

TABLE 3a  
MUD PUMP EMISSIONS<sup>a</sup>

POLLUTANT	EMISSION FACTOR <sup>b</sup> (g/hp-hr)	lb/hr <sup>c</sup>	tons/well	TOTAL TONS (22 wells)
Nitrogen Oxides	14	8.6	0.14	3.0
Sulfur Dioxide	0.93	0.6	0.01	0.2
Carbon Monoxide	3.03	1.9	0.03	0.7
Particulate Matter	1.0	0.6	0.01	0.2

a. Emissions based on a 400 hp engine operating at an average load of 70 percent for 32 hours per well (25% of workover rig operating time).

b. Emission factors are from the EPA publication - Compilation of Air Pollutant Emission Factors (AP-42).

c. 1 lb = 453.6 grams

Barbara County, is currently classified as a non-attainment area for ozone (O<sub>3</sub>). The South Coast Region is in attainment with National Ambient Air Quality Standards (NAAQS) for all other criteria pollutants.

The air quality monitoring network in the project region consists of six monitoring stations located in Ventura and Santa Barbara Counties (Exhibit E). The sites are located at: (1) Ventura Main Street, 14 miles southeast of the project site; (2) Emma Wood State Beach, 13 miles southeast of the project site; (3) West Casitas Pass, 4 1/2 miles northeast of the project site; (4) Chevron Carpenteria, 4 1/2 miles northwest of the project site; (5) Santa Barbara Canon Perdido Street, 14 miles northwest of the project site; and, (6) Goleta, 22 miles northwest of the project site. Maximum concentrations of pollutants measured in the project region at these monitoring stations are presented in Table 2. For comparison, NAAQS and California Ambient Air Quality Standards (CAAQS) are also shown in Table 2.

During the remedial and workover project, a 350 horsepower Detroit Diesel mobile workover rig would be used. Work on each of the 22 wells will take approximately 10 days. Work will be conducted during daylight hours only (10 hours per day) except when the hole is open (about 2 days per well) when work will continue 24 hours per day. Thus, each well will require about 128 rig hours. Air pollutant emissions estimates are shown in Table 3 and 3a.

Produced fluids would be commingled with existing Bush Oil Company production. Fluids would be processed using existing treating facilities; no new facilities would be added. Produced crude oil and natural gas would be transported via existing pipeline distribution systems.

The principal sources of possible emission increases during the enhanced production phase would be hydrocarbon tankage and equipment seals. Fugitive hydrocarbon emissions from tankage are not anticipated because all hydrocarbon vapors from tankage are collected and used onsite as fuel or sold offsite. Existing fugitive hydrocarbon emissions from equipment seals would not change as a result of additional production. In summary, enhanced production from the AH to AZ sands is not expected to increase existing emissions from production facilities, and therefore would not result in any significant impacts on air quality.

The Mobil facility is permitted to handle 1.5 million barrels of oil per month and they are currently handling approximately 422,000 barrels per month. They will not need to modify their current Ventura County APCD permit in order to process this additional oil.

The proposed workover will involve deepening the wells within the known

reservoir. No new zones will be penetrated. since no H<sub>2</sub>S has been detected in any wells currently producing on the Island, Bush does not expect to encounter any in these wells.

Vehicular traffic associated with the proposed workovers will be the equivalent of normal well maintenance activity and will therefore no result in any appreciable increase in emissions. A single crew truck carrying a four-man crew will travel to and from the Island three times a day.

The rig used for the workover project is exempt from permit requirements of the Ventura County Air Pollution Control District under its Rule 23.D.5. Notwithstanding the exemption, the project would not be considered a major source because emissions of each pollutant are less than 25 tons per year.

C. WATER

Rincon Island has an external berm height of 30 feet above sea level on the southerly or weather side of the Island. The other exterior sides of the Island are of lesser height since wave action is less likely to broach these walls. On the Island is a spill containment system of containment walls around the tank battery and well cellar areas with drainage and return channels and berms to direct any spill back to the well cellar.

Surface water runoff on Rincon Island is contained and handled by an existing drainage system. The drainage system is connected to existing tankage where runoff water can be accumulated. The fluid is treated to separate out any oil, and the water is then disposed of through a system of existing injection wells. The proposed project would not alter this system or cause an increase in the rate and amount of surface water runoff. It is possible that ground water aquifers may be penetrated during the well deepening operations. Contamination of ground water would be prevented as described in Section 7.

The Island is visited regularly by a State Lands Commission inspector and all equipment is inspected for proper operating condition.

Produced water would be reinjected into a producing formation, rather than discharged to the ocean, through a system of existing injection wells. This system had a historic peak injection rate of 8,300 BWPD. The rate of reinjection for the proposed project is not known at this time; however, it would be significantly less than the historic peak injection rate.

Fresh water requirements for the project would be minimal and would be met through the existing municipal system. The only fresh water requirement

would be that for personal use of the work crew and sanitation since cement operations would use seawater and mud mixtures would use produced water.

In summary, implementation of the proposed project would not result in significant effects on hydrologic resources. There would be no alteration in the drainage pattern, quantity, or quality of existing surface water flow. No significant impacts on ground water aquifers are anticipated. The proposed project would not result in a significant long-term increase in fresh water use. The project activities would not involve discharges to the ocean or cause changes in the existing character of marine waters. There would be no increase in risk of exposure to potential hydrologic hazards.

#### D. PLANT LIFE

Commercial kelp beds grow along the coast between Ventura and Santa Barbara principally on rocky bottom areas. The beds are harvested to a maximum depth of 4 feet (Dames and Moore, 1988). The project is not expected to have any effect on these kelp beds nor on their commercial exploitation.

Vegetation around the project well on the Bush property ashore has been cleared. Vegetation on Rincon Island primarily consists of introduced palm trees, planted to shield onshore views of oil production facilities. No native vegetation types occur. The palms are situated on the perimeter of the island in planters and do not occur within the existing production facilities area. Because no new facilities would be constructed, no existing plant life would be disturbed or eliminated if the proposed project were implemented. No new species of plants would be introduced during the project, and the existing limited plant diversity would remain unchanged.

#### E. ANIMAL LIFE

There is no native terrestrial wildlife habitat present on Rincon Island. Consequently no use is made of the island by native terrestrial amphibian, reptile, or mammal species. The island may be used by terrestrial and marine birds for resting. Shorebirds do occur there regularly, primarily during resting periods. Some foraging by these shorebirds may occur on the rocky, outer portions of the island. No breeding by any native terrestrial wildlife species is expected to occur on the island.

Construction of Rincon Island resulted in the creation of a hard substrate intertidal and subtidal habitat in a marine environment predominantly characterized by soft bottom subtidal habitat. As a consequence, there was an associated increase in the abundance and diversity of marine biota at and

around the island as species colonized the newly available substrate. This colonization is commonly observed at man-made structures in the marine environment.

The northern Channel Islands region of the Southern California Bight is located at a major transition point between the biogeographical coastal provinces, the temperate Oregonian and the subtropical Californian or San Diegan. The biota of this transition zone include species from the northern subarctic and Southern Equatorial water masses, along with endemic and elements from the Central Pacific water mass. Species diversity in this area is higher than in areas to the north or south. The Santa Barbara Channel serves as a funnel for migrating birds, especially shearwaters and brant, as well as a migratory route for the gray whales (Dames and Moore, 1988).

Sensitive species that may potentially occur near the island include the state and federal listed endangered California brown pelican (*Pelecanus occidentalis californicus*) and the protected marine mammals-California sea lion (*Zapophus californianus*) and bottlenose dolphin (*Tursiops truncatus*). California brown pelicans may occasionally feed in the waters adjacent to the island but are not expected to occur regularly near the island. Small numbers of California sea lions may occasionally occur near the island, but if present, these animals have become acclimated to the oil production activities occurring on the island. Since the 1983 El Nino Southern Oscillation event, between 30 and 50 bottlenose dolphins have been recorded during each month on a yearly basis in the small bay immediately north of Rincon Island. These dolphins apparently feed in nearshore waters and are not expected to occur regularly near the island.

Neither the proposed remedial workover nor the following production operations are expected to have significant impacts on the biological resources of the project area. No new animal species would be introduced. Existing marine habitats currently used by wildlife would not be disturbed since the proposed project would involve activities on the industrialized portions of the island and the property ashore only.

#### F. NOISE

Ambient noise measurements were taken within a 2.5 mile radius of Rincon Island. The results of the measurements are presented in Table 4, and the locations of the measurement sites are shown on Exhibit F. Ambient noise within the 2.5 mile radius is primarily composed of truck and automobile traffic from U.S. Highway 101 and ocean surf. Additional noise is generated

**TABLE 1**  
**AMBIENT NOISE MEASUREMENTS**

Location	Representative Noise Levels •		
	Morning	Afternoon	Evening N. The
Site 1 - Rincon Point	71	73	66
Site 2 - Punta Gorda	64	66	64
Site 3 - Punta Gorda	72	71	73
Site 4 - Off Piers	73	72	72

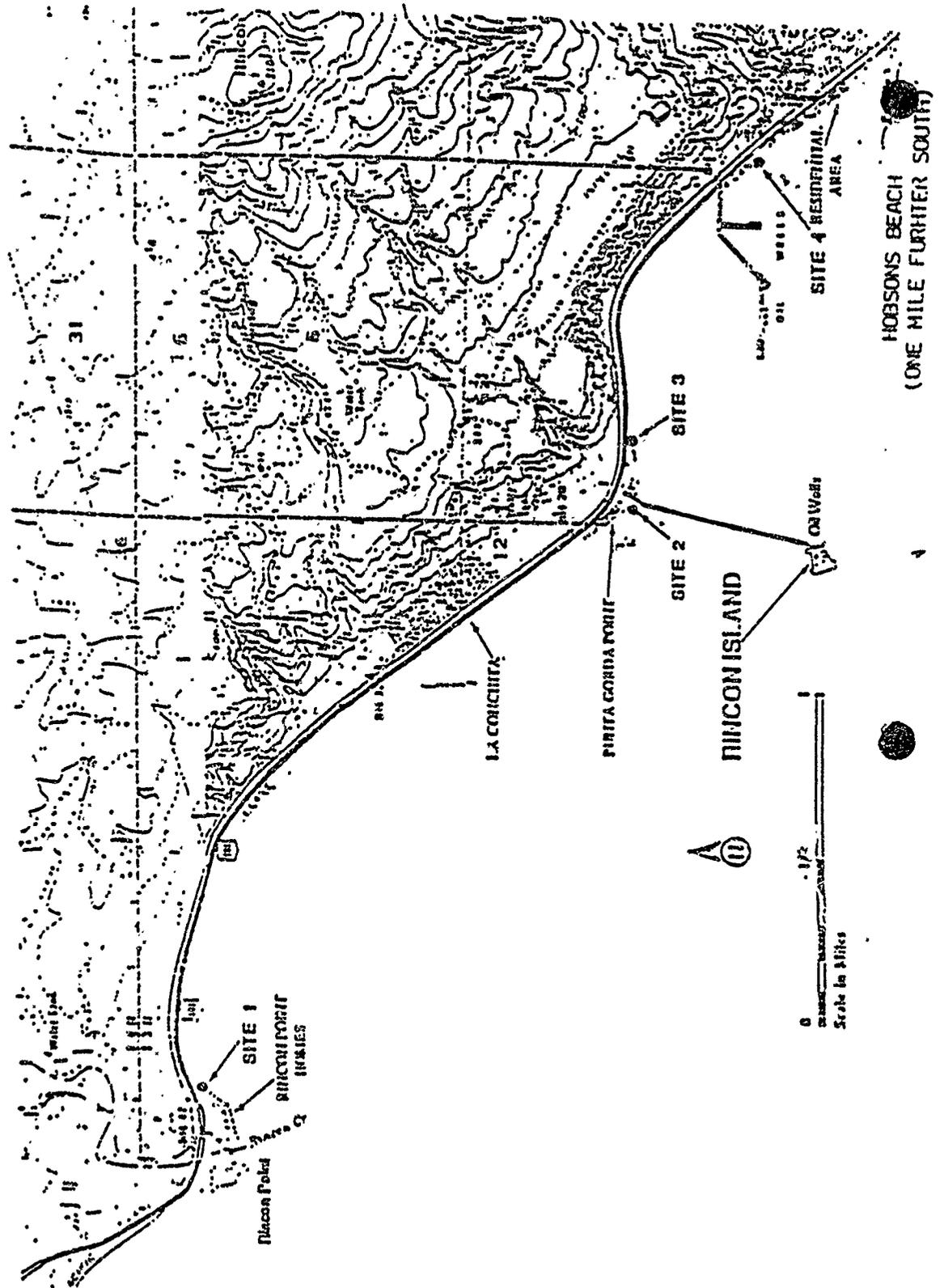
Typical noise ranges during each site sampling period are as follows:

Location	Observed Noise Level Range •		
	Morning	Afternoon	Evening Night
Site 1 - Rincon Point	63-77	61-77	62-76
Site 2 - Punta Gorda	53-69	55-71	61-76
Site 3 - Punta Gorda	60-76	58-74	62-76
Site 4 - Off Piers	60-79	59-75	60-76

\* measurements given in db A

CALENDAR PAGE	425
MINUTE PAGE	2743

EXHIBIT F  
 LOCATIONS OF NOISE SURVEY SITES  
 TENNACO - RINCON ISLAND



CALENDAR PAGE	400
MINUTE PAGE	2749

by passing trains and occasional air traffic. The nearest noise sensitive receptors to Rincon Island and the project area are:

- Rincon Point Homes - 2.5 miles N.W. of Rincon Island;
- La Conchita - 1.0 miles N.N.W. of Rincon Island;
- Punta Gorda Point (Mussel Shoals) - 0.5 miles N. of Rincon Island;
- Seacliff Residential - 1.5 miles E.S.E. of Rincon Island, and;
- Campground (Hobson's Beach) - 2.0 miles E.S.E. of Rincon Island.

The receptor locations are also shown on Exhibit F.

During the remedial and workover project a 350 horsepower Detroit Diesel rig would be used, and some increase in traffic would occur. Any noise levels generated by the rig are expected to be attenuated substantially due to the distance between the project area and the receptors. Any sound generated by the project activities would not be perceived above existing ambient traffic, train, and surf noise levels, and there would therefore not be any significant noise effect. Since no new equipment is required for the production facilities, no incremental noise increases are expected.

#### G. LIGHT AND GLARE

Existing sources of light and glare in the project area are for the most part minor and consist of lights on Highway U.S. 101, street and residence lights in La Conchita, the beach residences and the hotel at Punta Gorda, the residences at the Seacliff beach community, and lighting in the project area on Rincon Island, the Mobil-Ferguson Pier, and the oil company areas along old Highway 1 north of Highway 101.

During the project nighttime operations lighting would be necessary around the well pads. Other sources of light would be from trucks delivering emergency supplies at night and crew vehicles. The nearest light sensitive receptors would be the residences and hotel located at Punta Gorda at least 3,000 feet from the project site. The substantial distance of light sensitive receptors to the project area and the plan to conduct project work in daylight hours except during critical open-hole operations are expected to result in only insignificant impacts from nighttime lighting as described in Section 7. During production, after the remedial work, the amount of lighting would not increase from current levels.

**TABLE 5**  
**VENTURA COUNTY POPULATION AND HOUSING ESTIMATES**  
**JANUARY 1, 1990**

CITY	POPULATION		HOUSING UNITS				PERSONS PER HOUSEHOLD	
	TOTAL	HOUSEHOLD	TOTAL	SINGLE FAMILY	MULTIFAMILY	MOBILE HOME	OCCTD	%
CAMARILLO	8043	4044	899	899	0	0	1803	2.45
FILMORE	1131	1120	221	146	237	483	3456	1.87
MOJAVE	2659	2655	4	834	236	885	7653	1.73
CASTROVILLE	2948	2669	319	319	103	815	3042	2.06
GRANDE	12908	12856	1532	2170	2665	10128	32117	4.10
PARADISE	31242	19100	1763	2398	2117	1005	78	6879
SAN JUAN BAUTISTA	22254	21627	1007	20287	4137	8475	2232	36308
SANTA PAULA	24016	23777	339	4417	1042	1170	735	7748
SINE VALLEY	101573	101333	131	24331	2115	1109	720	30603
UNION CITY	106381	104783	1888	24775	1577	6676	832	35917
TOTAL INCORPORATED	570345	563043	7502	118689	15291	36426	8033	188857
UNINCORPORATED	87708	94023	3676	24201	823	2584	1670	20733
COUNTY TOTAL	658053	657066	11178	142890	16114	39010	9703	219590

CA. DEPARTMENT OF FINANCE  
DEMOGRAPHIC RESEARCH UNIT  
PRINTED 01/26/90

NOTE: Received from Ventura  
County Planning Dept.  
May, 1990

CALENDAR PAGE 401  
MINUTE PAGE 275

**TABLE 6  
COUNTY OF VENTURA  
1980 - 2010 POPULATION FORECAST**

Growth Area/ Nongrowth Area*	Census 4/1/80	1985	1990	1995	2000	2005**	2010**
Camarillo GA	43,722	52,590	51,550	58,159	74,320	79,240	85,222
Camarillo NGA	3,668	3,680	3,039	3,510	6,140	6,640	7,100
Fillmore GA	9,604	10,300	12,220	13,310	16,250	15,220	15,170
Fillmore NGA	2,182	2,240	2,240	2,220	2,220	2,220	2,220
Las Posas NGA	1,312	2,020	2,120	2,240	2,340	2,440	2,520
Moortpark GA	8,034	14,250	22,020	29,590	35,740	41,590	47,020
Moortpark NGA	670	690	750	780	810	820	860
North Half NGA	437	540	570	620	650	690	720
Oak Park GA	3,617	4,330	12,120	17,150	16,740	15,220	15,720
Oak Park NGA	222	200	320	340	350	370	390
Ojai GA	8,412	9,970	9,460	9,550	9,620	9,700	9,760
Ojai NGA	2,298	2,540	2,540	2,520	2,700	2,780	2,860
Oxnard GA	122,053	127,700	141,000	159,000	150,000	198,000	217,300
Oxnard NGA	4,997	5,000	5,150	5,100	5,100	5,090	5,170
Pico GA	1,268	1,400	1,910	1,980	2,150	2,300	2,440
Pico NGA	196	200	240	260	230	300	320
Port Ewinene GA	13,207	20,000	21,570	22,310	24,050	25,220	26,220
Santa Paula GA	20,889	22,220	24,500	25,000	27,500	29,000	30,500
Santa Paula NGA	2,958	3,020	3,050	3,050	3,220	3,050	3,050
Simi Valley GA	80,294	90,640	103,220	112,520	122,170	129,220	136,920
Simi Valley NGA	1,037	1,400	1,800	1,320	2,040	2,250	2,470
Thousand Oaks GA	91,962	101,910	109,300	113,300	125,220	122,500	122,100
Thousand Oaks NGA	1,070	1,220	1,220	1,260	1,450	1,540	1,520
Ventura GA	33,209	30,100	33,000	30,000	32,500	32,940	32,150
Ventura NGA	982	1,220	1,220	1,220	1,240	1,200	1,260
Vca. Riv. GA	12,249	12,500	12,000	14,260	14,510	15,100	15,200
Vca. Riv. NGA	1,509	1,510	1,510	1,520	1,560	1,590	1,720
<b>TOTAL COUNTY</b>	<b>529,174</b>	<b>584,360</b>	<b>659,250</b>	<b>722,920</b>	<b>787,770</b>	<b>841,730</b>	<b>892,770</b>

\*See attached map. Growth Areas are generally larger than incorporated areas for census.  
 \*\*To be used for guideline purposes only.  
 Approved by Board of Supervisors on 5/7/81.

NOTE: Except for 1980, all forecasts are January 1 forecasts.

176/1

NOTE: Received from Ventura  
 County Planning Dept.  
 May, 1990

CALENDAR PAGE 473  
 MINUTE PAGE 275

TABLE 7  
 COUNTY OF VENTURA  
 1980 - 2010 DWELLING UNIT FORECAST

Growth Area/ Nongrowth Area <sup>v</sup>	Census		1985	1990	1995	2000	2005 <sup>w</sup>	2010 <sup>w</sup>
	4/1/80	1985						
Camarillo GA	16,304	19,039	22,144	25,314	29,484	31,434	35,454	
Camarillo NGA	1,043	1,043	1,398	1,741	1,973	2,206	2,438	
Fillmore GA	1,055	3,129	4,043	4,544	5,040	5,326	6,032	
Fillmore NGA	729	760	773	797	820	843	866	
Las Posas NGA	354	351	608	666	722	781	838	
Moorpark GA	2,476	4,361	7,379	9,320	12,221	14,722	17,124	
Moorpark NGA	267	259	304	322	343	353	377	
North Half NGA	322	340	350	380	399	413	437	
Oak Park GA	1,078	1,447	4,091	5,598	5,598	5,598	5,598	
Oak Park NGA	76	95	110	120	130	140	150	
Ojai GA	1,315	1,502	1,797	1,912	4,027	4,127	4,227	
Ojai NGA	855	929	966	1,023	1,076	1,125	1,157	
Oxnard GA	39,813	42,029	43,980	55,986	65,217	72,931	82,120	
Oxnard NGA	1,237	1,293	1,398	1,454	1,509	1,563	1,620	
Pico GA	380	388	525	603	677	751	825	
Pico NGA	64	64	82	91	100	110	113	
Port Huenehue GA	6,942	7,251	8,201	8,580	9,559	10,323	11,013	
Santa Paula GA	7,223	7,645	8,750	9,559	10,377	11,197	12,002	
Santa Paula NGA	865	882	934	968	1,002	1,026	1,071	
Simi Valley GA	22,534	25,423	31,761	35,573	39,988	44,102	48,216	
Simi Valley NGA	447	561	663	774	883	992	1,101	
Thousand Oaks GA	31,302	35,019	39,400	43,430	47,900	51,400	55,300	
Thousand Oaks NGA	607	653	702	769	796	843	891	
Ventura GA	13,311	16,134	18,430	42,357	47,435	50,342	54,249	
Ventura NGA	627	674	698	722	722	767	791	
Vta. Riv. GA	4,915	5,074	5,467	5,742	6,017	6,292	6,568	
Vta. Riv. NGA	575	601	625	649	673	701	725	
<b>TOTAL COUNTY</b>	<b>153,354</b>	<b>200,342</b>	<b>222,822</b>	<b>243,905</b>	<b>294,374</b>	<b>322,172</b>	<b>349,143</b>	

<sup>v</sup>See attached map. Growth Areas are generally larger than incorporated areas for cities.  
<sup>w</sup>To be used for guideline purposes only.

Approved by Board of Supervisors on 5/7/85.

NOTE: Except for 1980, all forecasts are January 1 forecasts.

L76/2

NOTE: Received from Ventura  
 County Planning Dept.  
 May, 1990

CALENDAR PAGE	435
MINUTE PAGE	2753

EXHIBIT G  
 VENTURA COUNTY  
 POPULATION GROWTH AREA

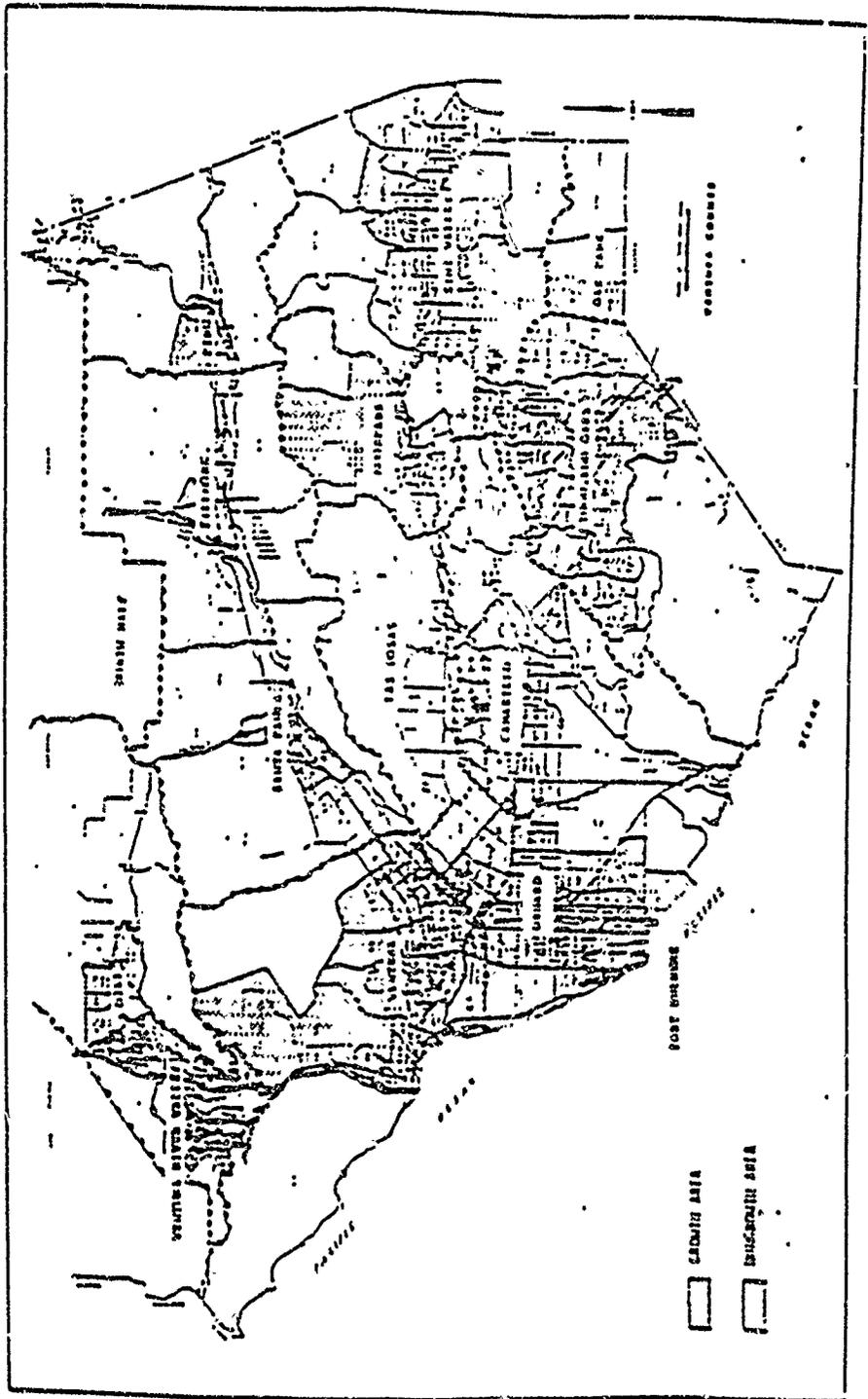
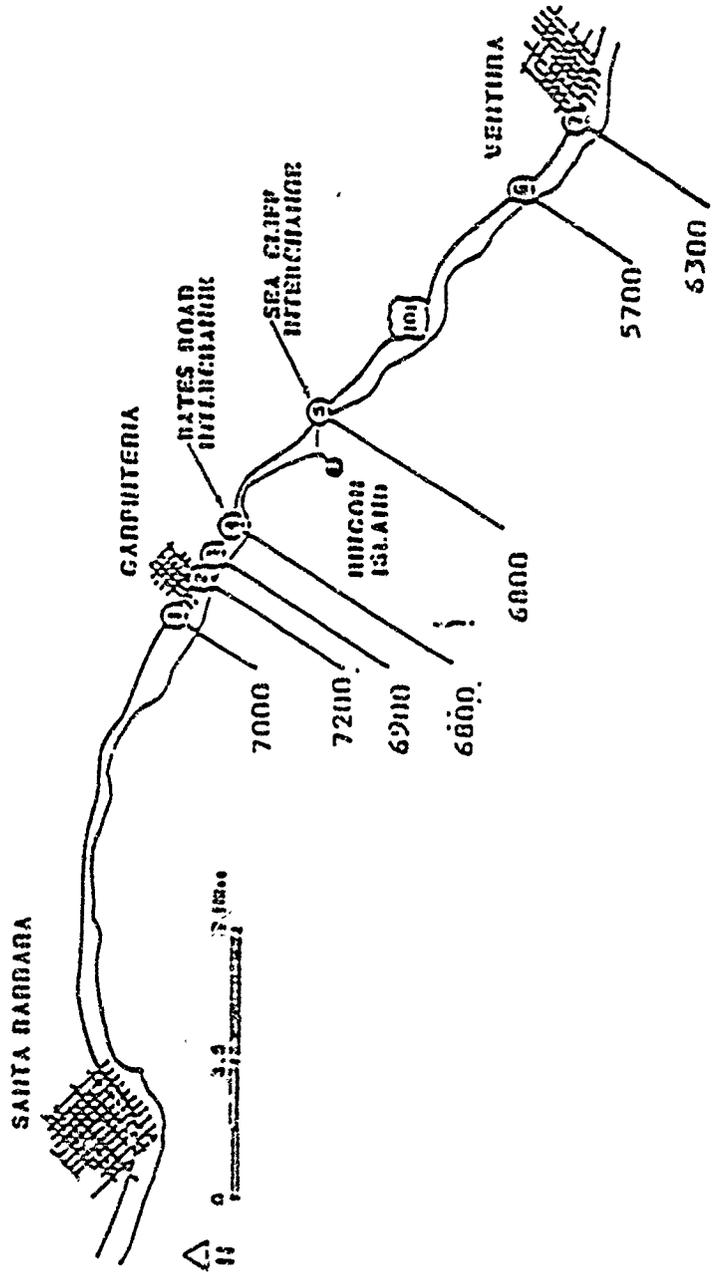


EXHIBIT II  
PEAK HOUR TRAFFIC VOLUMES  
1980



CALENDAR PAGE	455
MINUTE PAGE	275

TABLE 9  
 SANTA BARBARA COUNTY  
 POPULATION, EMPLOYMENT, AND HOUSING FORECASTS

<u>Population:</u>			
	1990	-	
	1995	-	350,900
	2000	-	378,500
	2005	-	404,200
<u>Housing Units:</u>			
	1990	-	
	1995	-	134,269
	2000	-	144,548
	2005	-	154,187
<u>Employment:</u>			
	1988:		
	Labor Force		178,700
	Employment		170,800
	Unemployment Rate		4.4%
	Estimated Employment in 2005		211,000

Source: "Forecast 89"  
 Santa Barbara County-Cities  
 Area Planning Council, August 1989

**TABLE 10**  
**1960 TRAFFIC COUNTS**

<u>LOCATION</u>	<u>AVERAGE DAILY TRAFFIC</u> <u>PEAK HOUR</u>	<u>TRAFFIC</u> <u>PEAK MONTH</u>
1. Jct. Rte. 244 Interchange	7,000	68,000
2. El Rincon Interchange	7,200	70,000
3. Jct. Rte. 150 Interchange	6,900	66,000
4. Bates Road Interchange	6,800	65,000
5. S&4 Cliff Interchange	6,800	55,000
6. Solimar Interchange	5,700	55,000
7. Jct. Rte. 33 Interchange	6,300	64,000

AA SOURCE: Caltrans office, Los Angeles  
Caltrans office, San Luis Obispo

TABLE 8  
VENTURA COUNTY  
ESTIMATED TOTAL EMPLOYMENT  
UNIT - JOBS

AREA	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	2000	2005	2010
Cesarillo CA	15,654	16,651	16,841	17,429	17,994	18,564	19,131	19,699	20,121	20,513	20,964	21,384	21,808	21,519	25,442	20,014
Cesarillo MCA	1,005	1,017	1,030	1,097	1,164	1,230	1,297	1,364	1,383	1,402	1,421	1,440	1,459	1,474	1,527	1,544
Fillmore CA	2,311	2,310	2,359	2,456	2,547	2,635	2,724	2,813	2,863	2,912	2,962	3,011	3,041	3,137	3,348	3,402
Fillmore MCA	437	442	448	466	484	502	520	538	537	537	536	536	533	550	402	450
Las Posas MCA	811	822	832	845	857	876	892	895	904	913	923	932	941	1,006	1,074	1,139
Northpark CA	3,050	3,098	3,137	3,430	3,724	4,017	4,311	4,604	4,718	4,892	5,037	5,182	5,326	5,861	4,015	5,039
Northpark MCA	0	0	0	35	70	104	139	171	212	251	289	326	367	567	772	1,030
Oak Park CA	48	48	49	92	135	177	220	263	315	366	418	459	521	670	812	1,020
Oak Park MCA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ojai CA	3,195	3,225	3,245	3,293	3,324	3,350	3,378	3,404	3,412	3,419	3,425	3,432	3,438	3,467	3,492	3,513
Ojai MCA	148	150	152	155	158	160	163	166	169	172	174	177	180	193	207	221
Oxnard CA	47,332	47,929	48,526	50,311	52,156	53,979	55,785	57,600	59,436	61,272	63,108	64,911	65,789	77,100	89,100	101,447
Oxnard MCA	7,701	8,000	8,100	8,292	8,485	8,677	8,870	9,052	9,955	10,118	10,281	10,445	9,792	10,408	11,351	13,078
Piru CA	191	194	195	207	219	230	242	253	258	263	267	272	277	280	299	308
Piru MCA	130	162	164	170	176	182	188	194	197	201	204	208	211	234	240	245
Port Hueme CA	12,280	12,615	12,400	12,724	12,848	12,971	13,095	13,219	13,312	13,405	13,499	13,593	13,685	13,919	14,391	14,554
Santa Paula CA	6,531	6,614	6,696	6,827	6,958	7,086	7,219	7,350	7,440	7,530	7,620	7,710	7,800	8,250	8,700	9,015
Santa Paula MCA	411	419	452	462	468	475	481	488	500	512	525	537	540	580	641	681
Sinal Valley CA	15,913	16,514	16,315	17,181	18,047	18,912	19,778	20,411	21,172	22,300	23,127	23,955	24,783	30,293	34,809	40,069
Sinal Valley MCA	2,609	2,641	2,674	2,731	2,798	2,814	2,903	2,930	3,023	3,084	3,150	3,213	3,274	3,528	3,774	3,944
Thousand Oaks CA	29,821	30,197	30,573	31,712	32,851	33,989	35,128	36,267	37,531	38,795	40,060	41,324	42,508	48,070	54,365	60,267
Thousand Oaks MCA	95	95	97	100	120	131	143	154	165	136	127	118	109	116	123	132
Ventura (OJ) CA	5,466	5,535	5,604	5,619	5,634	5,650	5,665	5,680	5,790	5,900	6,011	6,121	6,231	6,658	7,014	7,252
Ventura (PO) CA	29,287	29,637	30,026	30,374	30,723	31,071	31,420	31,768	32,553	33,338	34,122	34,907	35,492	40,227	43,354	46,785
Ventura (SP) CA	12,038	12,190	12,342	12,861	13,380	13,898	14,417	14,936	15,803	16,670	17,538	18,405	19,272	23,594	28,171	32,291
Ventura (OJ) MCA	51	51	52	52	53	53	54	54	54	55	55	56	56	70	73	80
Ventura (PO) MCA	619	425	430	436	442	449	455	461	467	473	480	486	492	522	551	584
Ventura (SP) MCA	0	0	0	0	1	1	2	2	2	3	3	4	4	5	7	10
Ventura River CA	1,185	1,200	1,215	1,252	1,289	1,326	1,363	1,400	1,436	1,472	1,508	1,544	1,500	1,762	1,963	2,090
Ventura River MCA	62	63	64	64	64	64	64	64	64	64	65	65	65	83	85	92
North Half	110	112	113	115	118	120	123	125	127	129	132	134	136	156	173	200
Ojai Vly Airshed	10,977	10,224	10,352	10,435	10,519	10,603	10,687	10,770	10,925	11,082	11,238	11,395	11,550	12,000	12,834	13,256
Oxnard Pin Airshed	189,148	191,534	193,920	200,278	206,639	212,989	219,350	225,707	233,177	239,918	246,651	253,405	259,329	295,000	329,295	366,365
ADSP Ping Area	199,243	201,758	204,272	210,713	217,153	223,592	230,037	236,477	244,102	251,000	257,899	264,800	270,879	307,672	342,625	379,621
COUNTY TOTAL	199,385	201,870	204,389	210,828	217,376	223,712	230,160	236,602	244,229	251,129	258,031	264,934	271,015	307,828	342,768	379,921

NOTE: Received from Ventura County Planning Dept., May 31, 1990

CALENDAR PAGE 45  
MINUTE PAGE 275

H. LAND USE

Rincon Island was built specifically for the purpose of petroleum production. The proposed project would therefore be consistent with this existing, approved land use. The proposed project would also be compatible with the land uses near the Bush Oil Company yard which include other petroleum production operations. The production lifetime of 10 years following project work is not expected to significantly affect future land use options at the project location.

I. NATURAL RESOURCES

The project is expected to yield approximately 4.1 million barrels of oil and 818 million cubic feet of natural gas as shown in Table 1 and discussed in paragraph 2. The diesel powered workover rig will use fuel during the project.

J. RISK OF UPSET

Although very unlikely, the possibility of an accidental release of drilling mud or crude oil exists. The quantity of mud that could be released would be the amount contained within the well bore of approximately 100-150 barrels. The amount of crude oil that could be released would depend on the nature of the accident; however, all the project workover wells are non-free-flowing wells. The probability of an oil spill is therefore very low. The measures used to mitigate an accidental release of mud or oil are described in Section 7.

K. POPULATION AND HOUSING

Population centers in Ventura County include the cities of Oxnard, Ventura, and Port Hueneme. Ventura and Port Hueneme serve as major offshore and onshore petroleum industry centers. Port Hueneme functions as the principal supply port for offshore Santa Barbara and Ventura counties. Petroleum-related services in Ventura include oil field maintenance, oil well completion and pumping equipment, and oil well servicing. Exploration and production offices of several major oil companies are also located in Ventura. Oxnard, because of its substantial population base, provides a labor pool for petroleum-related industries in Ventura County.

Principal population centers in Santa Barbara County include the cities of Carpinteria, Guadalupe, Lompoc, Santa Barbara, and Santa Maria and the unincorporated Goleta Valley. Within the southern portion of Santa Barbara County, several oil companies, including Chevron, have had increased activities due to the construction of offshore platforms and onshore processing and terminal facilities. In northern Santa Barbara County, particularly near

Santa Maria, several companies operate oil field servicing and maintenance services for onshore petroleum production operations; little or none of their activity is related to offshore development.

Population, housing, and employment estimates for Ventura County vary considerably among various sources. Table 5 provides Ventura County Population and Housing Estimates dated January 1, 1990, from the California Department of Finance Demographic Research Unit. This source estimates total Ventura County housing units as 184, 227. Tables 6 and 7 provide population and dwelling unit forecasts as approved by the County Board of Supervisors in 1985 and provided by the County Planning Department in May 1990. Exhibit G, provided by the County Planning Department, illustrates growth and nongrowth areas within Ventura County. The Bush project is in a nongrowth area.

Table 8 provides estimates and forecasts of total employment in Ventura County. The total number of jobs is estimated as 236,602 for 1990. Unemployment among the labor force has been estimated roughly as 5 to 7 percent.

Table 9 provides forecasts of population, housing, and employment in Santa Barbara County (Santa Barbara County-Cities Area Planning Council, August, 1989). This document, Forecast 89, shows a 1990 Santa Barbara County population of 350,900.

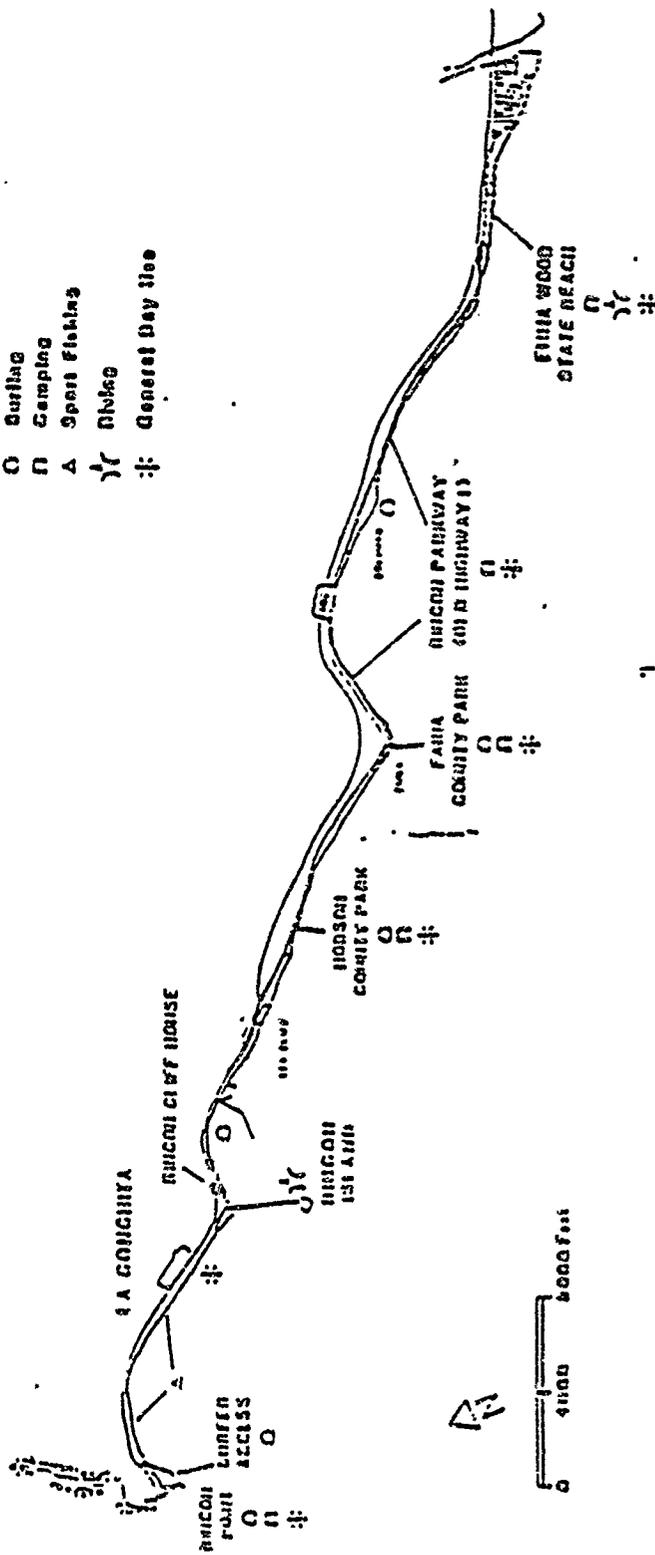
In contrast a recent Environmental Report for OCS lease P-0525, about 10 miles south of the project area, shows population projections for Ventura and Santa Barbara Counties as follows (Dames and Moore February 1988):

<u>YEAR</u>	<u>SANTA BARBARA CO.</u>	<u>VENTURA CO.</u>
1990	339,700	682,400
1995	358,300	762,500
2000	373,800	838,500

During the proposed project approximately 5 workers would be involved in daily activities. This work force would come from the Ventura-Ojai area or the Santa Barbara area. Because of the small size and local nature of the work force, implementation of the proposed project would not result in any population changes, nor would it affect housing demand in the region. The production following the project work would involve existing work forces; no new permanent jobs would be produced, and housing demand would not be affected.

**EXHIBIT I  
RECREATIONAL AREAS**

- LEGEND**
- O Outing
  - Camping
  - △ Sport Fishing
  - ∇ Bike
  - ⊞ General Day Use



NOTE: Channel Islands National Park is located approximately 20 to 30 miles offshore.

CALENDAR PAGE	462
MINUTE PAGE	276

## L. TRANSPORTATION CIRCULATION

U.S. Highway 101 1988 traffic volumes are presented in Table 10 for the project area. The annual average daily traffic is the total traffic volume for the year divided by 365 days. The peak month average daily traffic volume is the average daily traffic for the month of heaviest flow. Locations of the interchanges where the traffic volumes were measured are shown on Exhibit H.

The remedial and workover program would involve about two truck trips per week and 3 commuter vehicle trips per day. Access to the Bush Oil Company yard would be via the Seacliff offramp and the old Rincon Highway (Highway 1). All vehicles would use the trestle causeway from U.S. Highway 101 and Punta Gorda for access to or exit from Rincon Island. The maximum traffic generated would represent less than 0.05 percent of the existing 1988 daily traffic for a period of one year. The additional traffic generated during the proposed project would not have a significant impact on the existing transportation system. Since only the existing work force would be involved in production following workover, traffic levels in the area would not be increased, and the existing transportation system would not be affected. Measures to further reduce impact on the existing transportation system are described in Section 7.

## M. PUBLIC SERVICES AND UTILITIES

Fresh water would be needed for personnel use only; this water would be supplied via the existing municipal water system. The existing fire water systems would be used to provide sea water for cementing operations, and produced water would be used for mud make up.

The existing sanitation systems would be used during all phases of the proposed project. There would be a negligible increase in the level of electrical power requirements.

Approximately 700 cubic yards of cuttings and waste mud would be generated during the entire workover project. These wastes would be disposed of at an approved Class II-I or Class I dumpsite as a non-hazardous waste.

The work force during the project would be small and local in nature, and the enhanced production following workover would involve only the existing work forces. Existing facilities would provide sanitation, fresh water, mud make up water, and other requirements. Therefore, it is anticipated that no significant new demand for public services (e.g., fire and police protection, schools) or utilities would occur as a result of the proposed project.

N. ENERGY

During the workover project, fuel would be required for the 350 horsepower diesel workover rig and for the mudpump as well as some small increase in electricity for night lighting.

Since no new facilities would be constructed, no significant increase in energy use would occur. Because of the limited scope of the proposed project, substantial use of fuel or energy would not be required. The proposed project would not substantially increase demand on existing energy sources, nor would it require the development of new energy sources.

O. HUMAN HEALTH

In dealing with crude oil and gas, the potential always exists for releases, spill, and fires. The potential for such accidents from this proposed workover project is very low because all the wells are no-free-flowing wells. Thus, the possibilities of a blowout is almost non-existent. During the 17-year period from 1971 to 1987, there were only 20 blowouts during workover operations on federal offshore wells and only two of these resulted in the release of oil, one for 200 bbls and one for 64 bbls (MMS, 1989). A spill from a well, pipeline, or tank would be contained on the island. A spill in the well area should be contained by the well bay which can contain up to 2400 bbls. All except one of the tanks on the island are located in a 4800 bbl containment area that can contain the contents of the largest tank, which is 1500 bbl. There is a 2000 bbl produced water tank outside the tank area. A spill from this tank would drain to the well bay. In addition, the sides of the Island are generally elevated at least 10 feet above the level of the production facilities area. Where the Island opens toward the trestle, the ground surface slopes down to the production facilities area. Consequently, if an oil spill occurred that exceeded the capacity of individual containment structures, the Island itself would serve as a further containment structure. The Island (not counting the well bay area and tank area) can contain at least another 10,000 bbls. A spill contained on the island would not pose a hazard to human health.

Although it would be difficult to ignite any spilled oil on the island, it is possible. As a worst case fire, it was assumed that a spill occurs that covers the entire floor of the Island and then ignites. The Port of Los Angeles Hazard Footprint Calculation Program (Reese-Chambers Systems Consultants, 1990) was used to calculate the radiant heat hazard footprint from such a fire. The distance to 1600 Btu/sq ft/hr was determined to be 550 feet from the edge of the Island. People located outside this distance should be safe from such a fire. Thus, such a fire would not pose a hazard to members of the

public on shore.

The gas produced on the island contains extremely low levels of H<sub>2</sub>S and is thus classified as sweet gas. Such gas does not pose a toxic inhalation threat.

Thus, an accident on the Island should not pose a hazard to members of the public.

P. AESTHETICS

The project workover rig and other facilities would be situated within the depressed interior of Rincon Island and therefore partially hidden from view. Further visual screening would be provided by palm trees. The work on the Bush Oil Company Yard would appear to be similar to existing operations. Operation of the 98 foot high mobile workover rig, the mud tanks, and other facilities would cause a slight, temporary change in the visual environment of Rincon Island. Activities visible from shore during the workovers would appear similar to periodic maintenance operations which presently occur on the island. Given the temporary nature of the project and the visual similarity to present operations, no significant visual impact on offsite viewers is anticipated.

Q. RECREATION

Recreational areas in the vicinity of Rincon Island are shown on Exhibit I. Recreational activities include surfing, camping, sport fishing, diving, and general beach day use. The project is not expected to: (1) significantly increase the existing traffic conditions, (2) significantly decrease the offsite visual character of the Island, (3) significantly contribute to an increase in ambient noise levels, nor 4) import a significant number of new workers that would be using the available recreational facilities. Therefore, the proposed project is not expected to have a significant impact on existing recreation use in the area. The production operations following the project would require no new personnel, and no new equipment would be constructed. Therefore, no changes from existing conditions would be anticipated, and no impact is expected on existing recreational use in the area. Due to the separation of the project facilities from existing recreation facilities, it is not expected that recreation activities would have a significant impact on the project activities.

R. ARCHAEOLOGICAL AND HISTORICAL EFFECTS

No archaeological or historical resources are expected to be present in the project area. Therefore, no effects on such resources are anticipated during the project or during enhanced production following the project.

6. ANY ADVERSE EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

Potential environmental impacts of the proposed project are discussed in Section 5. These impacts would be localized, temporary, and of minor significance. Therefore, it is expected that no unavoidable significant adverse environmental impacts would result from implementation of the proposed project.

7. MITIGATING MEASURES WHICH HAVE BEEN INCORPORATED IN THE PROJECT

Where appropriate, mitigation measures are proposed to further reduce environmental impacts. The measures suggested for each environmental category are presented below:

A. EARTH

Bush would comply with applicable State Lands Commission, the California Division of Oil and Gas, and other appropriate regulations and requirements pertaining to well workovers, casing blowout prevention, and completion in order to minimize the potential for significant environmental impacts due to ground motion, fault rupture, subsidence and tsunamis.

B. AIR

No mitigation measures are proposed.

C. WATER

- i. Bush will comply with all rules and regulations pertaining to the prevention of degradation of water quality. By implementing casing and cementing operations, it is expected that no fluids would be lost to either ground or surface waters. Should an accidental leak or spill occur, the mitigation measures included in the project design and Bush's Oil Spill Contingency Plan would prevent or minimize contamination of ocean or ground water.
- ii. Cuttings and mud wastes would be disposed of at an approved Class II-1 or Class I dumpsite as a non-hazardous waste in accordance with appropriate regulatory requirements. No ocean discharge of muds or cuttings would be conducted.

D. PLANT LIFE

No mitigation measures are proposed.

B. ANIMAL LIFE

No mitigation measures are proposed.

F. NOISE

No mitigation measures are proposed.

G. LIGHTING AND GLARE

The illumination of the workover activities at night will be limited by appropriate shielding and directing techniques to reduce reflection and glare.

H. LAND USE

No mitigation measures are proposed.

I. NATURAL RESOURCES

No mitigation measures are proposed.

J. RISK OF UPSET

- i. The project operation would employ state-of-the-art blowout prevention technology and mud monitoring equipment.
- ii. All supervisory personnel will be blowout and well control certified.
- iii. The well bay on Rincon Island can contain 2400 barrels of fluid, mud, or oil.
- iv. Design of the Island is such that spilled mud drains into the well bay trough. There are cellars on either end of this trough from which the mud can be pumped to a steel separation tank to separate out any oily wastes. This mud can then be transferred to a vacuum truck for disposal at an approved dumpsite. Berms around the active areas of the Island would help contain any runoff.

- v. The well bay can contain 2400 bbl of fluid. The tank area is surrounded by a 10 foot high wall which can contain 4800 bbl of liquid. the floor of the island is generally 10 feet or more below the sides of the Island except along the wharf area. The road does slope down from the wharf toward the floor of the island. The island itself can contain at least another 10,000 bbl of oil over and above that of the well bay area.

Because the wells are non-free flowing, spills from blowouts are not expected (see discussion under "O - Human Health"). A spill from the largest tank within the tank area (1500 bbl) would easily be contained in the surrounding containment area. A spill from the 2,000 bbl tank outside the tank containment area would flow to the well bay area.

The only other type of spill possible would be from a pipeline leak or rupture. The largest line is a four inch diameter line that collects the oil from the individual lines from the wells. This line is equipped with automatic shutdowns. The entire line all the way to shore only contains less than 50 bbl of oil. The production rate would be less than 2000 bbl/day and hence a spill that would go undetected for an hour would only result in an 83 bbl spill, plus possibly the contents within the pipeline.

- vi. Bush has an Oil Spill Contingency Plan on file with the State Lands Commission which addresses specific spill control measures for Rincon Island. This plan would be implemented in the event of a spill. Bush is a member of Clean Seas, Inc.

K. POPULATION AND HOUSING

No mitigation measures are proposed.

L. TRANSPORTATION/CIRCULATION

- i. In order to reduce the impact to the existing transportation system, left hand turns across Highway 101 traffic would not be performed during the project. All vehicles requiring to go north after exiting Rincon Island would make a right turn onto U. S. Highway 101 and drive south, exiting at the Seacliff Interchange, located about 1-1/2 miles south of Rincon Island. The vehicles would then cross U. S. 101 and enter it via the northbound Seacliff onramp. All vehicles approaching Rincon Island from the south would exit U. S. 101 at the Bates Road interchange, located about 2.5 miles north of Rincon Island. The vehicles would then cross U. S. 101 and enter it via the southbound