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## LIST OF ABBREVIATIONS AND ACRONYMS

The following table contains the abbreviations and acronyms used in the text.

### UNITS OF MEASUREMENT

°F	degrees Fahrenheit	$L_{eq(24)}$	24-hour equivalent sound level
af	acre feet	mg/kg	milligrams per kilogram
BOPD	barrels of oil per day	mile <sup>2</sup>	square miles
BWPD	barrels of water per day	MMSCFD	million standard cubic feet per day
cy	cubic yard	MSCFD	thousand standard cubic feet per day
dB; dBA	decibel; decibels on the A-weighted scale	nm	nautical mile
ft <sup>2</sup>	square foot	ppb	parts per billion
GWh/year	Gigawatt-hours/year	ppm	parts per million
Hz	hertz	ppt	parts per thousand
kHz	kilohertz	psi	pounds per square inch
km	kilometer	psig	pounds per square inch gauge
KVA	kilovolt amperes	SCF	standard cubic feet
kW	kilowatt	$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
$L_{dn}$	day-night sound level	V	volts
$L_{eq}$	equivalent steady sound level that provides an equal amount of acoustical energy as the time-varying sound	V/C	volume to capacity ratio
		VAC	volts of alternating current

### OTHER ABBREVIATIONS & ACRONYMS

<b>A</b>	AAPL	All American Pipeline
	AB	Assembly Bill
	ACP	Area Contingency Plan
	ACTI	Advanced Cleanup Technologies, Inc.
	ADL	Arthur D. Little, Inc.
	ANSI	American National Standards Institute
	AOA	Airport Operating Area
	APCD	Air Pollution Control District
	API	American Petroleum Institute
	ATC	Authority To Construct
<b>B</b>	BMP	Best Management Practice
	BOEM	Bureau of Ocean Energy Management
	BOEMRE	Bureau of Ocean Energy Management, Regulation and Enforcement
	BSEE	Bureau of Safety and Environmental Enforcement
<b>C</b>	CAA	Clean Air Act
	CAAQS	California Ambient Air Quality Standards
	CalCOFI	California Cooperative Oceanic Fisheries Investigations
	CalEPA	California Environmental Protection Agency
	CARB	California Air Resources Board
	CBC	California Building Code

CCAA	California Clean Air Act
CCC	California Coastal Commission
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLIS	Comprehensive Environmental Resource Conservation and Liability Information System
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CINMS	Channel Islands National Marine Sanctuary
CIPC	California Invasive Plant Council
CLUP	Coastal Land Use Plan
CMP	Congestion Management Program
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CORRACTS	Corrective Action Sites
CPFV	commercial passenger fishing vessel
CSFM	California State Fire Marshal
CSLC	California State Lands Commission
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
<b>D</b> DOT	U.S. Department of Transportation
DOGGR	Division of Oil, Gas, and Geothermal Resources
DOT/OPS	U.S. Department of Transportation/Office of Pipeline Safety
DPM	Diesel Particulate Matter
DTSC	State Department of Toxic Substances Control
<b>E</b> EAP	Emergency Action Plan
EFH	Essential Fish Habitat
EIA	Energy Information Administration
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMT	Ellwood Marine Terminal
EOF	Ellwood Onshore Facility
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ERPG	Emergency Response Planning Guidelines
ESA	Endangered Species Act
ESH	Environmentally Sensitive Habitat
ESHA	Environmentally Sensitive Habitat Areas

## List of Abbreviations and Acronyms

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	ESP	electric submersible pump
F	FAA	Federal Aviation Administration
	FBE	Fusion Bonded Epoxy
	FERC	Federal Energy Regulatory Commission
	FHWA	Federal Highway Administration
	FPD	Fire Protection Division
	FRSB	Fast Response Spill Boat
	FSRU	Floating Storage and Regasification Unit
	FSV	flow safety valve
G	GHG	greenhouse gas
	GIS	Geographic Information System
	GLCS	Gas-Liquid Cyclone Separator
	GP	General Plan
H	H <sub>2</sub> S	hydrogen sulfide
	HDPE	High Density Polyethylene
	HWTS	Hazardous Waste Tracking System
I	ICS	Incident Command System
	IIRT	Initial Incident Response Team
	IMO	International Maritime Organization
	IPCC	Intergovernmental Panel on Climate Change
	IRI	Industrial Risk Insurers
L	LCP	Local Coastal Plan
	LFC	Las Flores Canyon
	LLCS	Liquid-Liquid Cyclone Separator
	LNG	liquefied natural gas
	LOS	Level of Service
	LPG	liquefied petroleum gas
	LRDP	Long Range Development Plan
M	MM	mitigation measure
	MMP	Mitigation Monitoring Program
	MMPA	Marine Mammal Protection Act
	MMS	Minerals Management Service
	MND	Mitigated Negative Declaration
	MOU	Memorandum of Understanding
	MRMD	Mineral Resources Management Division
	MS4	municipal separate storm sewer system
	MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
	msl	mean sea level
N	NAAQS	National Ambient Air Quality Standards
	ND	Negative Declaration
	NEPA	National Environmental Policy Act
	NFPA	National Fire Protection Association
	NFRAP	No Further Remedial Action Plan
	NGL	natural gas liquids
	NHPA	National Historic Preservation Act
	NMFS	National Marine Fisheries Service
	NO	nitrogen oxide

NO <sub>2</sub>	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOD	Notice of Determination
NOI	Notice of Intent
NOP	Notice of Preparation
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRC	National Response Center
NRHP	National Register of Historic Places
<b>O</b> O <sub>3</sub>	ozone
OCS	outer continental shelf
OES	Office of Emergency Services
OIT	Operator Interface Terminals
OPA	Oil Pollution Act
OPR	Office of Planning and Research
OSCP	Oil Spill Contingency Plan
OSHA	Occupational Safety and Health Administration
OSPR	Office of Spill Prevention and Response
OSPRA	Oil Spill Prevention and Response Act
OSRV	Clean Seas Oil Spill Response Vessel
<b>P</b> Pb	lead
PCB	polychlorinated biphenyl
Phase I ESA	Environmental Site Assessment
PM	particulate matter
PM <sub>2.5</sub>	particulate matter less than 2.5 microns
PM <sub>10</sub>	particulate matter less than 10 microns
PSV	Pressure Safety Valve
PTO	Permit to Operate
PTTC	West Coast Petroleum Technology Transfer Council
PUC	California Public Utilities Commission
<b>Q</b> QRA	Quantitative Risk Assessment
<b>R</b> RCRA	Resource Conservation and Recovery Act
RMS	Remote Monitoring System
ROC	Reactive Organic Carbon
ROG	Reactive Organic Gas
ROSF	Rincon Onshore Separation Facility
ROW	Right-of-Way
RP	Recommended Practice
RSPA	Research and Special Programs Administration
RWQCB	Regional Water Quality Control Board
<b>S</b> SAFE	Safety Analysis Function Evaluation
SBCAG	Santa Barbara County Association of Governments
SBCFD	Santa Barbara County Fire Department
<u>SBMTD</u>	<u>Santa Barbara Metropolitan Transit District</u>
SCADA	Supervisory Control and Data Acquisition
SCE	Southern California Edison

## List of Abbreviations and Acronyms

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SCEC	Southern California Earthquake Center
SCH	State Clearinghouse
SCUBA	self-contained underwater breathing apparatus
SFA	Sustainable Fisheries Act
SHPO	State Historic Preservation Office
SIMQAP	Safety, Inspection, Maintenance and Quality Assurance Program
SIP	State Implementation Plan
SIRT	Sustained Incident Response Team
SLIC	Spills, Leaks, Investigations and Cleanups List
SO <sub>2</sub>	sulfur dioxide
SPCC	Spill Prevention Control and Countermeasure Plan
SQG	Small Quantity Generator
<b>T</b> TAC	Toxic Air Contaminant
TOSCO	Shell and Conoco Phillips
TPH	Total Petroleum Hydrocarbons
TSS	Traffic Separation Scheme
<b>U</b> UBC	Uniform Building Code
UCSB	University of California, Santa Barbara
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
<b>V</b> VMC	Visual Modification Class
VRU	Vapor Recovery Unit



## GLOSSARY OF TECHNICAL TERMS

Bottomhole – The bottom of a well.

Caisson – A retaining, watertight structure used in geotechnical engineering.

Casing – Steel pipe cemented in place during the construction process to stabilize the wellbore. The casing forms a major structural component of the wellbore and serves several important functions: preventing the [formation](#) wall from caving into the wellbore, isolating the different formations to prevent the flow or [crossflow](#) of [formation fluid](#), and providing a means of maintaining control of formation fluids and pressure as the well is drilled.

Electric submersible pump – An artificial-lift system that utilizes a downhole pumping system that is electrically driven. The pump typically comprises several staged centrifugal pump sections that can be specifically configured to suit the [production](#) and wellbore characteristics of a given application.

Fall-off test – A pressure test in which a reservoir is pressurized with water, then the reduction in pressure over time is measured. This allows for analysis of the rate of leakage out of (or influx into) the reservoir related to adjacent reservoirs, aquifers, improperly sealed wells, etc.

Gas-Liquid and Liquid-Liquid Cyclone Separator – Compact vertical vessels mounted on Well 421-2 that subjects incoming fluids to a hydraulically created vortex and centrifugal forces, causing the heavier liquid particles to separate liquid and gas streams.

Heater treater – A vessel that uses heat to treat oil-water emulsions so the oil can be accepted by the [pipeline](#) or transport.

Mud line – The sea bottom, interface between ocean and land.

SCADA – Supervisory Control and Data Acquisition system, a computational pipeline monitoring system.

Shoe plug – A concrete plug at the bottom of a string of open casing.

String – An assembled length of steel pipe configured to suit a specific wellbore. The sections of pipe are connected and lowered into a wellbore, then cemented in place. Casing is [run](#) to protect or isolate formations adjacent to the wellbore.

Sub-surface safety valve – A safety device installed in the upper wellbore to provide emergency closure of the producing conduits in the event of an emergency. The valve is charged via hydraulic fluid and is designed to be fail-safe, so that the wellbore is isolated in the event of any system failure or damage to the surface [production](#)-control facilities.

Surface plug – A concrete plug placed from the surface down to a variable depth in the well bore – typically 50 feet in modern operations.

Surface safety valve – A safety valve installed at the top of the wellbore to prevent uncontrolled flow from the well, this valve would be failsafe and actuated by a charge of nitrogen gas.

Well cellar – A pit in the ground to provide additional height between the rig floor and the well head to accommodate the installation of blowout preventers and other equipment. It also collects drainage water and other fluids for disposal.

Wellhead – The system of spools, valves and assorted adapters that provide [pressure](#) control of a production well.

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