyo willow (*Salix lasiolepis*) as the dominant tree species in the overstory. Understory vegetation typically includes western ragweed (*Ambrosia psilostachya*), tall flatsedge (*Cyperus eragrostis*, in wetter years), bristly ox-tongue (*Picris echioides*), and/or curly dock (*Rumex crispus*) or is bare of understory vegetation due to a thick, closed canopy.

3.0 TREE RESTORATION

For the purposes of this section, "protected trees" refers to native trees (including western sycamore, coast live oak, and arroyo willows), as well as windrow trees that are part of a contiguous open space system across the Carpinteria bluffs including various locations throughout the Project Site. In accordance with the City of Carpinteria General Plan and Local Coastal Plan (Policy OSC-2i) when a tree is approved by the City for removal, it shall be required to be replaced at a ratio appropriate to ensure infill of any gap created in the windrow and with a tree type and size to be approved by the City. As part of Project Site restoration, Chevron proposes to replace the removed trees with native tree species to replace the canopy habitat that will be temporarily lost.

3.1 TREE REPLACEMENT

A total of 62 live trees were tallied within the Project disturbance footprint: Sixty of the trees evaluated are blue gum (*Eucalyptus globulus*) trees, which are planted in the Main Plant Area middle east-west windrow, the Main Plant Area southern north-south windrow, and in the Chevron Pipeline Area east-west windrow. Two of the trees evaluated are Monterey cypress (*Hesperocyparis macrocarpa*) trees, which are planted in the southern portion of the Main Plant Area, adjacent to the fence that borders the Union Pacific railroad right-of-way. Tree impacts (removals) are estimated at 4.1 percent of the entire tree population at the Project Site (Padre, 2021c).

Native replacement trees will be planted to offset Project-related losses of canopy habitat for raptors and songbirds. Tree windrows known to historically house a monarch butterfly aggregation in the Buffer Zone Area will not be affected by Project activities. The Project Site currently supports approximately 225 coast live oak, 84 western sycamore, 52 blue elderberry (*Sambucus nigra ssp. caerulea*), and 135 toyon (*Heteromeles arbutifolia*) trees (or shrubs that may become trees). Replacement of non-native trees with these native species at a ratio of 1:1 is proposed in areas that would expand native vegetation onsite, or possibly to create new habitat patches within portions of the property that are not slated for any developmental purpose (Padre, 2021c). Replacement trees will be maintained and monitored similarly as described below for other container plants.

3.2 TREE PROTECTION

All ground disturbance within 10 feet of the canopy dripline of protected trees (protected zone) will be monitored by a certified arborist or qualified biologist with tree care experience. Protected zones will be marked in the field using fencing and/or flagging. Excavation activities within the protected zone will be allowed if soil sampling indicates soils within the protected zone exceed remediation targets and work is conducted with hand tools only. Soil removed from the protected zone will be replaced with imported clean soil within 48 hours of completion of excavation. All trees affected by excavation within the protected zone will be monitored quarterly to detect any loss of vigor.

3.3 WILLOW PRESERVATION

Willows within the FSBA and DA4 will be preserved through complete avoidance of the Operational Area in which the willow thicket occurs, or if necessary, temporary installation of construction fencing around each stand of trees throughout the duration of work.

4.0 IMPLEMENTATION PLAN

4.1 RESTORATION AREA DESCRIPTIONS

The onshore facility and associated Project components comprise an area of approximately 55-acres that exists as an oil and gas processing facility owned and formerly operated by Chevron USA, Inc. Within the onshore facility, there are a number of functional Operational Areas that contain above ground and subsurface equipment, piping, and appurtenant facilities that will be removed entirely as part of the decommissioning Project. Following decommissioning, each Operational Area will be restored, or at a minimum, revegetated for erosion control, to the extent required to support future land use designations. The Project Site is bisected by the Union Pacific Railroad (UPRR), which divides the proposed restoration areas into northern and southern groups. The future potential land uses of each parcel will determine the final disposition and revegetation objectives for each restoration area.

4.1.1 Northern Restoration Areas

4.1.1.1 Main Oil and Gas Processing Facility

The Main Oil and Gas Processing Facility (Main Plant Area) is located on an approximately 9-acre parcel (APN 001-170-014) north of the UPRR right-of-way along the Project Site's eastern boundary. An 850-foot-long windrow of blue gum eucalyptus trees lines the eastern border of the Main Plant Area, and a 200-foot-long windrow of blue gum eucalyptus trees lines bisects the Main Plant Area in an east-west orientation. The trees located along the eastern Main Plant Area boundary are parallel to an adjacent offsite windrow on the parcel to the east of the Project Site.

Following remediation, the surface soils will be backfilled and compacted to regulatory specifications. A soil binder and annual grass and native herb seed mix will be utilized on bare ground to stabilize any exposed soils. In order to remediate contaminated soil present within the Main Plant Area, approximately 500 feet of eucalyptus windrow will need to be removed from the southeastern corner of the Main Plant Area (41 trees) and 200 feet from between equipment areas 8 and 9 (12 trees). An additional two (2) Monterey cypress trees will be removed along the southern fence line. The trees will be replaced with native trees at an appropriate location on the Project Site that will not conflict with future uses.

4.1.1.2 Chevron Pipeline Area (Including Tank 861)

The Chevron Pipeline Area is located within APN 001-170-022, which is a 5.51-acre parcel located on the southern boundary of the Project Site adjacent to the UPRR right-of-way. The Chevron Pipeline Area contains Tank 861 (T861), which is a 217,000-barrel capacity aboveground storage tank, as well as Tank 1 and Tank 2, which are both 2,000-barrel capacity aboveground storage tanks, as well as a 1,260 square foot (sq. ft.) pipeline office. All above ground equipment will be removed from the Project Site and soil remediation will be conducted throughout the Operational Area. An intermittent drainage is located along the western edge of the Chevron Pipeline Area. Approximately 0.17 acres of wetland will be impacted during remediation activities within the Chevron Pipeline Area (Padre, 2021d).

Following remediation, the upland surface soils will be backfilled and compacted to regulatory specifications. A soil binder and annual grass and native herb seed mix will be utilized

on bare ground to stabilize any exposed soils. Approximately seven (7) blue gum eucalyptus trees are proposed for removal within the Chevron Pipeline Area to allow for remediation of contaminated soils. Elevations that support drainage in this area will be included in the final grading plans for the Project Site. Any losses of wetland in this area will be mitigated by expanding the wetland area in Drainage Area No. 4 with a wetland seed mix (Table 4-1) and by encouraging the proliferation of existing wetland vegetation (e.g., willows and mulefat) at that location. The removed trees will be replaced with native trees at an appropriate location on the Project Site that will not conflict with future uses.

4.1.1.3 Former Marketing Terminal Area

The Former Marketing Terminal Area (FMTA) is located within the southern half of APN 001-170-004, which is approximately 11.27 acres in total. The FMTA was used for bulk storage of Chevron gasoline and diesel fuel products. These products were subsequently loaded into tanker trucks at the Marketing Terminal for distribution to retail gas stations and other fuel users. The above ground storage tanks (ASTs), underground storage tanks (USTs), and associated appurtenances were removed from the site in 1999. An office building and shop (Annex Building), numerous, storage containers, and an equipment yard remain.

After removal of surface facilities and equipment, demolition of asphalt and concrete, and remediation within the FMTA, the soil will be backfilled and compacted to regulatory standards. A soil binder and annual grass and native herb seed mix will be utilized on bare ground to stabilize any exposed soils.

4.1.1.4 Shop and Maintenance Area

The Shop and Maintenance Area is located north of the Chevron Pipeline Area within APN 001-170-023. This parcel is approximately 10.80 acres and includes the primary entrance to the Oil and Gas Processing Facility and a 4,255 sq. ft. maintenance shop building. A welding shop area, including two smaller structures that are 2,314 sq. ft. total is also present. Plant Area 1 is located along the western boundary of this parcel. Plant Area 1 is an undeveloped area located at the western portion of the Shop and Maintenance Area and is known as the “Boneyard”. The Shop and Maintenance Area is bounded by native, ornamental, and fruit trees including a stand of Oregon ash, coast live oak, tamarisk, dawn redwood and avocado. Tree removal is not proposed within the Shop and Maintenance Area.

After removal of surface facilities and equipment, demolition of asphalt and concrete, and remediation within the Shop and Maintenance Area, the soil will be backfilled and compacted to regulatory standards. A soil binder and annual grass and native herb seed mix will be utilized on bare ground to stabilize any exposed soils.

4.1.1.5 Marine Spill Response Corporation Lease Area

The Marine Spill Response Corporation (MSRC) Lease Area is located in the northeastern portion of APN 001-170-023. The area is approximately 3.4 acres and was formerly leased to Clean Seas but is now utilized by MSRC who supports local oil spill response operations and maintains this area for storage of oil spill response equipment. This area contains an office/conference room building as well as a small 64 sq. ft. storage building and a larger 2,100 sq. ft. garage and maintenance building. A large portion of this area is paved with asphalt. An

approximately 970-foot-long windrow of blue gum eucalyptus trees lines the northern boundary between the MSRC Area and the City Hall, as well as an approximately 260-foot-long windrow of eucalyptus and tamarisk bordering the property to the east. Tree removal is not proposed in the MSRC area.

After removal of surface facilities and equipment, demolition of asphalt and concrete, and remediation within the MSRC Lease Area, the soil will be backfilled and compacted to regulatory standards. A soil binder and annual grass and native herb seed mix will be utilized on bare ground to stabilize any exposed soils.

4.1.1.6 Peninsula Area

The Peninsula Area extends northward from the MSRC Lease Area and former Sales Gas Area within APN 001-170-023. The Peninsula Area is a narrow strip of land, approximately 0.25 acres in size, and was formerly developed and utilized in support of Southern California Gas (SoCalGas) transmission pipelines corridor and access to the Sales Gas Facility and Marine Spill Response Corporation (MSRC) Lease Area. Decommissioning of any remaining facilities within the Peninsula area will be the responsibility of SoCalGas, however soil remediation is planned within this area as part of the Project. An approximately 200-foot-long windrow of non-native trees lines the eastern boundary between Peninsula Area and the neighboring property. This windrow will be removed as part of a City recreational project (skate park), however tree removal is not part of this Project.

After soil remediation within the Peninsula Area, the soil will be backfilled and compacted to regulatory standards. A soil binder and annual grass and native herb seed mix will be utilized on bare ground to stabilize any exposed soils. Work within the Peninsula Area will be completed in coordination with the City based on their project timing.

4.1.2 Southern Restoration Areas

4.1.2.1 Former Sandblast Area

The Former Sandblast Area (FSBA) is located on the eastern portion of APN 001-170-021; a 10.02-acre parcel located south of the UPRR right-of-way and north of the beach along the bluffs. The FSBA contains a series of shallow subsurface pipelines that are proposed for removal. The FSBA was previously restored and revegetated following soil remediation activities completed in 2011. The existing plant community consists of coastal bluff scrub species including coyote brush, bush sunflower, purple sage, toyon, big saltbush, California sagebrush and lemonadeberry.

Following the removal of subsurface pipelines, the FSBA will be backfilled and graded to match the existing topography of the area. The FSBA will be planted with native shrubs and seeded with a native shrub seed mix to match the existing vegetation along the bluff. The soil may be augmented, if needed.

4.1.2.2 Gravel Pier Parking Lot

The Pier Parking Lot is located within the middle to eastern portion of APN 001-170-021 (10.02 acres total and 2.5 acres of restoration area) and is comprised of a paved access roadway from Dump Road, an upper paved lot and lower gravel parking lot, and access roadway to the

Casitas (Carpinteria) Pier causeway. Due to on-going use of the upper paved lot and the roadway to the pier, only the lower gravel parking lot will be removed and restored.

The gravel parking lot will be disced, ripped to reduce soil compaction, soil augmented, planted with native shrubs and seeded with a native shrub seed mix to match the existing native shrubs and vegetation along the bluff and adjacent Carpinteria Tar Pits Park and Vista Trail.

4.1.2.3 Bluff and Cliff Side Area (Pipeline Crossings)

The Bluff Area is located within the eastern edge of Tar Pits Park and will consist of ground disturbance within the pipeline corridor associated with the removal of the Marine/Marketing Terminal Pipeline Bundles. The plant communities in the Bluff Area are dominated by invasive ice plant (*Carpobrotus edulis* and *Mesembryanthemum* spp.) within a community of coastal scrub species. The Bluff Area is not expected to require soil remediation and consists of two ground-level vaults with minor above ground infrastructure. Decommissioning activities in the Bluff Area will consists primarily of excavation and removal of subsurface pipelines. Restoration of the bluff area will consist of native seed mix and planted shrubs to match the existing native vegetation along the bluff and adjacent Carpinteria Tar Pits Park and Vista Trail. Aside from revegetation of the access routes and excavation limits, the bluff area will be left as-is. For the removal of pipelines from the bluff and cliff, an analysis of the potential for coastal erosion processes was performed (Padre, 2021e). Additional restoration and soil control methods may be implemented consistent with this analysis to reduce the potential for failure of the cliff side following disturbance along the bluff, cliff and beach.

4.2 REVEGETATION GOALS

4.2.1 Northern Operational Areas

Operational Areas within the Main Plant Facilities (north of the Union Pacific Railroad) consist of ruderal vegetation, non-native tree windrows and are primarily disturbed by the ongoing oil and gas operations. Following the decommissioning of all equipment and removal of Project facilities, the Project Site will likely be zoned for Planned Unit Development (PUD) and will be revegetated in such a manner to support future land uses at the Project Site. The goal for the Main Plant Facilities areas will be to support herbaceous vegetation that will reduce wind and water erosion until final disposition of the property is determined.

To facilitate soil remediation, removal of 53 non-native blue gum eucalyptus trees and two (2) Monterey cypress trees will be conducted along the interior, eastern, and southern borders of the Main Plant Area, and an additional seven (7) blue gum eucalyptus trees will be removed from the southern edge of the Chevron Pipeline Area. Removal of non-native trees and replacement with native trees will increase the native species diversity on the Project Site, reduce the loss of canopy and roosting habitat, and be beneficial for coastal migratory and resident birds.

4.2.2 Pier Parking Lot and Former Sandblast Area

Following surface and subsurface facilities demolition (including asphalt removal) and subsurface pipeline removal, both the Gravel Pier Parking Lot Area and Former Sandblast Area will be restored and revegetated to coastal sage scrub habitats. These two Operational Areas will likely be zoned in support of recreational land uses, adjacent to the Carpinteria Vista Bluff

Trail and Tar Pits Park, and therefore, will be restored to support a native plant community that is consistent with nearby undisturbed bluff areas and adjacent native plant communities.

4.2.3 Bluff Pipeline Crossing Area

Following subsurface pipeline removal, the Bluff Pipeline Crossing Area will be restored to pre-Project conditions and will continue to serve a beneficial aesthetic purpose along the Carpinteria Vista Bluff Trail. This area will be planted with native species present in adjacent areas, to blend into the surrounding habitat.

4.3 SCHEDULE

The implementation schedule will be devised to maximize the potential for success. Soil removal and backfill is currently scheduled to begin Summer 2022 and will occur intermittently over the course of three years. Hydroseeding will be completed following soil remediation prior to winter rains of each work year. Planting will be conducted in fall and early winter, to the extent feasible, to take advantage of rainfall. Irrigation will be provided as needed through the first dry season after planting.

4.4 SITE PREPARATION

Each Restoration Area will be backfilled with clean soil, as needed, and assessed for excessive soil compaction. If needed, the Restoration Area will be ripped to a depth of 12 inches, with ripping teeth spaced no more than 18 inches apart. If the period between completion of backfill and seeding is expected to be more than two months, a pre-emergent herbicide will be applied to the excavated areas immediately after backfilling is completed.

4.5 SOIL AMENDMENTS

The source of backfill material is not known at this time. Backfilled areas will be assessed for soil texture and soil organic matter content. If determined to be necessary to support plant growth, soil amendments will be added as part of ripping or within individual planting holes. Soil amendments may include compost, sand and/or weed-free pre-prepared topsoil.

4.6 REVEGETATION METHODS

4.6.1 Northern Restoration Areas

To support future land use and prevent erosion, each area north of the UPRR will be hydroseeded with an annual grass and native herb seed mix (Table 4-1). Hydroseeding will be conducted to prevent seed predation, reduce weed colonization and reduce erosion. The planting area will be watered prior to hydroseeding. A mixture of seed, legume inoculant, appropriate binder, wood fiber (500 pounds per acre) and compost (1,200 pounds per acre) will be applied using a hydroseeder. Seed will be added to the hydroseeder tank immediately prior to hydroseeding to minimize seed mortality and enhance germination.

Native tree replacements will be planted to reduce the loss of canopy coverage originally provided by the non-native tree windrows or individual trees planned for removal. Native tree replacement will consist of coast live oak (*Quercus agrifolia*) and western sycamore (*Platanus racemosa*) and will be planted to benefit the species diversity and partially wooded setting of the Project Site. To ensure a complete 1:1 replacement ratio of trees removed at the Project Site, a 1.5:1 planting ratio is proposed.

4.6.2 Southern Restoration Areas

Areas south of the UPRR that are impacted by surface and subsurface demolition and other soil remediation disturbance will be planted with coastal bluff scrub species to blend into the surrounding plant community (Table 4-1).

The larger restoration area within the Gravel Pier Parking Lot will also be broadcast seeded or hydroseeded with native shrubs. In addition, over time native colonization of scrub species from the adjacent coastal scrub plant communities are expected to provide additional cover within the restoration areas.

Table 4-1. Plant Palette

Species	Planting Method[1]
Tree Replacements[2]	
Coast live oak (*Quercus agrifolia*)	5-gallon container
Western sycamore (*Platanus racemosa*)	5-gallon container
Annual Grass and Native Herb Seed Mix	
Blando brome (*Bromus hordaceus*)	Seed (pure, live)
Rose clover (*Trifolium hirtum*)	Seed (pure, live)
Zorro annual fescue (*Vulpia myuros*)	Seed (pure, live)
California poppy (*Eschscholzia californica*)	Seed (pure, live)
Succulent lupine (*Lupinus succulentus*)	Seed (pure, live)
Narrow-leaf milkweed (*Asclepias fascicularis*)	Seed (pure, live)
Native Shrub Seed Mix[3]	
California bush sunflower (*Encelia californica*)	Seed (pure, live)
Coyote brush (*Baccharis pilularis*)	Seed (pure, live)
Purple sage (*Salvia leucophylla*)	Seed (pure, live)
California buckwheat (*Eriogonum fasiculatum*)	Seed (pure, live)
Coastal Scrub Plantings	
Big saltbush (*Atriplex lentiformis*)	1-gallon container
Coyote brush (*Baccharis pilularis*)	1-gallon container
California bush sunflower (*Encelia californica*)	1-gallon container
Lemonadeberry (*Rhus integrifolia*)	1-gallon container
Wetland Seed Mix	
Mulefat (*Baccharis salicifolia*)	Seed (pure, live)

Species	Planting Method[1]
Toad rush (*Juncus bufonius*)	Seed (pure, live)
Bent-grass (*Agrostis exarata*)	Seed (pure, live)
Willow dock (*Rumex salicifolius*)	Seed (pure, live)
Willow weed (*Polygonum lapithifolium*)	Seed (pure, live)

Notes: [1] The quantity and source of native seed mix and individual plants will be prepared when disturbance areas and land use designations are finalized and will be adjusted as needed based on the actual disturbance area and post-soil removal site conditions.

[2] Native tree replacements may not necessarily be planted in the same Restoration Area from which the non-native windrow tree was removed from.

[3] To be used in the Southern Restoration Areas only.

4.7 IRRIGATION

The source of irrigation water will be on-site potable supply lines. A drip irrigation system will be installed and maintained, including above-ground headers to tree and shrub plantings. Alternatively, a pump-fed portable water tank may be used with temporary sprinklers to irrigate these plantings. Container plants in the Bluff Pipeline Crossing Area may require manual watering utilizing personal backpack sprayers or a portable water buffalo. The irrigation system and/or supplemental watering will be used to water container stock immediately after planting, and as needed until root systems are fully established. The intent will be to water deeply and sparingly, to facilitate development of a deep root system and terminate irrigation as soon as possible. Additional irrigation will be conducted as needed during the first spring and summer after planting, or longer, depending on evaluations of plant stress. The irrigation plan will be reviewed by a registered geotechnical engineer to ensure bluff erosion from run-off is avoided.

Irrigation is not planned in the seeded Northern Restoration Areas because the hydroseed mixes are drought tolerant and seeding will be scheduled in the fall or early winter to take advantage of rainfall.

5.0 MONITORING PLAN

5.1 PERFORMANCE GOALS AND REMEDIAL ACTIONS

The following performance goals and remedial actions are recommended to ensure survival and to meet agency requirements for restoration success, once established.

5.1.1 Percent Plant Cover

The seeded portions of the Northern Restoration Areas should attain at least 50 to 75 percent (or greater) total plant cover within 3 years. The seeded portions of the Southern Restoration Areas should attain at least 50 to 75 percent (or greater) native plant cover within 3 years. If the percent survival performance standard (see below) is met in areas that were also planted with container plants, the plant cover standard does not apply. Additional planting should be conducted if the native plant cover standard is not met.

5.1.2 Percent Survival

For shrubs, at least 80 percent of container plants should survive the first year after planting; with 90 percent survival thereafter. If the plant cover performance standard is met in areas that were also planted with container plants, the percent survival standard for shrubs does not apply. Additional planting should be conducted if this standard is not met.

For trees, survival should be monitored for a minimum of 3 years to confirm their establishment. By the end of the 3-year period, the number of live trees planted should be at least equal to the number of trees removed, equaling 100 percent survival or greater. To ensure the success of this goal, a planting ratio of 1.5:1 is proposed.

5.1.3 Invasive Plants

No woody invasive species should be present, and herbaceous invasive species cover should not exceed 5 percent. For the purposes of this standard, “invasive species” means the species is scored as medium or high by the California Invasive Plant Council.

5.2 MONITORING ACTIVITIES

5.2.1 Northern Restoration Areas

Qualitative botanical surveys will be conducted by identifying dominant plant species in the restoration areas and preparing a list of native and non-native species found. The intent is to document the success of the annual grass and native herb seed mix and tree plantings and excluding invasive plants with periodic weeding or timely herbicide spraying.

5.2.1.1 Methods

A general walking survey of the area will be conducted to record observations of germination, estimates of native and non-native cover, and identify maintenance needs. Photo-monitoring stations will be established during Year 0 at representative locations throughout the Restoration Areas, to document baseline conditions and progress toward the performance criteria. These permanent photo-monitoring stations will be marked in the field and/or recorded with a Global Positioning System (GPS) unit. Photographs will be taken at least annually in the spring from the photo-monitoring stations.

Survival surveys of native tree plantings will be conducted annually. Survival surveys will be conducted by counting the number of live and dead trees. This task will also include an evaluation of the adequacy of irrigation, extent of weed infestation and herbivory losses. These surveys will be conducted in late spring-early summer to document increase in cover associated with spring growth.

5.2.2 Southern Restoration Areas

Monitoring activities will include establishment of photo-documentation stations, survival surveys, botanical surveys, and line intercept surveys. Photographs will be taken during each monitoring visit at established stations to document overall progress. Survival surveys will be conducted to determine percent mortality of each planted species. Botanical surveys will be conducted to document the increase in the number and proportion of native species over time. Line intercept surveys will be conducted where container stock was installed to determine the percent cover of planted species, and the cover of invasive species.

5.2.2.1 Methods

Color photographs will be taken at established, permanent monitoring stations. The compass direction, time, date, photograph number and location will be recorded and documented on data sheets.

Survival surveys will be conducted by counting the number of live and dead container plants. This task will also include an evaluation of the adequacy of irrigation, extent of weed infestation and herbivory losses. These surveys will be conducted in late spring-early summer to document increase in cover associated with spring growth.

Botanical surveys will be conducted by identifying each plant species in the restoration areas and preparing a list of native and non-native species found. The intent is to document the success of native plants in excluding non-native plants and periodic weeding.

Line transects will be established, and plant species identity and length of intercept will be determined for the entire transect. The development of a native plant community and eradication of non-native plant species will be documented by the percent cover and percent native species in the restoration areas as it changes over time and approaches that of undisturbed adjacent vegetation. Transect data will be collected at the time of the survival surveys.

5.2.3 Personnel

Qualified biologists will be used to conduct all monitoring activities. Staff turnover will be minimized to ensure continuity of activities and methodology is maintained.

5.3 MONITORING SCHEDULE

Restoration will be monitored for three years following planting in each Operational Area. Monitoring events will be scheduled within the blooming season appropriate for each year, as well as follow-up site visits to track invasive plant populations and potential maintenance requirements.

5.4 ADAPTIVE MANAGEMENT

Adaptive management will be implemented to improve restoration success and achieve the performance criteria. Adaptive management will be based upon observations made during

monitoring visits and/or additional site visits, as needed. Revegetation areas that are not achieving the performance criteria will be identified and the cause addressed. Adaptive management may include but is not limited to, changes to the planting/seeding palette, irrigation methods, use of soil amendments, and invasive plant removal methods. Recommendations for adaptive management will be made by the restoration biologist.

5.5 ANNUAL REPORTS

5.5.1 Number of Reports

Annual reports will be submitted for a period of three years after planting.

5.5.2 Contents

The annual report will include the following (as a minimum):

- Project name and applicant name, address and phone number;
- Coastal permit numbers;
- Summary of project impacts and dates of construction period;
- Summary of restoration activities during reporting period;
- Names and qualifications of all monitoring personnel;
- Reporting forms and photographs;
- Discussion of monitoring methods and dates activities were completed;
- Comparison of collected data to the success criteria;
- Discussion of problems encountered, and probable reasons success criteria were or were not attained;
- Discussion of activities conducted to remediate restoration areas which failed to meet the success criteria;
- Recommendations to modify the success criteria based on past performance;
- Recommendations for adaptive management methods to minimize future mortality, excessive weeds, herbivory losses, slow growth and human impacts; and
- Discussion of storm-related damage (if any), activities conducted to repair damage and recommendations to minimize future damage.

6.0 REFERENCES

Padre Associates, Inc. 2010. Addendum to the Biological Impact Study (December 2004) for the Carpinteria Gas Plant Pesticide Remediation. Prepared for County of Santa Barbara Planning and Development, Energy Division. August.

_____2011. Botanical Survey Report for the Carpinteria Source Removal Project (Project 04-1167-DP/CDP). Prepared for Chevron Environmental Management Company. May.

_____2012. Project Completion Report for Biological Survey, Monitoring and Restoration Oversight for Carpinteria Oil and Gas Processing Facility Soil Remediation/Restoration Project (Final Report, No. 10), CDFG Notification No. 1600-2011-0088-R5. Prepared for Chevron Environmental Management Company. February.

_____2021a. Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities Project Description, City of Carpinteria, Santa Barbara County, California. June.

_____2021b. Terrestrial Biological Resources Study, Carpinteria Oil and Gas Processing Facilities, City of Carpinteria, Santa Barbara County, California. June.

_____2021c. Tree Report, Carpinteria Oil and Gas Processing Facilities, City of Carpinteria, Santa Barbara County, California. June.

_____2021d. Wetland Delineation Report, Carpinteria Oil and Gas Processing Facilities, City of Carpinteria, Santa Barbara County, California. June.

_____2021e. Bluff Retreat Evaluation Report, Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities, Carpinteria, Santa Barbara County, California. June.

CARPINTERIA OIL & GAS PROCESSING FACILITIES – PLANT LIST

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot
CUPRESSACEAE (Cypress Family)												
Monterey cypress	*Hesperocyparis macrocarpa*	T	NL	I		X	X	X		X	X	X
Dawn redwood	*Metasequoia glyptostroboides*	T	NL	I						X		
PINACEAE (Pine Family)												
Aleppo pine	*Pinus halepensis*	T	NL	I			X				X	
Monterey pine	*Pinus radiata*	T	NL	I				X	X	X		
TAXODIACEAE (Bald Cypress Family)												
Redwood	*Sequoia sempervirens*	T	NL	I			X					
ARAUCARIACEAE (Araucaria Family)												
Norfolk island pine	*Araucaria excelsa*	T	NL	I					X			
ADOXACEAE (Muskroot Family)												
Blue elderberry	*Sambucus nigra ssp. caerulea*	T	FACU	N				X	X			X
AIZOACEAE (Fig-Marigold Family)												
Crystalline iceplant	*Mesembryanthemum crystallinum*	H	FACU	I	Moderate						X	
Baby sun rose	*Mesembryanthemum cordifolium*	V	NL	I			X					
Freeway iceplant	*Carpobrotus edulis*	S	NL	I	High					X	X	X
ANACARDIACEAE (Sumac or Cashew Family)												
Laurel sumac	*Malosma laurina*	S	NL	N		X						
Lemonade berry	*Rhus integrifolia*	S	NL	N		X		X	X		X	X
Brazilian pepper tree	*Schinus terebinthifolius*	T	NL	I	Moderate		X	X				
APIACEAE (Carrot Family)												
Poison hemlock	*Conium maculatum*	H	FACW	I	Moderate	X		X				
Fennel	*Foeniculum vulgare*	H	NL	I	Moderate	X						X
APOCYNACEAE (Dogbane Family)												
Oleander	*Nerium oleander*	S	NL	I			X	X				
ARALIACEAE (Ginseng Family)												
English ivy	*Hedera helix*	V	NL	I	High		X	X				
ASPARAGACEAE (Asparagus Family)												
Century plant	*Agave americana*	S	UPL	I						X		
Dracaena	*Dracaena sp.*	S	NL	I						X		
ASPHODELACEAE (Asphodel Family)												
Aloe	*Aloe sp.*	S	NL	I						X		
Onionweed	*Asphodelus fistulosus*	H	NL	I	Moderate	X				X		X
ASTERACEAE (Sunflower Family)												
Western ragweed	*Ambrosia psilostachya*	H	FACU	N		X		X	X	X	X	X
California sagebrush	*Artemisia californica*	H	NL	N		X			X		X	X
Mugwort	*Artemisia douglasiana*	H	FAC	N		X		X			X	
Coyote brush	*Baccharis pilularis*	S	NL	N		X		X	X	X	X	X
Mule fat	*Baccharis salicifolia*	S	FAC	N				X			X	
Italian thistle	*Carduus pycnocephalus*	H	NL	I	Moderate		X	X				
Tocalote	*Centaurea melitensis*	H	NL	I	Moderate	X						X
Bull thistle	*Cirsium vulgare*	H	FACU	I	Moderate							X
Brass buttons	*Cotula coronopifolia*	H	OBL	I	Limited					X		
Artichoke	*Cynara scolymus*	H	NL	I				X				
German Ivy	*Delairea odorata*	V	NI	I	High	X		X				
California bush sunflower	*Encelia californica*	S	NL	N		X				X	X	X
Horseweed	*Erigeron canadensis*	H	FACU	N						X		
Crown daisy	*Glebionis coronaria*	H	NL	I	Moderate					X		
Bristly ox-tongue	*Helminthotheca echioides*	H	FAC	I	Limited		X	X	X	X		
Telegraph weed	*Heterotheca grandiflora*	H	NL	N						X		X
Rough cat's-ear	*Hypochaeris radicata*	H	NL	I	Moderate			X	X			X
Coastal golden-bush	*Isocoma menziesii*	S	NL	N		X				X		X

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot
Prickly lettuce	*Lactuca serriola*	H	FACU	I		X		X		X		
Narrowleaf cottonrose	*Logfia gallica*	H	NL	I						X		
Green everlasting	*Pseudognaphalium californicum*	H	NL	N		X				X		
Cudweed	*Pseudognaphalium canescens ssp. microcephalum*	H	FACU	N		X				X		
Cotton-batting plant	*Pseudognaphalium stramineum*	H	FAC	N						X		
Milk thistle	*Silybum marianum*	H	NL	I	Limited					X		
Prickly sow thistle	*Sonchus asper*	H	FAC	I		X						
Common sow thistle	*Sonchus oleraceus*	H	UPL	I			X	X		X		X
BIGNONIACEAE (Bignonia Family)												
Trumpet creeper	*Campsis radicans*	V	NL	I				X				
Cape honeysuckle	*Tecoma capensis*	S	NL	I				X	X			
BORAGINACEAE (Borage Family)												
Large-flowered popcorn flower	*Cryptantha intermedia*	H	NL	N						X		
Pride of Madeira	*Echium candicans*	S	NL	I	Limited			X		X		
Branching phacelia	*Phacelia ramosissima*	H	FACU	N						X	X	X
BRASSICACEAE (Mustard Family)												
Shepherd's purse	*Capsella bursa-pastoris*	H	FACU	I						X		
Summer mustard	*Hirschfeldia incana*	H	NL	I	Moderate	X	X	X	X	X	X	X
Wild radish	*Raphanus sativus*	H	NL	I	Limited		X	X	X	X		
London rocket	*Sisymbrium irio*	H	NL	I	Limited					X		
CACTACEAE (Cactus Family)												
Mission prickly-pear	*Opuntia ficus-indica*	S	NL	I						X		
CARYOPHYLLACEAE (Pink Family)												
Sand-spurrey	*Spergularia bocconi*	H	FACW	I						X		
Four-leaved all-seed	*Polycarpon tetraphyllum*	H	NL	I			X					
CHENOPODIACEAE (Goosefoot Family)												
Big saltbush, quailbush	*Atriplex lentiformis*	S	FAC	N		X			X		X	X
Five-hook bassia	*Bassia hyssopifolia*	S	FACU	I	Limited		X		X	X		
Pitseed goosefoot	*Chenopodium berlandieri*	H	NL	N						X		
Nettle leaf goosefoot	*Chenopodium murale*	H	FACU	I						X		
Russian thistle	*Salsola tragus*	H	FACU	I	Limited				X	X		
CONVOLVULACEAE (Morning-Glory Family)												
Chaparral morning-glory	*Calystegia macrostegia ssp. intermedia*	V	NL	N		X	X	X				X
Bindweed	*Convolvulus arvensis*	H	NL	I			X			X		
CRASSULACEAE (Stonecrop Family)												
Pygmy weed	*Crassula connata*	H	FAC	N						X		
Jade plant	*Crassula ovata*	H	NL	I						X		
EUPHORBIACEAE (Spurge Family)												
Spotted spurge	*Chamaesyce maculata*	H	FACU	I			X			X		
Caper spurge	*Euphorbia lathyris*	H	NL	I			X					
Petty spurge	*Euphorbia peplus*	H	NL	I			X	X		X		
Carnation spurge	*Euphorbia terracina*	H	NL	N	Limited				X	X	X	
Castor bean	*Ricinus communis*	H	FACU	I	Limited		X	X	X		X	X
FABACEAE (Legume Family)												
Sydney golden wattle	*Acacia longifolia*	T	NL	I	Watch				X	X		
Strigose lotus	*Acmispon strigosus*	H	NL	N						X		
Miniature lupine	*Lupinus bicolor*	H	NL	N						X		
Succulent lupine	*Lupinus succulentus*	H	NL	N					X			
Collared annual lupine	*Lupinus truncatus*	H	NL	N						X		
California bur-clover	*Medicago polymorpha*	H	NL	I	Limited			X		X		
Yellow sweet clover	*Melilotus indicus*	H	FACU	I		X			X	X		X
Spring vetch	*Vicia sativa*	H	FACU	I				X	X		X	

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FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot
FAGACEAE (Oak Family)												
Coast live oak	*Quercus agrifolia*	T	NL	N		X	X	X	X	X		X
Scrub oak	*Quercus berberidifolia*	T	NL	N								X
GERANIACEAE (Geranium Family)												
Red-stemmed filaree	*Erodium cicutarium*	H	NL	I	Limited	X	X		X	X	X	
White-stemmed filaree	*Erodium moschatum*	H	NL	I						X		
Cut-leaf geranium	*Geranium dissectum*	H	NL	I	Limited			X		X		
Geranium	*Pelargonium sp.*	H	NL	I				X				
GROSSULARIACEAE (Gooseberry Family)												
Fuschia-flowered gooseberry	*Ribes speciosum*	S	NL	N					X			
LAMIACEAE (Mint Family)												
Horehound	*Marrubium vulgare*	H	FACU	I	Limited	X				X		
Rosemary	*Rosmarinus officianalis*	S	NL	I			X					
Black sage	*Salvia mellifera*	S	NL	N					X		X	
Purple sage	*Salvia leucophylla*	S	NL	N		X		X			X	X
LAURACEAE (Laurel Family)												
Avocado	*Persea americana*	T	NL	I						X		
MAGNOLIACEAE (Magnolia Family)												
Southern magnolia	*Magnolia grandiflora*	T	NL	I						X		
MALVACEAE (Mallow Family)												
Bull mallow	*Malva nicaeensis*	H	NL	I			X	X	X	X		
Cheeseweed	*Malva parviflora*	H	NL	I				X	X	X	X	
MYOPORACEAE (Myoporum Family)												
Myoporum	*Myoporum laetum*	T	NL	I	Moderate			X	X	X		
MYRTACEAE (Myrtle Family)												
Blue gum	*Eucalyptus globulus*	T	NL	I	Moderate			X	X	X	X	
Scarlet gum	*Eucalyptus ficifolia*	T	NL	I				X				
NYCTAGINACEAE (Four O'Clock Family)												
Bougainvillea	*Bougainvillea spectabilis*	S	NL	I				X	X	X		
OLEACEAE (Olive Family)												
Oregon ash	*Fraxinus latifolia*	T	FACW	I				X		X		
Olive	*Olea europaea*	T	NL	I	Limited			X				
ONAGRACEAE (Evening Primrose Family)												
Small evening primrose	*Camissoniopsis micrantha*	H	NL	N						X		X
OXALIDACEAE (Oxalis Family)												
Creeping wood sorrel	*Oxalis corniculata*	H	FACU	I		X	X					X
Bermuda buttercup	*Oxalis pes-capre*	H	NL	I	Moderate		X	X	X	X	X	X
PAPAVERACEAE (Poppy Family)												
California poppy	*Eschscholzia californica*	H	NL	N					X	X		
PITTOSPORACEAE (Pittosporum Family)												
Victorian box	*Pittosporum undulatum*	T	NL	I			X	X		X		
PLANTAGINACEAE (Plantain Family)												
English plantain	*Plantago lanceolata*	H	FAC	I	Limited	X		X	X	X	X	
Common plantain	*Plantago major*	H	FAC	I				X				
PLATANACEAE (Sycamore Family)												
Western sycamore	*Plantanus racemosa*	T	FAC	N		X		X		X	X	X
POLYGONACEAE (Buckwheat Family)												
California buckwheat	*Eriogonum fasciculatum*	S	NL	N								X
Seacliff buckwheat	*Eriogonum parvifolium*	S	NL	N							X	X
Common knotweed	*Polygonum aviculare ssp. depressum*	H	FAC	I				X				
Curly dock	*Rumex crispus*	H	FAC	I	Limited		X	X	X	X	X	
MYRSINACEAE (Myrsine Family)												
Scarlet pimpernel	*Anagallis arvensis*	H	FAC	I		X	X			X		X

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot
RANUNCULACEAE (Buttercup Family)												
Virgin's bower	*Clematis ligusticifolia*	V	FAC	N			X			X		
ROSACEAE (Rose Family)												
California rose	*Rosa californica*	S	FAC	N							X	
California blackberry	*Rubus ursinus*	PV	FAC	N							X	
Cotoneaster	*Cotoneaster pannosa*	S	NL	I	Moderate			X		X		
Toyon	*Heteromeles arbutifolia*	S	NL	N				X	X		X	
Peach	*Prunus persica*	S	NL	I			X	X		X		
Firethorn	*Pyracantha koidzumii*	S	NL	I				X				
Blackberry	*Rubus pensilvanicus*	V	NL	I			X	X				
RUBIACEAE (Madder Family)												
Common bedstraw	*Galium aparine*	H	FACU	N						X		
SALICACEAE (Willow Family)												
Arroyo willow	*Salix lasiolepis*	T	FACW	N		X	X	X		X		X
SAURURACEAE (Lizards-tail Family)												
Yerba mansa	*Anemopsis californica*	H	OBL	N							X	
SOLANACEAE (Nightshade Family)												
Tree tobacco	*Nicotiana glauca*	S	FAC	I	Moderate					X		X
Nightshade	*Solanum douglasii*	H	FAC	N			X	X				
Black nightshade	*Solanum nigrum*	H	FACU	I		X						
Purple nightshade	*Solanum xanti*	S	NL	N								X
TAMARICACEAE (Tamarisk Family)												
Athel tamarisk	*Tamarix aphylla*	T	FAC	I	Limited					X		
TROPAEOLACEAE (Nasturtium Family)												
Garden nasturtium	*Tropaeolum majus*	H	NL	I			X	X	X			
ULMACEAE (Elm family)												
Chinese elm	*Ulmus parvifolia*	T	UPL	I					X			
URTICACEAE (Nettle Family)												
Dwarf nettle	*Urtica urens*	H	NL	I						X		
VERBENACEAE (Vervain Family)												
Verbena	*Verbena lasiostachys var. scabrida*	H	FAC	N		X						X
ARECACEAE (Palm Family)												
Canary Island palm	*Phoenix canariensis*	T	NL	I	Limited			X				
Mexican fan palm	*Washingtonia robusta*	T	NL	I	Moderate				X			
CYPERACEAE (Sedge Family)												
Tall cyperus	*Cyperus eragrostis*	H	FACW	N			X	X		X		
California bulrush	*Scheonoplectus californicus*	H	OBL	N							X	
JUNCACEAE (Rush Family)												
Spiny rush	*Juncus acutus ssp. leopoldii*	H	FACW	N							X	
POACEAE (Grass Family)												
Slender wild oat	*Avena barbata*	G	NL	I	Moderate	X	X	X	X	X		
Wild oat	*Avena fatua*	G	NL	I	Moderate		X	X	X			
Brachypodium	*Brachypodium distachyon*	G	NL	I	Moderate	X						
Rescue grass	*Bromus catharticus*	G	NL	I			X	X				
Ripgut grass	*Bromus diandrus*	G	NL	I	Moderate	X	X	X	X		X	X
Soft cheat	*Bromus hordeaceus*	G	FACU	I	Limited			X		X	X	X
Red brome	*Bromus madritensis* ssp. *rubens*	G	UPL	I	High	X				X		X
Pampas grass	*Cortaderia selloana*	G	FACU	I	High	X	X	X				X
Bermuda grass	*Cynodon dactylon*	G	FACU	I	Moderate				X			X
Giant wildrye	*Elymus condensatus*	G	FACU	N								X
Erect veldt grass	*Ehrharta erecta*	G	NL	I	Moderate		X					
Italian ryegrass	*Festuca perennis*	G	FAC	I	Moderate			X	X			
Farmer's foxtail	*Hordeum murinum ssp. leporinum*	G	NI	I	Moderate	X	X	X	X	X	X	

ATTACHMENT A
CARPINTERIA OIL AND GAS PROCESSING FACILITIES - PLANT LIST

FAMILY Common Name	*Scientific Name*	Growth Habit	Wetland Indicator Status	Native Status	Invasiveness Rating	FSBA	Railroad Ditch	BZ and/or DA4	FNA and/or FMTA	Shop, Plant and/or CPL	Pipeline Bluff Crossing Area	Pier Lot
Goldentop grass	*Lamarckia aurea*	G	FACU	I						X		
Dallis grass	*Paspalum dilatatum*	G	FAC	I				X				
Kikuyu grass	*Pennisetum clandestinum*	G	FACU	I	Limited		X	X				
Fountain grass	*Pennisetum setaceum*	G	NL	I	Moderate							X
Pennisetum	*Pennisetum villosum*	G	NL	I	Watch	X				X		X
Annual bluegrass	*Poa annua*	G	FAC	I			X					
Smilo grass	*Stipa mileacea*	G	NL	I	Limited			X	X	X		
Purple needlegrass	*Stipa pulchra*	G	NL	N		X						
Cultivated wheat	*Triticum aestivum*	G	NL	I					X			
Rattail fescue	*Festuca myuros*	G	FACU	I	Moderate	X					X	X

Native Status Notes	Invasiness Notes
N: Native (to the region)	Invasiveness Rating from California Invasive Plant Inventory (2020)
I: Introduced	

Wetland Notes

OBL: Obligate wetland species, occurs almost always in wetlands (>99% probability)
FACW: Facultative wetland species, usually found in wetlands (67-99% probability)
FAC: Facultative species, equally likely to occur in wetland and non-wetlands (34-66% probability)
FACU: Facultative upland species, not usually found in wetlands (1-33% probability)
UPL: Upland species, almost never found in wetlands (<1% probability)
NI: No indicator has been assigned due to a lack of information to determine indicator status
NL: Not listed, assumed upland species

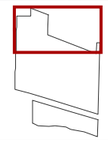
CARPINTERIA OIL & GAS PROCESSING FACILITIES – VEGETATION MAP

LEGEND:

Operational Area

Vegetation Types
- AG - Annual grassland or mustards
- CB - Coyote brush scrub
- CS - California sagebrush scrub
- CYP - Monterey cypress trees
- DEV - Developed (pavement, gravel, structures)
- EUC - Eucalyptus groves or windrows
- OAK - Coast live oak woodland
- ORN - Ornamental trees
- SYC - California sycamore woodland

MAP EXTENT:



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Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA
OIL AND GAS PROCESSING FACILITY PROPERTIES
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: June 2021

VEGETATION MAP

FIGURE 2A

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Oil & Gas Facility\Terrestrial Biological Resources Study\Vegetation Map 2021.mxd 6/3/2021

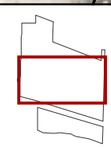
LEGEND:

Operational Area

Vegetation Types

- AG - Annual grassland or mustards
- AG/DIST - Disturbed annual grassland or mustards
- CS - California sagebrush scrub
- DEV - Developed (pavement, gravel, structures)
- ELD - Blue elderberry stands
- EUC - Eucalyptus groves or windrows
- EUC/TAM - Eucalyptus and Tamarisk thickets or windrows
- MF - Mulefat thicket
- OAK - Coast live oak woodland
- ORN - Ornamental trees
- SYC - California sycamore woodland
- TOY - Toyon Chaparral
- WIL - Arroyo willow thickets

MAP EXTENT:



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Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

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PROJECT NAME: CHEVRON CARPINTERIA OIL AND GAS PROCESSING FACILITY PROPERTIES SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: June 2021

VEGETATION MAP

FIGURE 2B

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Oil & Gas Facility\Terrestrial Biological Resources Study\Vegetation Map 2021.mxd 6/3/2021

LEGEND:

Operational Area

Vegetation Types

AG - Annual grassland or mustards
BARE - Bare ground
CB - Coyote brush scrub
CS - California sagebrush scrub
CYP - Monterey cypress trees
DEV - Developed (pavement, gravel, structures)
EUC - Eucalyptus groves or windrows
GB - Golden bush scrub
IP - Iceplant mats
LB - Lemonade berry scrub
SB - Saltbush (Quailbush) scrub
SYC - California sycamore woodland
WIL - Arroyo willow thickets

MAP EXTENT:

0 50 100
FEET

Source: KCSI Aerial Patrol 2020, ESRI Online Imagery Basemap
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA
OIL AND GAS PROCESSING FACILITY PROPERTIES
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: June 2021

VEGETATION MAP

FIGURE 2C

Z:\GIS Projects\GIS MassMap Project\Carpinteria Oil & Gas Facility\Terrestrial Biological Resources Study\Vegetation Map 2021.mxd 6/3/2021

Appendix C-8

Essential Fish Habitat Assessment

ESSENTIAL FISH HABITAT ASSESSMENT

DECOMMISSIONING AND REMEDIATION OF THE CARPINTERIA OIL AND GAS PROCESSING FACILITIES SANTA BARBARA COUNTY, CALIFORNIA

Project No. 2002-5211

Prepared for:

Chevron West Coast Decommissioning Program
3916 State Street, Suite 200
Santa Barbara, CA 93105

Prepared by:

Padre Associates, Inc.
369 Pacific Street
San Luis Obispo, California 93401

OCTOBER 2021

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

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1.0 INTRODUCTION

This Essential Fish Habitat (EFH) assessment has been developed to support the proposed Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities Project (Project) located in the eastern portion of the City of Carpinteria, California, between U.S. Highway 101 State waters limited within the Pacific Ocean (Project Site) (Figure 1-1). This assessment is prepared in accordance with 50 Code of Federal Regulations (CFR) 600.920(g)(2) and addresses the managed fish and invertebrate taxa that could occur at the Project site.

EFH is defined as "…those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity." "Waters," as used in this definition, are defined to include "aquatic areas and their associated physical, chemical, and biological properties that are used by fish." These may include "…areas historically used by fish where appropriate; 'substrate' to include sediment, hard bottom, structures underlying the waters, and associated biological communities." "Necessary" means, "the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem." EFH is described as a subset of all habitats occupied by a species (NOAA, 1998).

1.1 PROPOSED ACTION

The onshore Project Site is located in the eastern portion of the City of Carpinteria, California, between U.S. Highway 101 and the Pacific Ocean (Figure 1-1). The onshore Project Site does not support any aquatic habitats. The offshore components of the Project site are located in the adjacent nearshore waters out to the State water limits (three nautical miles) in water depths from zero to 148 feet (45 meters).

The Project's purpose is to demolish and remove surface and subsurface facilities and subsequent remediation at the onshore Carpinteria Oil and Gas Processing Facility to accommodate the Project Site's potential future redevelopment. Offshore pipelines will be removed using reverse installation techniques with the help of divers excavating sections of buried pipeline, as needed. The pipelines will be lifted onto an offshore barge spread and cut into segments on the deck of the barge. Alternatively, some sections of pipeline may require cutting on the seafloor and lifting segments of pipe to the Project barge. Pipeline segments within the surf zone will be excavated (if necessary), cut, and pulled offshore for recovery to the barge deck and disposal.

1.2 SITE CHARACTERISTICS

Physical Characteristics. The offshore environmental setting for the Project includes nearshore, shallow water depths out to the continental shelf offshore Santa Barbara County. The primary substrates within the offshore segments of the pipeline corridor have been characterized as fine- to medium-grained smooth sediments, with infrequent areas of mixed smooth sediment and bedrock, coarse-grained sand, gravel, cobbles (Johnson et al., 2013). The marine habitats and biota are typical of those found in similar water depths within the Southern California Bight (SCB). The intertidal and subtidal habitats within the Project Site consists primarily of sand with a mosaic of intermittent low- to medium-relief rocks and soft-bottom sediments. In addition, the Casitas pier pilings provide submerged artificial substrates in the intertidal zone.

Vegetative Characteristics. Surf grass beds (*Phyllospadix* sp.) are commonly found along the southern California coastal areas in rocky intertidal substrate and are known to provide cover and habitat structure for intertidal invertebrates and marine alga. Surf grass is present on the surface of intertidal rocks in the study area and previous site visits during low tide events have identified surf grasses in subtidal habitats; however, its presence may fluctuate on a seasonal basis depending on the intensity of sand deposition or wave action. Eelgrass (*Zostera* spp.) is a type of marine flowering seagrass that grows in temperate marine environments and possesses important nursery and refuge qualities that are important for juvenile fish. Further study will be required to determine if eelgrasses (*Zostera* sp.) is present in the study area. The nearest recorded eelgrass bed is present in northern Ventura Harbor, approximately 16.5 miles southeast of the study area (Sherman and DeBruyckere, 2018).

Kelp beds, which are designated Habitat Areas of Particular Concern (HAPC) and serve as important groundfish habitat, are seasonally present immediately adjacent to the pipeline corridors within the Project site (Figure 1-2). The Gail and Grace pipeline bundle and 10-inch oil pipeline partially intersects with a kelp bed is located approximately 470 feet east of the Casitas Pier. Fish that utilize these kelp beds could be present in the Project site during decommissioning activities.

Wildlife Characteristics. The epifauna of the shallower sedimentary habitats typically includes several species of macro-invertebrates, including sea stars, Pacific sand dollars (*Dendraster excentricus*), and slender crabs (*Cancer gracilis*), as well as polychaete worms and mollusks. The rocky substrata tend to support a generally more diverse epibiota, dominated by mussels (*Mytilus californianus*) within the intertidal zone, as well as macrophytic algae, urchins (*Strongylocentrotus* spp.), sea stars, and cnidarians (anemones and solitary corals) in subtidal and water depths from 10 to 100 feet (approximately three to 30 meters). Epifauna of deeper waters in sedimentary habitats and those species found growing or foraging on exposed pipeline segments include plumose anemone (*Metridium senile*), bat stars (*Patiria miniate*), and rockfish (*Sebastes* sp.).

The open water habitat within the offshore Project pipeline corridors support migration and foraging habitat for fish, marine mammals, reptiles, and avifauna. Water depth between the subtidal zone and the boundary of California State waters (three nautical miles) ranges between approximately 30 to 148 feet and therefore would support species that are adapted to live at those depths. Remote Operated Vehicle (ROV) surveys have reported that the majority of the pipeline corridor is buried under soft sediments from approximately -45 to -140 feet and then intermittently exposed to the State waters limit (-148 feet).

Figure 1-1. Project Location

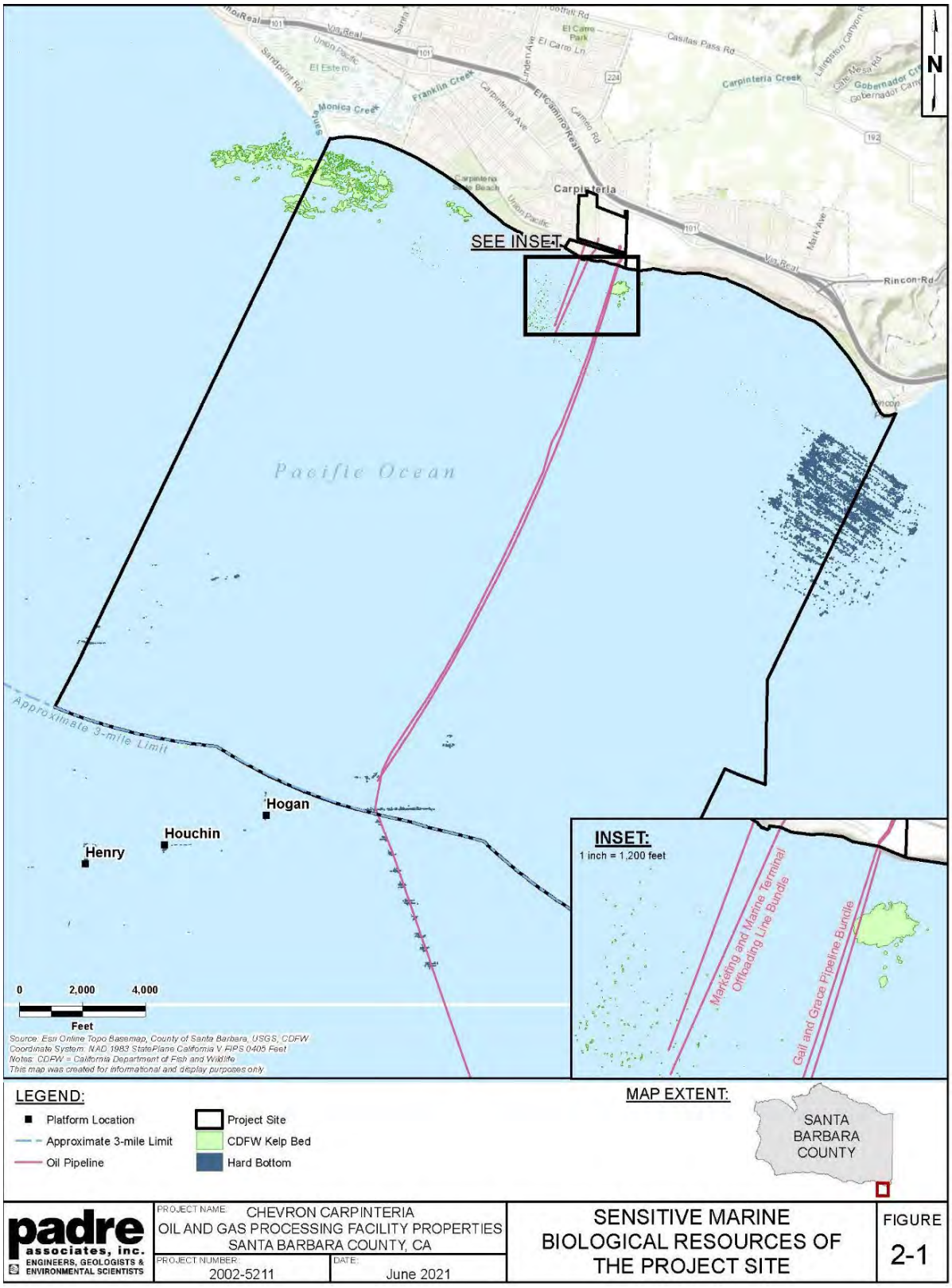

Figure 1-2. Sensitive Marine Resources in Project Area

2.0 MANAGED SPECIES OF INTEREST

The National Marine Fisheries Service (NMFS) EFH online mapper was utilized to identify which management units are located within the offshore Project area (NMFS, 2021). Species distribution and habitat information was used to develop Table 2-1 which lists the managed species that could occur within the geographical region, water depth range**,** and habitat types found within the Project area (McCain et al., 2019).

The Pacific Fishery Management Council (PFMC) manages economically important fish under four Fishery Management Plans: 1) Coastal Pelagics Fishery Management Plan (CPFMP); 2) Pacific Salmon Fishery Management Plan; 3) Pacific Groundfish Fishery Management Plan (PGFMP); and 4) Highly Migratory Species Fishery Management Plan (HMS FMP). A list of managed species that could be found during all or part of their life cycle within the Project area is provided in Table 2-1. At least 46 species listed under the PGFMP, seven species listed under the CPFMP, and two species under the HMS FMP frequent kelp beds, rock reefs, benthic, and open water habitats in less than 148 feet (45 meters) of water off the coast of Santa Barbara, California, and could be present during some life stages in the nearshore Project area. The pelagic species could be present for short-time periods as schooling adults whereas many of the groundfish species could be present for longer time periods as both juveniles and adults. The juveniles of many rockfish species use the shallow-water algae and kelp canopies during early development before settling over deeper water or to the bottom. Benthic rockfish juveniles could be found in Sargassum and algae beds. Cabezon, lingcod, and greenlings could be present as adults, in egg masses (nests) on substrate, and as settled juveniles in adjacent kelp beds (CDFW, 2001; Love, 1996).

Table 2-1. Fish Species Managed Under Pacific Fishery Management Plans

Management Plan	Common Name	Scientific Name
Fin Fish Managed under CPFMP	Northern anchovy	*Engraulis mordax*
	Pacific mackerel	*Scomber japonicus*
	Jack mackerel	*Trachurus symmetricus*
	Pacific sardine	*Sardinops sagax caerulea*
	Krill	*Thysanoessa spinifera*
		Euphausia pacifica
	Market squid	*Doryteuthis (Loligo) opalescens*
	Total	**7**
Groundfish Managed under PGFMP	**Flatfish**	
	Arrowtooth flounder	*Atheresthes stomias*
	Butter sole	*Isopsetta isolepis*
	Curlfin sole	*Pleuronichthys decurrens*
	Dover sole	*Microstomus pacificus*
	English sole	*Parophrys vetulus*
	Flathead sole	*Hippoglossoides elassodon*
	Pacific sanddab	*Citharichthys sordidus*
	Petrale sole	*Eopsetta jordani*

Table 2-1. Fish Species Managed Under Pacific Fishery Management Plans

Management Plan	Common Name	Scientific Name
	Rex sole	*Glyptocephalus zachirus*
	Rock sole	*Lepidopsetta bilineata*
	Sand sole	*Psettichthys melanostictus*
	Starry flounder	*Platichthys stellatus*
	Rockfish and Scorpaeniform Roundfishes	
	Kelp greenling	*Hexagrammos decagrammus*
	Lingcod	*Ophiodon elongates*
	Bank rockfish	*Sebastes rufus*
	Black Rockfish	*Sebastes melanops*
	Black-and-yellow rockfish	*Sebastes chrysomelas*
	Blue rockfish	*Sebastes mystinus*
	Bocaccio	*Sebastes paucispinis*
	Brown rockfish	*Sebastes auriculatus*
	Calico rockfish	*Sebastes dalli*
	California scorpionfish	*Scorpaena guttata*
	Canary rockfish	*Sebastes pinniger*
	Chilipepper	*Sebastes goodei*
	China rockfish	*Sebastes nebulosus*
	Copper rockfish	*Sebastes caurinus*
	Cabezon	*Scorpaenichthys marmoratus*
	Cowcod	*Sebastes levis*
	Darkblotched rockfish	*Sebastes crameri*
	Dusky rockfish	*Sebastes variabilis*
	Dark rockfish	*Sebastes ciliatus*
	Flag rockfish	*Sebastes rubrivinctus*
	Gopher rockfish	*Sebastes carnatus*
	Grass rockfish	*Sebastes rastrelliger*
	Greenblotched rockfish	*Sebastes rosenblatti*
	Greenspotted rockfish	*Sebastes chlorostictus*
	Greenstriped rockfish	*Sebastes elongatus*
	Harlequin rockfish	*Sebastes variegatus*
	Honeycomb rockfish	*Sebastes umbrosus*
	Kelp rockfish	*Sebastes atrovirens*
	Mexican rockfish	*Sebastes macdonaldi*
	Olive rockfish	*Sebastes serranoides*
	Pacific Ocean perch	*Sebastes alutus*
	Quillback rockfish	*Sebastes maliger*
	Rosethorn rockfish	*Sebastes helvomaculatus*
	Rosy rockfish	*Sebastes rosaceus*
	Rougheye rockfish	*Sebastes aleutianus*
	Shortracker rockfish	*Sebastes borealis*
	Shortspine thornyhead	*Sebastolobus alascanus*

Table 2-1. Fish Species Managed Under Pacific Fishery Management Plans

Management Plan	Common Name	Scientific Name
	Speckled rockfish	*Sebastes ovalis*
	Squarespot rockfish	*Sebastes hopkinsi*
	Starry rockfish	*Sebastes constellatus*
	Tiger rockfish	*Sebastes nigrocinctus*
	Treefish rockfish	*Sebastes serriceps*
	Vermilion rockfish	*Sebastes miniatus*
	Widow rockfish	*Sebastes entomelas*
	Yelloweye rockfish	*Sebastes ruberrimus*
	Yellowtail rockfish	*Sebastes flavidus*
	Roundfish	
	Pacific cod	*Gadus macrocephalus*
	Sharks and Rays	
	Leopard shark	*Triakis semifasciata*
	Longnose skate	*Raja rhina*
	Total	**46**
Migratory Fish Managed under HMS FMP	Common Thresher Shark	*Alopias vulpinus*
	Dorado	*Coryphaena hippurus*
	Total	**2**

3.0 IMPACT ASSESSMENT

The rocky substrate within the immediate Project area is limited and, when present, appears to be routinely subjected to substantial sand scour and supports only a limited algal and invertebrate community. In the case that rocky substrate occurs in the pipeline decommissioning area(s), potential damage to that substrate from removing pipelines or from diver activities uncovering buried pipelines could result in short-term impacts to EFH. Further, kelp, eelgrass, and algae-covered rocky substrates are included in the group of Habitats of Particular Concern (HAPC) called "shallow water living substrates" and are considered important for some managed groundfish species (Dobrzynski and Johnson, 2001). Damage to that habitat could be considered significant to essential habitat for some of the nearshore rockfish listed in Table 2-1.

Habitat Areas of Particular Concern. Based on the proposed activities and the assessment of existing habitats, only the adjacent kelp beds adjacent to the Project area represent essential habitat and potential HAPC for managed species. By avoiding these features (see Section 4.0, Mitigation), potential impacts related to removal of the pipelines and associated diver activities would not result in a significant impact to the EFH of any of the managed species that could occur within the area. Specifically, anchoring of any work vessel will only occur in sedimentary habitats and will be situated so that anchor lines will not impact kelp or algae-covered rocks. In small sections where pipeline bundles intersect with kelp beds, removal operations will avoid existing kelp beds. To avoid impacts to kelp and hardbottom, the pipeline segment will be lifted or floated to the surface further offshore and outside of the kelp canopy to ensure that no interaction would result or damage to hardbottom will occur. There are no HAPCs designated for highly migratory or coastal pelagic species; and there will be no permanent impacts to EFH for those species. Offshore decommissioning activities will be limited to narrow corridors of primarily sedimentary seafloor within which the pipelines will be removed. The sedimentary bottom will be disturbed only during removal activities and Project vessels will not anchor in deep-water hard bottom habitat or within areas of sensitive resources.

Turbidity/Suspended Sediments. Potential underwater activities associated with decommissioning of structures includes anchoring, underwater cutting, excavating and securing the pipelines to the lifting equipment and recovering pipelines to an offshore barge. Resuspended sandy sediments are expected to settle quickly to the seafloor after disturbance. Little, if any, long-term water column turbidity is expected.

The sandy and exposed bedrock habitat that characterizes most of the seafloor within the area immediately adjacent to the pipelines and within the proposed anchor locations is not unique and is common throughout the region. Impacts to that habitat are expected to be short-term and insignificant to the EFH of managed species that may utilize it.

4.0 MITIGATION

An anchor pre-plot will be developed specific to the Project site and Project activities, will be submitted with the Contractor Project Work and Safety Plan (PWSP) for review and approval. The anchor pre-plot will identify designated anchoring locations that avoid hard-bottom habitat. In addition, all anchors will be lowered vertically to the seafloor in a controlled manner. Each anchor will be recovered using a crown line to pull it vertically through the water column. Those methods will reduce sediment resuspension, seafloor alteration, and potential damage to rocky substrate. In addition, pre-decommissioning nearshore marine biological surveys will be conducted to identify any sensitive sea grass beds or rocky reef habitats that intersect with the pipeline corridors. Avoidance of these areas will reduce or eliminate impacts sensitive habitats.

The depression in the sedimentary seafloor that is expected to result from removal of the pipelines offshore or toward the shore is expected to quickly fill with surrounding sediments driven by near-bottom currents and by wave-generated currents. The Project area is an exposed coastline and is subject to storm waves. As mitigated, only short-term effects (sediment resuspension) are expected. No long-term impacts to the essential fish habitat, which consists of sedimentary and rocky habitats and the water column, are expected to result from the proposed action as mitigated.

5.0 REFERENCES

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Appendix C-9

Supplemental Marine Surveys and Habitat Characterization Technical Report

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

December 16, 2022
Project No. 2002-5211

Chevron West Coast Decommissioning Program
3916 State Street, Suite 200
Santa Barbara, California 93105

Attention: Ms. Becky Trujillo, Regulatory Affairs Manager

Subject: Supplemental Marine Surveys and Habitat Characterization Technical Letter-Report for Carpinteria Oil and Gas Offshore Pipelines, Carpinteria, Santa Barbara County

Dear Ms. Trujillo:

Padre Associates, Inc. (Padre) is pleased to provide this letter-report on behalf of Chevron USA (Chevron) in support of the Decommissioning and Remediation of the Carpinteria Oil and Gas Processing Facilities Project (Project). The letter-report was prepared following review of offshore surveys that provided additional information of the existing conditions in the Project pipeline corridors. The objective of this letter-report is to supplement the habitat characterization included in the Project's Marine Biological Resources Study (Padre, 2021) and provide additional analysis regarding potential impacts to marine habitats during the proposed Project as presented in the California Environmental Quality Act (CEQA) Initial Study.

The proposed Project includes demolition of surface and subsurface facilities and remediation of any subsurface soil and groundwater contamination at the Carpinteria Onshore Oil and Gas Processing Facility, as well as subsea pipeline removal from the shore out to State Waters (three nautical miles) (Project Site). The Project will also include the removal of pipelines from the bluff and beach areas adjacent to the Casitas Pier and west of the Carpinteria Harbor Seal Rookery. Due to the marine nature of this letter-report the following section details the background information needed to include a complete discussion of the offshore Project site and Project activities that have the potential to impact the marine environment.

BACKGROUND

The offshore Project site is located between the onshore Project Site and the State Water boundary within the Santa Barbara Channel (Attachment 1 – Figures, Offshore Project Site and Study Area). Two operational areas are present within the beach crossing and offshore Project site: The Marketing and Marine Terminal Offloading Lines Bundle and the Gail and Grace Pipeline Bundle/10-inch oil pipeline area.

As part of the Project's Coastal Development Permit Application, a Marine Biological Resources Study was finalized in June 2021; however, subsequent geophysical and remote operated vehicle (ROV) surveys were conducted of the Project's pipeline corridors in the later part of June and August 2021, respectively. The geophysical surveys were conducted along the Marketing and Marine Terminal Offloading Line Bundle as well as partially along the Gail and Grace Bundle, while the ROV surveys included only the Gail and Grace Bundled pipelines. In an effort to provide a comprehensive characterization of the marine habitats associated with the

Project site, Padre marine biologists reviewed the offshore survey reports, videos and mapping, with a focus of characterizing the biological marine resources present and have summarized the methods and results in following sections.

METHODS

Chevron contracted Fugro USA Marine Incorporated (FUSAMI) and Aqueos Corporation (Aqueos) to perform offshore surveys of the Project pipeline corridors. FUSAMI completed geophysical surveys from June 23 through 27, 2021 along the Marketing and Marine Terminal Offloading Line Bundle, and along the inshore portion of the Gail and Grace Bundle. Geophysical surveys equipment included magnetometer, multibeam echosounder, sub-bottom profiler, and side scan sonar which was deployed from the *M/V Julie Ann*. Aqueos completed ROV surveys from August 4 through 14, 2021 of the Gail and Grace Bundled pipelines starting from the State Waters boundary. Surveys were conducted from the *M/V Clean Ocean* using an ROV camera to record survey video and a side scan sonar to track pipeline location on the seafloor.

The surveys' combined objectives were to complete required external inspections and to identify any the location of exposed or spanning pipeline, debris, and hard bottom habitats that may occur along each pipeline bundle; however, the FUSAMI survey was limited to geophysical data collection, while the Aqueos survey was only a visual survey.

RESULTS

The surveys resulted in the mapping provided in Attachment 1 as well as approximately nine hours of video taken of the Gail and Grace Bundled Pipelines in State Waters. Both surveys found that the pipelines in their respective survey areas were primarily buried under sand sediments. In areas where the pipelines were exposed, it was exposed for short distances and was mostly devoid of marine life. The vessel size and equipment dictated the water depths that were included in each survey. Table 1 summarizes the depth ranges that each survey covered within State Waters.

Table 1. 2021 Offshore Pipeline Surveys in State Waters

Company and Survey Type	Pipeline Bundle	Depth Range (feet)
Aqueos ROV Survey	Gail and Grace Bundle	50 to 145
FUSAMI Geophysical Survey	Gail and Grace Bundle	28 to 74
	Marketing and Marine Terminal Offloading Line Bundle	18 to 61

Aqueos ROV Survey. In water depths of approximately -50 to -115 feet, the Aqueos ROV surveys recorded the Grace and Gail Bundle alignment continuously buried under sand and silt sediments. As the survey moved offshore, the pipelines continued to be primarily buried but have five areas of short exposure until they cross the Hogan to Shore pipeline bundle in -145 feet of water near the State Waters boundary line. Low visibility made it difficult to identify any species to taxa; however, the Gail and Grace Bundle alignment was mostly devoid of marine life aside from small schooling fish occasionally observed swimming above the pipeline alignment. Minor debris was noted, but nothing that compromised the integrity of the pipelines.

FUSAMI Geophysical Surveys. Multibeam imagery from the FUSAMI surveys found the seafloor gradually sloping from water depths of -13 feet in the nearshore region to -74 feet at the edge of the survey area. Sub-bottom profiler depth of burial measurements found that, on average, the Gail and Grace Bundled pipelines are buried between one to three feet deep inshore of 74 feet and the Marketing and Marine Terminal Offloading Line bundle is also buried one to three feet inshore of 60 feet. There were no refractions of rock reef or marine vegetation identified within the pipeline corridors on the multibeam or side scan sonar data. The side scan sonar data identified 17 individual targets within the Marketing and Marine Terminal Offload Line and Gail and Grace Bundles. Sixteen of those targets were identified as "unknown targets" ranging in length from 3.0 to 32.1 feet with an unknown linear target along the 20-inch loading pipeline that potentially shows the only area of pipeline exposure. The potential pipeline exposure area is 31.8 feet long and 2.6 feet wide. There is no video footage of this area of exposed pipeline, but neither multibeam or side scan sonar indicate any presence of marine vegetation or other hard substrates.

CONCLUSION

Results from the both the ROV and geophysical surveys showed that the Gail and Grace Bundle and Marketing and Marine Terminal Offloading Line Bundle were primarily buried in sand and silt sediments along their alignment within State Waters, with infrequent and short lengths of exposure. There were no observations of hard substrates, kelp, or surf grass attached to the pipelines or within the pipeline corridors during either survey. Given the pipelines' depth of burial in sand, it is unlikely that suitable habitat would be present for sensitive marine species; therefore, direct impacts are not expected to sensitive marine resources within the survey areas and depths presented above.

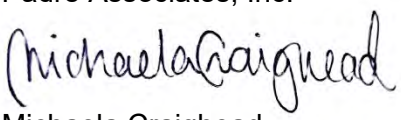
However, shallow water depths precluded surveys from encroaching into water depths less than 18 feet along the Marketing and Marine Terminal Bundle and 28 feet along the Gail and Grace Bundle. Past visual surveys of the beach pipeline crossing areas have recorded rock outcroppings along the shoreline; therefore, assuming the bedrock remains at a similar depth in the un-surveyed area, it is likely that intertidal and nearshore habitats may consist of mixed sand and rock outcropping habitat in the surf zone as well (Attachment 2 – Site Photographs); however, to what extent these habitats overlap with the Project pipeline corridors remains undetermined.

In mixed sand and rock marine habitats, wave exposure, sediment grain size, and water depth are the main physical factors that influence the composition of intertidal and subtidal benthic communities. In addition, seasonal sand deposits and retractions create dynamic substrates that preclude the recruitment and establishment of marine vegetation and reef forming species that create rare rock reef and Essential Fish Habitats (i.e., kelp beds, surf grasses, eelgrass, turf alga). The deposition and retraction of sand on pipelines further offshore would also explain while even in areas of exposure little to no marine growth is present on the pipelines. Due to these physical factors, soft substrate habitats within the intertidal and subtidal zone typically lack vegetation and have a lower diversity and abundance of species than those areas with perennially exposed hard substrate. The lack of marine vegetation reduces the habitat structure available to recruit common reef invertebrates and fish, as well as protected marine species such as abalone; therefore, direct impacts to established sensitive habitats and protected species are unlikely to occur in the Project site.

In accordance with the Project's Marine Biological Resources Study's assessment and CEQA Initial Study, MM BIO-6: Essential Fish Habitat Avoidance, would still require pre-decommissioning marine biological dive surveys to be conducted of the nearshore pipeline corridors to identify and avoid any sensitive habitats that may have yet to be identified inshore of the ROV and geophysical surveys detailed in this letter report. In addition, although unlikely to occur, pre-decommissioning eelgrass surveys would also be conducted as part of MM BIO-6 in accordance with the California Eelgrass Mitigation Policy and in consultation with the National Marine Fisheries Service.

Sincerely,

Padre Associates, Inc.



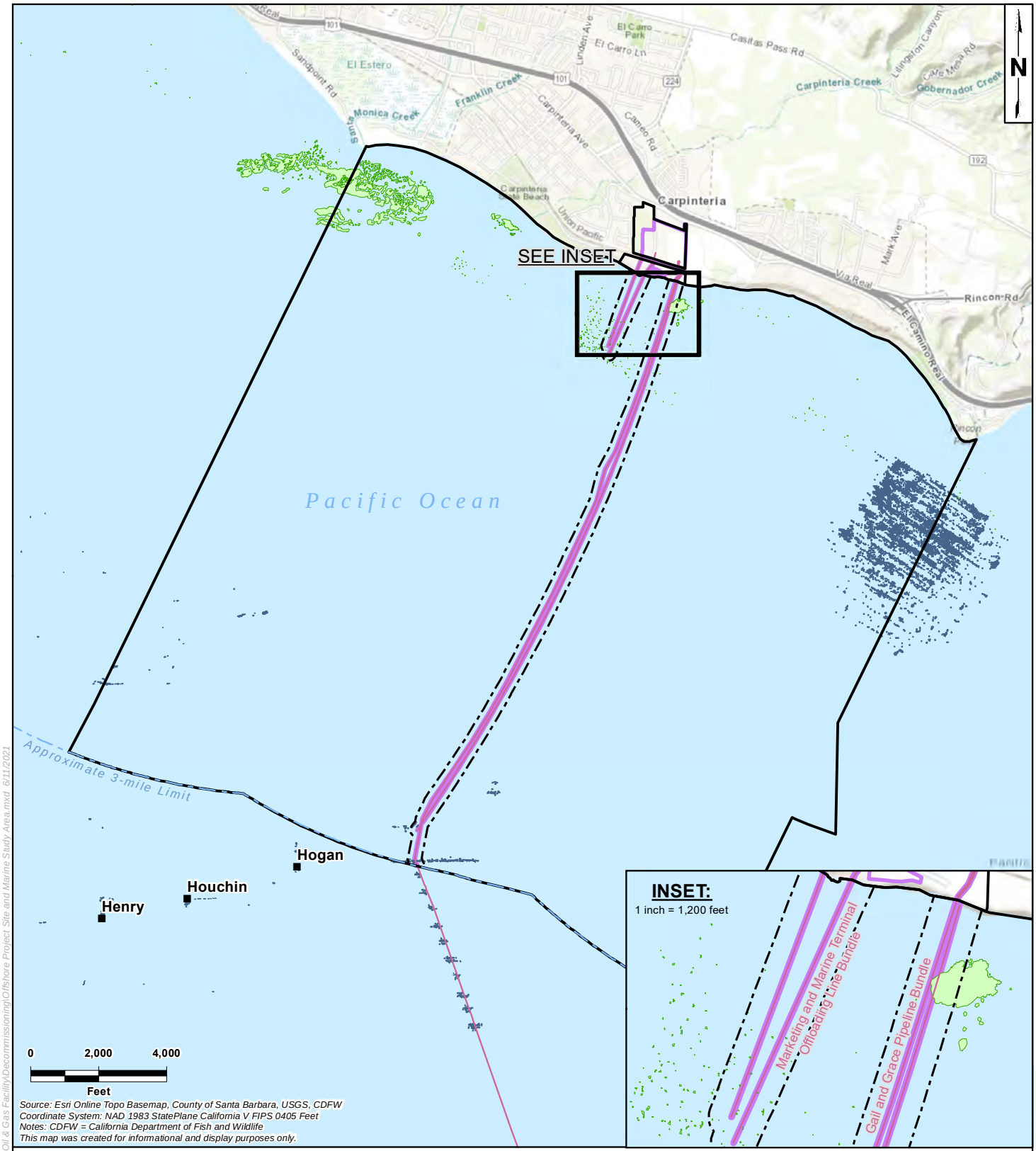
Michaela Craighead
Project Marine Biologist

Attachment: 1 Figures
2 Site Photographs

c:

ATTACHMENT 1

FIGURES



LEGEND:

- Platform Location
- Approximate 3-mile Limit
- Oil Pipeline
- Project Site
- CDFW Kelp Bed
- Hard Bottom
- Project Disturbance Area
- Study Area (400 ft)

MAP EXTENT:

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA
OIL AND GAS PROCESSING FACILITY PROPERTIES
SANTA BARBARA COUNTY, CA

PROJECT NUMBER: 2002-5211

DATE: December 2022

OFFSHORE PROJECT SITE AND MARINE STUDY AREA

FIGURE 1

Z:\GIS Projects\GIS Maps\Map Project\Carpinteria Oil & Gas Facility\Decommissioning\Offshore Project Site and Marine Study Area.mxd 6/11/2021

6103000 6103500 6104000 6104500 6105000 6105500 6106000 6106500 6107000 6107500 6108000

1966500 1966000 1965500 1965000 1964500 1964000 1963500 1963000 1962500 1962000

N W E S

(2) 6" & 8" Pipelines (Abandoned)

(2) 14" Sabdrain Lines & 6" Water Water Line

Union Pacific

CPS

California Coastal National Monument

SC-005

SC-007

12" Gas Pipeline

20" Marconi Terminal

20" Crude Loading Line - 6" & 8" Piped Water Water

SC-013

SC-014

SC-015

SC-016

SC-017

SC-018

SC-019

SC-020

SC-021

SC-022

SC-023

SC-024

SC-025

SC-026

SC-027

Subsea Power Cable

Abandoned Power Cable

Pipeline Bundle From Lease Boundary to Shore

Esri Community Maps Contributors, BuildingFootprintUSA, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Management, EPA, NPS, US Census Bureau, USDA

E:\Projects\02_21040036_Chevron_Marine\Remote\Outputs\Work_Area\02_Carpinteria_Terminal.aprx, 8/17/2021, ataroff

Legend

- Current Map Extent (Key Map)
- SC-001 Side Scan Sonar Contact

Infrastructure

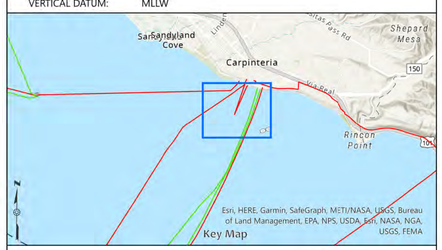
- Pipeline
- Inferred Power Cable
- Mooring

NOTES:

1. Bathymetric contours are in feet and referenced to MLLW based on tide observations for Santa Barbara, CA (Tide station 9411340).
2. Survey equipment utilized during data acquisition included the following systems:
   - Fugro G4+ Signal Primary Positioning Signal
   - Applanix POS MV Inertial Navigation System Oceanmaster
   - Norbit iWBMSh STX Multibeam System
   - Edgetech 4125 Digital Dual Frequency Side Scan Sonar
   - Geometrics G-882 Magnetometer Towfish
   - Edgetech 3200 Sub-Bottom Profiler with SB-216S Towfish
3. Survey data were collected on June 23 - 27, 2021 aboard the M/V Julie Ann.
4. Existing features including as-built pipelines, cable locations and seafloor features are compiled from as-built and historical data, as well as seamless Fugro ENC database and NOAA charts.

GEODETIC INFORMATION

DATUM:	NAD83
PROJECTION:	California Coordinate System (CCS) (Lambert Conformal Conic Projection)
ZONE:	Zone 5
UNITS:	U.S. Survey Feet
VERTICAL DATUM:	MLLW



Key Map

FUGRO USA MARINE
4820 McGrath St., Suite 100
Ventura, California 93003
Tel: (805) 650-7000
www.fugro.com

CARPINTERIA MARINE TERMINAL GEOPHYSICAL SURVEY

SIDE SCAN SONAR MOSAIC

OFFSHORE CARPINTERIA, CA
JUNE 2021

SCALE : 1" = 200'

200 100 0 200 400 600 Feet

REV NO:	DATE:	DESCRIPTION:	DRAWN:	CHKD:	APPR:
0	JUNE2021	MBES, Side Scan Sonar, Mag and Sub-Bottom Profiler Survey	AT	DE/KC	CP

JOB NUMBER – DRAWING NUMBER: **02.21040036 - 1**

CHART NO.: **2 of 2**

M-2 Grace to Shore

Fix	Easting	Northing	Description
918	6102358.9	1940827.39	Start of Span
919	6102346.77	1940860.72	End of Span 34'
920	6102339.49	1940891.41	Start of Span
921	6102332.39	1940910.37	End of Span 20'
922	6102327	1940927.63	Start of Span
923	6102313.97	1940962.7	End of Span 37'
924	6102308.79	1940977.68	Start of Span
925	6102296.67	1941017.61	End of Span 39'
926	6102282.25	1941052.67	Start of Span
927	6102272.65	1941073.52	End of Span 25'
928	6102260.45	1941187.82	Start of Span
929	6102221.54	1941213.12	End of Span 26'
930	6102208.78	1941231.02	Start of Span
931	6102210.23	1941240.94	End of Span 19'
932	6102192.28	1941313.83	Start of Span
933	6102185.78	1941329.34	End of Span 20'
934	6102129.62	1941486.83	Start of Span
935	6102117.94	1941526.36	End of Span 31'
936	6102068.69	1941677.74	Start of Span
937	6102058.19	1941695.83	End of Span 19'
938	6102019.89	1941810.4	Anode Fix
939	6101929.7	1942078.93	Start of Span
940	6101908.25	1942122.44	End of Span 46'
941	6101748.1	1942587.79	Start of Span
942	6101740.91	1942601.52	End of Span 14'
943	6101541.31	1943207.58	Position Fix
944	6101428.08	1943546.96	Start of Span
945	6101412.61	1943596.17	End of Span 53'
946	6101412.49	1943608.54	Start of Span
947	6101380.17	1943671	End of Span 62'
948	6101278.4	1943781.75	Start of Span
949	6101370.13	1943736.08	End of Span 40'
950	6101361.46	1943760.43	Start of Span
951	6101344.25	1943807	End of Span 49'
952	6101283.55	1943981.3	Start of Span
953	6101270.83	1944021.95	End of Span 41'
954	6101259.93	1944098.59	Start of Span
955	6101233.86	1944116.46	End of Span 81'
956	6101190.83	1944526.43	Start of Span
957	6101086.36	1944800.46	End of Span 80'
958	6101052.93	1944880.05	Start of Span
959	6101028.13	1944889.85	End of Span 12'
960	6101022.56	1944909.61	Start of Span
961	6101014.24	1944932.95	Debris-Fishing Trap
962	6100979.68	1945032.42	Pipeline Crossing
963	6100951.34	1945087.76	End of Span 269'
964	6100791.97	1945380.78	Position Fix-Pipeline Buried
965	6100773.91	1945421.67	Position Fix-Pipeline Exposed
966	6100755.28	1945460.62	Position Fix-Pipeline Buried
967	6100755.7	1945521.47	Position Fix-Pipeline Exposed
968	6100702.63	1945627.84	Start of Span
969	6100688.26	1945661.25	End of Span 32'
970	6100682.58	1945682.56	Start of Span
971	6100673.49	1945706.54	End of Span 25'
972	6100652.15	1945762.85	Start of Span
973	6100648.26	1945773.8	End of Span 12'
974	6100635.01	1945844.95	Start of Span
975	6100613.28	1945884.72	End of Span 43'
976	6100600.1	1945915.26	Position Fix-Pipeline Buried
977	6100580.54	1945979.78	Position Fix-Pipeline Exposed
978	6100543.37	1946089.59	Position Fix-Pipeline Buried
979	6100433.77	1946365.36	Position Fix-Pipeline Exposed

Fix	Easting	Northing	Description
980	6100420.67	1946425.22	Position Fix-Pipeline Buried
981	6100346.76	1946997.89	Position Fix-Pipeline Exposed
982	6100329.42	1946940.78	Position Fix-Pipeline Buried
983	6100306.98	1946722.09	Position Fix-Pipeline Exposed
984	6100302.08	1946744.49	Position Fix-Pipeline Buried
985	6100272.75	1946825.15	Position Fix-Pipeline Exposed
986	6100252.12	1946900.39	Position Fix-Pipeline Buried
987	6100190.39	1947038.78	Position Fix-Pipeline Exposed
988	6100168.04	1947118.79	Position Fix-Pipeline Buried
989	6100138.09	1947166.08	Position Fix-Pipeline Exposed
990	6100122.89	1947208.6	Position Fix-Pipeline Buried
991	6099953.71	1947686.06	Position Fix-Pipeline Buried
992	6099777.26	1948167.98	Position Fix-Pipeline Buried
993	6099709.24	1948356.8	Position Fix-Pipeline Exposed
994	6099699.54	1948378.7	Position Fix-Pipeline Buried
995	6099520.91	1948843.92	Position Fix-Pipeline Buried
996	6099467.82	1948991.46	Position Fix-Pipeline Crossing
997	6099420.82	1949173.79	Position Fix-Pipeline Exposed
998	6099394.94	1949241.57	Position Fix-Pipeline Buried
999	6099367.87	1949313.15	Position Fix-Pipeline Exposed
1000	6099351.91	1949529.1	Flange Guard
1001	6099352.21	1949590.54	Position Fix-Pipeline Buried
1002	6099355.02	1949690.46	Position Fix-Pipeline Exposed/Flange Guard
1003	6099354.9	1949813.06	Pipeline Buried
1004	6099379.3	1949744.85	Position Fix-Pipeline Exposed
1005	6099430.78	1949973.27	Debris-Fishing Trap
1006	6099500.67	1950122.3	Position Fix-Pipeline Buried
1007	6099879.26	1950620.56	Position Fix-Pipeline Buried
1008	6100117.06	1951022.06	Position Fix-Pipeline Buried
1009	6100468.21	1951417.72	Position Fix-Pipeline Buried
1010	6100728.39	1951831.85	Position Fix-Pipeline Buried
1011	6100987.23	1952249.3	Position Fix-Pipeline Buried
1012	6101254.13	1952674.22	Position Fix-Pipeline Buried
1013	6101542.18	1953116.23	Position Fix-Pipeline Buried
1014	6101802.41	1953545.25	Position Fix-Pipeline Buried
1015	6101988.49	1953845.53	Position Fix-Pipeline Exposed
1016	6102004.69	1953882.46	Position Fix-Pipeline Buried
1017	6102234.1	1954283.59	Position Fix-Pipeline Exposed
1018	6102269.46	1954333.69	Position Fix-Pipeline Buried
1019	6102355.04	1954794.31	Position Fix-Pipeline Buried
1020	6102620.26	1955226	Position Fix-Pipeline Buried
1021	6103062.32	1955881.74	Position Fix-Pipeline Buried
1022	6103278.58	1956140.39	Position Fix-Pipeline Buried
1023	6103483.15	1956695.88	Position Fix-Pipeline Buried
1024	6103683.65	1957260.12	Position Fix-Pipeline Buried
1025	6103888.42	1957513.46	Position Fix-Pipeline Buried
1026	6104098.2	1957987.77	Position Fix-Pipeline Buried
1027	6104296.22	1958453.05	Position Fix-Pipeline Buried
1028	6104487.89	1958923.26	Position Fix-Pipeline Buried
1029	6104667	1959387.4	Position Fix-Pipeline Buried
1030	6104903.14	1959850.27	Position Fix-Pipeline Buried
1031	6105090.83	1960398.39	Position Fix-Pipeline Buried
1032	6105258.56	1960776.18	Position Fix-Pipeline Buried
1033	6105462.76	1961243.82	Position Fix-Pipeline Buried
1034	6105658.2	1961785.45	Position Fix-Pipeline Buried
1035	6105858.86	1962181.64	Position Fix-Pipeline Buried
1036	6106058.86	1962651.26	Position Fix-Pipeline Buried
1037	6106189.66	1963127.49	Position Fix-Pipeline Buried
1038	6106380.65	1963684.15	Position Fix-Pipeline Buried
1039	6106567.91	1964081.83	Position Fix-Pipeline Buried
1040	6106589.96	1964158.27	End of Survey M2

Legend

- RDV Position Fix Location
- RDV Position Fix Location With Fix Number (Interval = 5 & First and Last Fix)
- Map Extent (Key Map)

Bathymetric Contours

- Major Contours, Contour Interval = 100 Feet
- Minor Contours, Contour Interval = 10 Feet

Infrastructure

- Backdown Mooring
- Pipeline
- Power Cable
- Telecom Cable
- Active Federal Lease with Lease Number
- Active State Lease with Lease Number
- 3-Mile Limit
- Platform
- Platforms (Key Map)

NOTES:

1. Surface positioning achieved using a STARFIX II DGPS positioning system integrated with Hypack navigation package.
2. Subsurface positioning was achieved using AAE Easytrak Nexus 2 USBL acoustic positioning system integrated with the surface navigation system.
3. Bathymetry contours from Fugro data combined with NOAA database. Contours are in feet and referenced to Mean Lower Low Water (MLLW).
4. Survey was conducted between August 4-6 2021.

GEODETIC INFORMATION

DATUM: NAD83
PROJECTION: California Coordinate System (CCS-83)
ZONE: Zone 5
UNITS: U.S. Survey Feet

KEY MAP

FUGRO USA MARINE
4820 McGrath St., Suite 100
Ventura, California 93003
Tel: (805) 650-7000
www.fugro.com

AQUEOS

Chevron

GRACE TO SHORE M-2 PIPELINE

ROV PIPELINE INSPECTION POST-PLOTS

August 2021
Santa Barbara Channel, California

SCALE : 1" : 800'

NO.	DATE	DESCRIPTION	DRAWN	CHKD	APPR.
B	AUG2021	ROV Pipeline Survey	KO	MC/AT	CP

JOB NUMBER - DRAWING NO.: 02210400042 - 2
CHART NO.: 3 of 3

ATTACHMENT 2

SITE PHOTOGRAPHS

Photo 1. West side of Casitas Pier and Marketing and Marine Terminal pipeline bundle area (buried). Date: April 20, 2021, aspect east.

Photo 2. East side of Casitas Pier with Gail and Grace pipeline bundle (buried) and exposed concrete armament. Date: April 20, 2021, aspect west.

Photo 3. Overview of typical intertidal habitat dominated by mussels (*Mytilus* sp.) within original Marine Biological Resources Study area. Marketing and Marine Terminal Offloading Line Bundle out of frame (buried) to the west of the rock outcroppings. Date: April 20, 2021, aspect south.

Photo 4. Imagery from 2021 Aqueos ROV survey. Debris crab trap noted adjacent exposed pipeline near State Waters boundary.

Photo 5. Imagery from 2021 Aqueos ROV survey. Exposed pipeline with minimal marine growth.

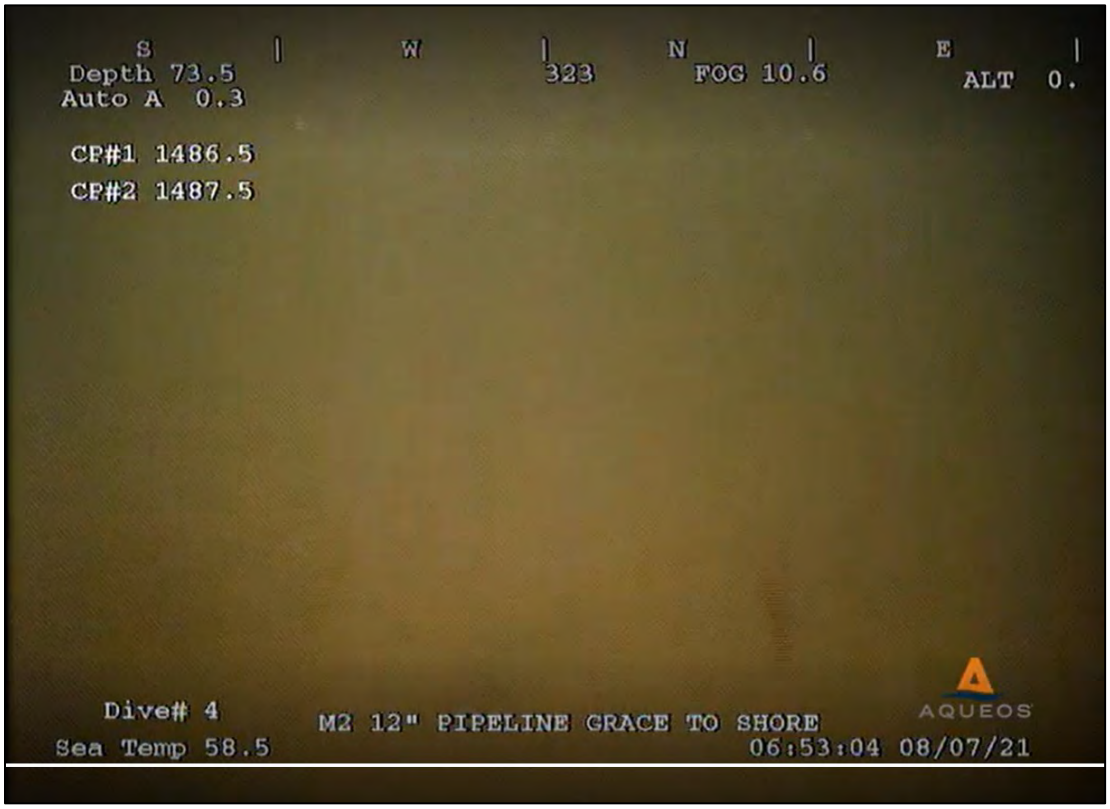


Photo 6. ROV imagery from 2021 Aqueos survey. Sand/mud bottom surrounding the area of buried pipeline at 73.5 feet.