



### 1997

## Summary of U.S. Occupational Injuries, Illnesses, and Fatalities in the Petroleum Industry

As Reported to the American Petroleum Institute

**Covering U.S. Petroleum and Petrochemical Operations of Reporting Companies for 1997** 

API Publication 2376 April 1998



One of the most significant long-term trends affecting the future vitality of the petroleum industry is the public's concerns about the environment. Recognizing this trend, API member companies have developed a positive, forward looking strategy called STEP: Strategies for Today's Environmental Partnership. This program aims to address public concerns by improving industry's environmental, health and safety performance; documenting performance improvements; and communicating them to the public. The foundation of STEP is the API Environmental Mission and Guiding Environmental Principles. API standards, by promoting the use of sound engineering and operational practices, are an important means of implementing API's STEP program.

#### API ENVIRONMENTAL MISSION AND GUIDING ENVIRONMENTAL PRINCIPLES

The members of the American Petroleum Institute are dedicated to continuous efforts to improve the compatibility of our operations with the environment while economically developing energy resources and supplying high quality products and services to consumers. The members recognize the importance of efficiently meeting society's needs and our responsibility to work with the public, the government, and others to develop and to use natural resources in an environmentally sound manner while protecting the health and safety of our employees and the public. To meet these responsibilities, API members pledge to manage our businesses according to these principles:

- To recognize and to respond to community concerns about our raw materials, products and operations.
- To operate our plants and facilities, and to handle our raw materials and products in a manner that protects the environment, and the safety and health of our employees and the public.
- To make safety, health and environmental considerations a priority in our planning, and our development of new products and processes.
- To advise promptly appropriate officials, employees, customers and the public of information on significant industry-related safety, health and environmental hazards, and to recommend protective measures.
- To counsel customers, transporters and others in the safe use, transportation and disposal of our raw materials, products and waste materials.
- To economically develop and produce natural resources and to conserve those resources by using energy efficiently.
- To extend knowledge by conducting our supporting research on the safety, health and environmental effects of our raw materials, products, processes and waste materials.
- To commit to reduce overall emissions and waste generation.
- To work with others to resolve problems created by handling and disposal of hazardous substances from our operations.
- To participate with government and others in creating responsible laws, regulations and standards to safeguard the community, workplace and environment.
- To promote these principles and practices by sharing experiences and offering assistance to
  others who produce, handle, use, transport or dispose of similar raw materials, petroleum
  products and wastes.



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Prepared for the Health and Environmental Affairs Department by the Finance, Accounting and Statistics Department

API Publication 2376 **April 1998** 

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Suggested revisions are invited and should be submitted to the director of the Health and Environmental Affairs Department, American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005.

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### REPORTED U.S. OCCUPATIONAL INJURIES, ILLNESSES, AND FATALITIES IN THE PETROLEUM INDUSTRY: 1997

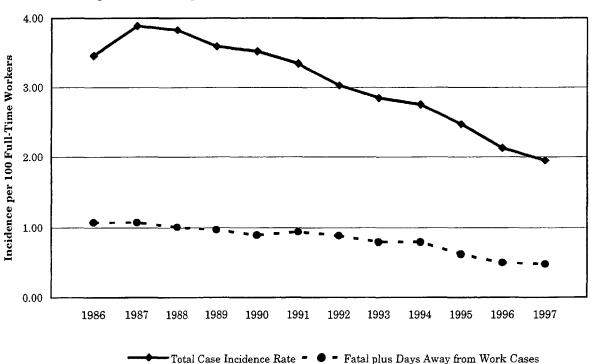
#### **SUMMARY**

This report is an aggregate of data submitted to the American Petroleum Institute (API) by 139 oil and gas companies (including 11 subsidiaries), employing 231,332 persons with a total work experience of 470 million hours during 1997. In 1996, 140 companies reported 228,209 employees with a work experience of 463 million hours. Individual company participation varies from year to year, yet 95 companies, representing 92 percent of the number of employees and 92 percent of the number of hours worked in 1997 had responded to this survey for the past 2 years.

In 1997, the *Total Case Incidence Rate* was 1.95, compared to 2.13 for 1996. This rate is the number of total recordable cases per 200,000 hours worked, or approximately the number of cases per 100 full-time workers per year.

The Fatal Plus Days Away From Work Incidence Rate for 1997 was .48 per 200,000 hours worked—or one case for every 208 employees, improving slightly from .50 for 1996—or one case for every 200 employees.

Safety among reporting companies continues to improve, as shown in the figure below. Since 1986, the *Total Case Incidence Rate* and *Fatal plus Days Away from Work Incidence Rate* have improved an average of 4.9 and 6.8 percent per year, respectively.



Reported U.S. Occupational Injuries, Illnesses, and Fatalities in the Petroleum Industry

#### The Survey

Company participation in the API annual statistical survey is voluntary. Participants were aske submit data according to the Bureau of Labor Statistics (BLS) Recordkeeping Guidelines for Occupations Injuries and Illnesses, September 1986 edition. Therefore, this report provides incirates per 200,000 hours worked on the same basis as those reported by BLS. It should be noted, i that this report covers company employees only; contract worker safety statistics are not included

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Significant differences exist among companies regarding return-to-work policies and practices, i.e returning injured or ill employees to restricted activity if they are unable to perform normal job ac and as part of their recoveries. Therefore, use of the Fatal plus Days Away From Work Incidence I alone to judge and compare company safety performance is not recommended.

The Bureau of Labor Statistics (BLS) publishes employment figures for different sectors of the petroleum industry. The following table shows the number of full-time employees given in this AP report and the comparative total employment figures published by BLS. These figures can be used calculate the API survey representation rate.

	E&P and Drilling	Refining and Gas Processing	Oil Pipelines	Total Marketing
BLS	320.1	96.8	14.3	835.4
API	41.4	47.8	11.8	60.8
API Representation Rate	13%	49%	83%	7%

Caution should be used, however, when interpreting these representation rates. As mentioned above, the API survey is limited to company employees while the BLS has a more inclusive definition of employment (the BLS includes contract workers).

Of the 139 companies that responded, 85 agreed to have their company data published individually. However, the total listed for each function is the total for all reporting companies—not just the sum of the individual companies appearing in that section of the report.

Additional copies of this report may be obtained by contacting the API Publications and Distribution Department at (202) 682-8375.

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Table 1

	· T .					T K	, —	<del>- 1</del>	RL	<u> </u>	· ·	1	<u> </u>	NGL	. 』 <del></del>		. T	-	<u> </u>	<del></del>	r	- <b>-</b> -	<u> </u>		1		11		<del>-</del>	<del>-</del>	=
	es	1				Days Days Away From	Work	0.00	7.95	7.94	7.78	7.26	62.68	6.46	11.46	15.41	8.36	3.73	9.00	10.69	19.24	2.88	12.01	0.00	0.00	51.92	45.73	1.03	11.21	2.04	
9	Incidence Rates	k		Fatal plus	Days Away	From Work	Cases	0.00	0.37	0.51	0.45	0.15	3.09	0.37	0.59	0.73	0.62	0.50	0.62	0.54	0.73	0.54	0.59	0.00	0.00	0.98	0.87	0.07	0.31	0.14	
	Inc	j					Total Cases	0.35	1.46	1.32	1.34	1.26	4.30	1.63	2.44	2.59	4.35	1.61	3.19	1.70	2.09	1.86	1.81	0.00	2.52	2.61	2.60	0.70	1.04	0.45	
		i		Non-Fatal	Cases	Without Lost	Workdays	2	97	211	310	31	2	151	587	142	595	129	998	112	58	20	190	0	3	26	29	35	31	83	
	nd Illness	ų			~_		Activity*	33	1,285	537	1,855	66	24	1,774	8,437	1,412	5,800	302	7,514	814	195	70	1,079	0	57	186	243	103	306	175	
2	of Injury and Illness	В	day Cases			<u> </u>	Work	0	1,114	2,207	3,321	283	466	1,213	5,390	2,285	2,329	548	5,162	1,264	820	48	2,132	0	0	1,215	1,215	69	624	651	
1	Extent and Outcome	J	Lost Workday	Cases	Involving	Days Away From	Work	0	52	142	194	9	23	69	277	108	172	71	351	63	31	6	103	0	0	23	23	5	17	46	
	Extent an	Э				Total Lost Workday	Cases*	1	107	155	263	18	27	155	558	242	616	106	964	88	31	11	130	0	5	35	40	12	27	09	
		p					Fatalities	0	0	0	0	0	0	0	1	0	1	2	8	1	0	0	-	0	0	0	0	0	0	0	
	ses	ບ					Total	3	204	366	573	49	32	306	1,146	384	1,212	237	1,833	201	68	31	321	0	8	61	69	47	58	143	
4	Recordable Cases	q					Illnesses	0	13	22	35	1	1	27	80	7	15	21	43	11	8	3	22	0	0	5	9	7	21	43	
	Rec	В			-		Injuries	3	191	344	538	48	31	279	1,066	377	1,197	216	1,790	190	81	28	299	0	8	99	64	40	37	100	
3						Hours Worked	(Thousands)	1,717	28,008	55,594	85,319	7,797	1,487	37,583	94,084	29,650	55,707	29,416	114,773	23,659	8,524	3,335	35,518	0	634	4,680	5,314	13,342	11,129	63,855	
2						Average Number of	Employees	911	13,323	26,471	40,705	3,788	743	17,925	44,054	14,131	32,256	14,423	60,810	11,777	3,825	1,596	17,198	0	301	1,892	2,193	909'9	5,556	31,754	
		_					Key	æ	q	ap		ပ	р	ø	J	pū	Ч	Чg		i	٠	ij		k	-	ĸ		m	u	0	
1						utustatus	Function	Exploration	Production	E&P-Not sep	E&P Subtotal	Gas Processing	Drilling	Petrochemical Mfg.	Refining	Marketing-Whole.	Marketing-Retail	Mrkt-Not sep <sup>2</sup>	Mrkt. Subtotal	Pipeline-Liquid	Pipeline-Gas	Pipeline-Not sep <sup>3</sup>	Pipeline Subtotal	Marine-Tanker	Marine-Inland	Marine-Not sep	Marine Subtotal	Research & Dev.	General Services	Admin., Eng., Other	

15.51

## Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

Table 2 -- Offshore Functions

		_	_	_		_	 _		·			_					_	•	_
				res	_			Davs Away Lost Work	Days Days	Away From	Work	400	0.00	27.83	00.0		9.13		15.51
		9	Incident	cidence Ka	¥		Fatal plus	Davs Away	From	Work	Cases		0.00	0.95	0.00		1.18	100	CO.T
			1.5		,						Total Cases		0.00	2.11	0.37		2.12	9 04	£0.7
					-		Non-Fatal		Without	Lost	Workdays		0	17	1		23	41	-
			and Illness		ш			Involving Number of Number of	Days of	Restricted	Activity*	Γ	0	281	0		79	360	
		5	Extent and Outcome of Injury and Illness		29 ( 29 (	Lost Workday Cases		Number of	Total Lost Days Away Days Away Days of	From	Work	4	٥	645	٥		349	994	
			nd Outcome	ţ		Lost Worl	 Cases	Involving	Days Away		Work	•	0	22	0	!	45	67	
			Extent a	ď					Total Lost	_	Cases	_		32	٥	ŝ	80	90	
				Р	_					Potalities	rataittes	_		0	٥	<		0	
			ases	ပ						Total	1	0	, ;	48	-	5		131	
	4	Recordeble Conse	and dable	q						Illnesses	-	0		٠,		-		9	
		la de		В						Injuries	<u> </u>	0	76		,	80	۶	120	
	က							Hours	Worked	E	•	0	4 635	534		7,646	19 015	14,010	
	2							Average	Number of	Key' Employees	•	٥	2.165	254		3,690	g 109	2,400	
L										Key	,	g	p	70		abd	_		
	I									Function	Offshore Exploration	Complete Laborat auton	Offshore Production	Offshore Drilling	Combinations of	Above- Not sep <sup>6</sup>	Total Offshore		
ur	n Ir	nstitu	ite											-				3	

### Endnotes

- ' E&P data unable to be separated into Exploration or Production functions.
  - <sup>2</sup> Marketing data unable to be separated into Wholesale or Retail functions.
    - Pipeline data unable to be separated into Liquid or Gas functions.
      - ' Marine data unable to be separated into Tanker or Inland.
- Keyed to definitions outlined in the API Fire and Safety Data Systems User's Manual.
- $^{\circ}$  If functions cannot be separated as listed, indicate in the 'Key' column the functions for which data is provided on this line. For example, 'ab' (Exploration & Production - Not Separated). Includes restricted activity.

Column 6(j) = Column 4(c) x 200 Column 3 Column  $6(k) = (Column 5(d) + Column 5(f)) \times 200$ Column 3

Column 6(1) = Column  $5(g) \times 200$ Column 3

a · Exploration
b · Production
(ab) · Exploration & Production · Not Sep.
c · Gas Processing

d - Drilling
e - Petrochemical Manufacturing
f - Refining
g - Marketing - Wholesale

h · Marketing · Retail (gh) · Marketing · Not Sep. i · Pipeline · Liquid j · Pipeline · Gas

ot Sep. k - Mari id l - Mari (kl) - Mar

(ij) - Pipeline - Not Sep. k - Marine - Tanker l - Marine - Inland (kl) - Marine - Not Sep.

m · Research & Development n · General Services o · Admin, Engineering, & Other

		Reco	Recordable Cases	ses		Extent an	d Outcome	of Injury	Extent and Outcome of Injury and Illness			Incidence Rates	ates
							Lost Workday Cases	day Cases					
							Cases						
							Involving	Involving Number		Non-Fatal			-
							Days	of Days	of Days Number of Cases	Cases		Fatal plus	Fatal plus   Lost Work
Average	Hours					Total Lost	Away	Away	Away Days of	Without		Days Away	Days Away Days Days
Number of	Company Number of Worked in					Workday	From	From	Restricted	Lost	Total	From Work	Total From Work Away From
Employees	Imployees Thousands	Injuries	Injuries   Illnesses	Total	Fatalities	Cases	Work	Work	Activity	Activity Workdays Cases	Cases	Cases	Work

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	(ab),e,f,g,h,i,m,o	b,e,f,g,h,i,l,m,n,o	a,(ab),b,c,d,f,(gh),i,(kl),m,n,o	1.	(ab)	(ab),e,f,(gh),(ij),m,n,o	(ab), <sub>0</sub>		(ab),j	(ab),c,f,(gh),i,(kl),m,n,o	•=	•	b,f,g,h,i,(kl),n,o	·	ပ	a,b	•	a,b,c,d,f,g,h,i,m,n,o,	oʻnʻj	(ab),c,e,f,g,h,i,m,n,o	
8.73	6.67	10.46	4.27	0.31	9.15	6.32	16.70	0.00	18.27	1.50	0.00	0.00	6.48	121.26	250.00	38.66	5.14	0.44	15.48	5.09	0.00
0.48	0.23	0.51	0.23	0.15	0.81	0.71	0.75	0.00	0.71	0.03	0.00	0.00	0.17	6.07	11.11	0.24	0.57	0.05	1.79	0.28	0.00
1.95				0.46	0.81		0.99				0.00		1.06		11.11	0.95	2.00		5.36		0.79
2,318	29	534	90	2	0	172	4	8	52	18	0	0	88	82	0	က	က	56	5	102	2
21,609	443	7,169	393	0	0	355	0	0	118	317	0	0	1,380	208	0	0	61	929	106	836	0
20,526	200	2,346	434	2	34	1,366	569	0	721	163	0	0	1,144	519	45	162	18	53	56	913	0
1,114	7	114	23	1	က	152	12	0	28	က	0	0	30	56	7	1	2	က	ဗ	49	0
2,254	27	633	35	-	က	162	12	0	28	21	0	0	66	56	2	1	4	36	4	108	0
5	0	-	0	0	0	73	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
4,577	56	1,168	125	က	က	336	16	œ	80	33	0	0	187	108	2	4	7	92	6	211	7
285	0	21	14	0	0	29	1	0	5	0	0	0	29	15	0	0	-	9	0	11	0
4,292	56	1,147	111	က	က	277	15	<b>∞</b>	75	39	0	0	158	93	2	4	9	98	6	200	8
470,201	5,993	44,836	20,329	1,305	743	43,222	3,221	1,353	7,894	21,768	32	277	35,323	826	36	838	700	13,069	336	35,854	206
231,332	2,954	26,029	9,276	009	357	21,730	1,397	652	3,529	10,468	16	129	17,003	373	19	408	352	6,855	163	17,231	260
Total	11	13	14	17	19	24	27	29	31	32	33	38	41	43	57	58	9	65	74	06	91

# Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

a · Exploration
b · Production
(ab) · Exploration & Production · Not Sep.
c · Gas Processing

d. Drilling
e. Petrochemical Manufacturing
f. Refining
g. Marketing. Wholesale

h · Marketing · Retail (gh) · Marketing · Not Sep. i · Pipeline · Liquid j · Pipeline · Gas

(ij) · Pipeline · Not Sep. k · Marine · Tanker l · Marine · Inland (kl) · Marine · Not Sep.

m · Research & Development n · General Services o · Admin, Engineering, & Other

Days Away Days -- Days From Work | Away From Lost Work Work Incidence Rates Fatal plus Cases Total Cases Non-Fatal Workdays Without Cases Lost Extent and Outcome of Injury and Illness Restricted Number of Activity Days of Lost Workday Cases of Days Number Away From Work Involving Days Away From Cases Work Total Lost Workday Cases Fatalities Total Recordable Cases Illnesses Thousands Injuries Number of Worked in Hours Employees Average Company Ω

### All Functions

	oʻi,	a,b,c,d,e,f,g,i,m,o	(ab),e,f,(gh),i,(kl),o	(ab),b,c,f,g,(gh),h,(ij),m,o	i,o		f			i		i	(ab),e,f,g,i,o	į	į	b,o	r	р	·	(ab),d,e,f,g,h,(ij),(kl),m,o	f,g,h,i,n
8.73	13.19	5.18	3.04	12.03	0.00	9.36	20.69	22.69	5.57	0.00	0.00	0.00	3.71	0.00	0.00	0.00	0.00	9,450.00	0.00	7.56	6.95
0.48	2.20	0.12	0.21	0.55	00.0	0.54	0.62	0.56	0.21	00.0	00.0	00.0	0.18	00.0	00.0	0.00	00.0	50.00	0.00	0.45	0.40
1.95	4.40	0.95	1.33	1.68	5.13	1.76	4.26	1.34	0.64	0.00	3.77	0.00	1.89	0.00	1.45	0.00	0.00	50.00	0.00	1.83	66.0
2,318	1	91	152	132	0	6	18	7	7	0	1	0	36	0	1	0	0	0	0	202	28
21,609	0	1,027	1,979	554	14	0	788	194	5	0	22	0	1,051	0	0	0	0	0	0	1,847	0
20,526	9	965	629	1,696	0	69	199	203	56	0	0	0	147	0	0	0	0	189	0	1,602	331
1,114	1	23	43	77	0	4	2	5	1	0	0	0	7	0	0	0	0	-	0	96	19
2,254	1	98	124	105	-	4	22	ស	-	0	-	0	39	0	0	0	0	1	0	185	19
5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,577	2	177	276	237	-	13	41	12	က	0	73	0	75	0	1	0	0	1	0	387	47
285	0	27	21	21	0	က	က	2	0	0	0	0	9	0	0	0	0	0	0	∞	1
4,292	2	150	255	216	7	10	38	10	က	0	67	0	69	0	-	0	0	-	0	379	46
470,201	91	37,289	41,419	28,199	39	1,475	1,924	1,789	934	19	106	29	7,917	99	138	16	10	4	28	42,388	9,529
231,332	47	18,112	19,913	13,416	23	744	758	889	465	6	55	32	3,644	28	69	80	Ω	49	12	21,007	3,909
Total	93	66	106	109	118	126	139	233	239	242	260	261	10001	10014	10015	10092	10203	10204	10403	10420	10421

a · Exploration
b · Production
(ab) · Exploration & Production · Not Sep.
c · Gas Processing

d · Drilling
e · Petrochemical Manufacturing
f · Refining
g · Marketing · Wholesale

h - Marketing - Retail (gh) - Marketing - Not Sep. i - Pipeline - Liquid j - Pipeline - Gas

ail (ij) Pipeline - Not Sep.
Sep. k Marine - Tanker
I - Marine - Inland
(kl) - Marine - Not Sep.

m · Research & Development n · General Services o · Admin., Engineering, & Other

Away From Days Away Days -- Days Lost Work Work Incidence Rates From Work Fatal plus Cases Total Cases Workdays Non-Fatal Without Cases Lost Extent and Outcome of Injury and Illness Number of Restricted Days of Activity Lost Workday Cases of Days | Number From Away Work Involving Days Away From Work Workday Total Lost Cases Fatalities Total Recordable Cases Illnesses Injuries Number of Worked in Employees Thousands Hours Average Company ₽

### All Functions

	b,o		·i	f,	(ab),o	ī	(ab),c,(ij),o	ţji	(ab),f,(gh)	c,i,o	• 1004	c,(gh),i,o	ţ.	a,b,c,o	Çan.	ç.	•		Ç.	b,(ij),o	a,(ab),b,d,(gh),(ij),j,m,o
8.73	0.00	0.00	0.00	2.84	0.00	0.00	2.06	13.06	na	0.00	16.30	9.29	12.12	5.08	4.71	486.96	0.00	0.00	1.11	0.00	1.24
0.48	0.00	0.00	0.00	1.90	00'0	00'0	0.11	1.27	1.02	0.00	1.48	0.63	1.25	1.02	2.35	4.35	0.00	0.00	0.56	00.0	0.41
1.95	0.00	0.00	0.00	3.79	7.55	08.0	09.0	4.35	2.72	0.17	5.93	1.69	2.37	5.08	9.41	13.04	0.00	0.00	3.33	0.00	0.62
2,318	0	0	0	2	2	-	6	12	37	-	4	4	12	အ	3	2	0	0	2	0	0
21,609	0	0	0	0	0	0	0	179	na	0	84	က	619	19	0	0	0	0	63	0	ស
20,526	0	0	0	အ	0	0	38	72	na	0	22	44	194	20	2	112	0	0	2	0	9
1,114	0	0	0	2	0	0	2	7	38	0	2	က	20	-			0	0	-	0	2
2,254	0	0	0	2	0	0	73	12	64	0	4	4	56	2	-	1	0	0	4	0	က
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,577	0	0	0	4	2	Н	11	24	101	Н	8	8	38	2	4	က	0	0	9	0	က
285 4	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
4,292	0	0	0	4	7	-	11	20	101	-	80	8	34	2	4	က	0	0	9	0	က
470,201	9	82	117	211	53	249	3,695	1,103	7,429	1,185	270	947	3,202	197	82	46	13	37	360	31	996
231,332	က	57	63	66	29	124	1,924	554	3,715	551	140	457	1,348	66	45	25	9	16	160	13	466
Total	10514	10532	10544	10546	10560	10570	10573	10575	10586	10620	10621	10622	10626	10636	10650	10651	10652	10703	10710	10712	10713

a · Exploration
b · Production
(ab) · Exploration & Production · Not Sep.
c · Gas Processing

d · Drilling
e · Petrochemical Manufacturing
f · Refining
g · Marketing · Wholesale

h - Marketing - Retail (gh) - Marketing - Not Sep. i - Pipeline - Liquid j - Pipeline - Gas

(ij) · Pipeline · Not Sep. k · Marine · Tanker l · Marine · Inland (kl) · Marine · Not Sep.

m · Research & Development n · General Services o · Admin, Engineering, & Other

			Recc	Recordable Cases	es		Extent and	d Outcome	of Injury	Extent and Outcome of Injury and Illness			Incidence Rates	ates
								Lost Workday Cases	day Cases					
								Cases						
								Involving	nvolving Number		Non-Fatal			
		-						Days	of Days	of Days Number of Cases	Cases		Fatal plus	Fatal plus   Lost Work
	Average	Hours					Total Lost	Away		Away Days of	Without		Days Away	Days Away Days Days
Company	Number of	Worked in					Workday	From		Restricted	Lost	Total	Total   From Work   Away From	Away From
Ω	Employees	Thousands	Injuries	Illnesses	Total	uries Illnesses Total Fatalities Cases	Cases	Work	Work	Activity	Workdays Cases	Cases	Cases	Work

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8.73	9.82	16.88	00.00	108.20	31.37	0.00	5.42	0.00	1,453.33	0.00	17.14	0.00	100.74	0	42.32	1.29	0.00	0.29	8.00	0.00	0.00
0.48	0.18	0.72	0.00	4.47	3.92	0.00	0.33	0.00	53.33	0.00	1.90	0.00	3.95	0	0.68	0.32	0.00	0.14	0.21	0.00	0.00
1.95	1.23	4.67	1.37	11.08	5.88	0.00	2.38	0.00	53.33	0.00	1.90	0.00	7.41	2.58	4.10	1.45	1.01	0.43	0.84	0.00	0.00
2,318	9	11	7	31	-	0	25	0	0	0	0	0	7	4	2	2	က	2	9	0	0
21,609	0	58	22	271	0	0	9	0	35	0	10	0	105	0	0	70	က	0	0	0	0
20,526	99	47	0	208	16	0	99	0	109	0	6	0	204	0	62	8	0	2	92	0	0
1,114	-	2	0	21	2	0	4	0	4	0	-	0	80	0	-	2	0	-	2	0	0
2,254	-	7	63	21	2	0	4	0	4	0	1	0	<b>∞</b>	0	-	4	-	-	73	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,577	7	13	4	22	က	0	53	0	4	0	-	0	15	4	9	6	4	က	œ	0	0
285	0	-	0	-	0	0	67	0	0	0	0	0	-	0	0	က	0	0	-	0	0
4,292	7	12	4	51	က	0	27	0	4	0	1	0	14	4	9	9	4	က	7	0	0
470,201	1,141	557	584	939	102	14	2,436	9	15	275	105	4	405	310	293	1245	488	1396	1899	156	29
231,332	516	258	275	405	20	9	1,149	8	ဗ	140	47		184	125	134	647	438	704	913	53	30
Total	10714	10716	20016	20029	20032	20037	20038	20050	20111	20124	30101	30103	30111	90001	90013	90024	90062	66006	90106	90421	93421

a · Exploration
b · Production
(ab) · Exploration & Production · Not Sep.
c · Gas Processing

d - Drilling
e - Petrochemical Manufacturing
f - Refining
g - Marketing · Wholesale

h - Marketing - Retail (gh) - Marketing - Not Sep. i - Pipeline - Liquid j - Pipeline - Gas

(ij) - Pipeline - Not Sep.k - Marine - Tankerl - Marine - Inland(kl) - Marine - Not Sep.

m · Research & Development n · General Services o · Admin, Engineering, & Other

ates				Fatal plus   Lost Work	Days Away Days Days	Away From	Work
Incidence Rates				Fatal plus	Days Away	Total   From Work   Away From	Cases
						Total	Cases
			Non-Fatal	Cases	Without	Lost	Activity Workdays Cases
Extent and Outcome of Injury and Illness	S			Days   of Days   Number of Cases	Away Days of	Restricted Lost	Activity
of Injury	day Case		nvolving Number	of Days			Work
1 Outcome	Lost Workday Cases	Cases	Involving	Days	Away	From	Work
Extent and					Total Lost	Workday	Cases
							Injuries Illnesses Total Fatalities Cases
ses							Total
Recordable Cases							Illnesses
Rec							Injuries
					Hours	Worked in	ployees Thousands
					Average	z	Employees
						Company	В

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1.95	0.00
2,318	0
21,609	0
20,526	0
1,114	0
2,254	0
5	0
4,577	0
285	0
4,292	0
470,201	50
231,332	23
Total	99421

0.00

0.00

8.73

0.48

0.00

0.00

0.00

10

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

		Re	Recordable Cases	ses		Extent a	nd Outcome	Extent and Outcome of Injury and Illness	nd Illness		Į.	Incidence Rates	Se
	-						Lost Worl	Lost Workday Cases					
Average Company Number of	Hours of Worked		Ē	Ē	; ;		Cases Involving Days Away From	Cases Involving Number of Number of Total Lost Days Away Days Away Days of Workday From From Restricted	Number of Days of Restricted		Total	Fatal plus Days Away From Work	Ž Ž
aadouduur l	<b>⊒</b> !	J rijuries	Illnesses	Total	Fatalities Ext	Exploration	Work	Work	Activity	Workdays	Cases	Cases	Work
					•								
Total 911	1,717	က	0	w	0	I	0	0	33	7	0.35	0.00	0.00
		0	0	0	0	0	O	C	C	_	0		000
58 89		0	0	0	0	0	C	· C	• •	o c	000		0.0
65 295	5 531	က	0	က	0	, <del>, , , ,</del>	0	0	33	0 6	1 13	00.0	00.0
99 84		0	0	0	0	0	0	0		) C	000		00.0
	5 10	0	0	0	0	0	0	0	· C	° C	00.0		00.00
10636	4 8	0	0	0	0	0	0	· C	· C	• =	00.0		
10713 36	6 74	0	0	0	0	0	0	0	0	° C	000		00.0

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

	R.	Recordable Cases	es		Extent a	nd Outcome	Extent and Outcome of Injury and Illness	d Illness		I	Incidence Rates	8
						Lost Workday Cases	day Cases					
						Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
						Involving	Involving Number of Number of Cases	Number of	Cases		Days Away Days	Days
Average Hours					Total Lost	Days Away	Total Lost Days Away Days Away Days of	Days of	Without		From	From Days Away
Company Number of Worked					Workday	From	From	Restricted	Lost	Total	Work	From
Employees (Thousands)	ds) Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity	Activity Workdays	Cases	Cases	Work

						Produ	Production							
Total	13,323	28,008	161	13	204	0	101	52	1,114	1,285	26	1.46	0.37	7.95
13	253	351	9	0	9	0	5	2	51	0	-	3.42	2.85	29.06
14	236	484	4	0	4	0		<b>-</b>	9	45	က	1.65	0.41	2.48
41	2,901	6,398	53	က	32	0	20	က	87	542	12	1.00	0.09	2.72
28	319	652	4	0	4	0	<b>-</b>	-	162	0	က	1.23	0.31	49.69
65	1,701	3,316	14	0	14	0	7	2	13	231	7	0.84	0.12	0.78
66	2,686	6,029	19	4	23	0	18	6	57	27	ಸ	0.76	0.30	1.89
109	3,902	8,007	73	9	79	0	32	15	459	365	47	1.97	0.37	11.47
10092	4	80	0	0	0	0	0	0	0	0	0	00'0	0.00	0.00
10514	1	2	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10636	6	22	1	0	1	0	1	0	0	IJ	0	60.6	0.00	0.00
10712	က	80	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10713	119	247		0	1	0	-	1	-	0	0	0.81	0.81	0.81
20016	275	584	4	0	4	0	7	0	0	22	2	1.37	0.00	0.00
30103	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	00.00

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

										Ī			
		Re	Recordable Cases	les		Extent	nd Outcome	Extent and Outcome of Injury and Illness	d Illness		II	Incidence Rates	8
							Lost Workday Cases	day Cases					
							Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
							Involving	Involving Number of Number of Cases	Number of	Cases		Days Away Days	Days
Average	e Hours					Total Lost	Days Away	Total Lost Days Away Days Away Days of	Days of	Without		From	Days Away
Company Number of	of Worked					Workday	From	From	From Restricted	Lost	Total	Work	From
Employees   ('	Thousands)	Injuries Illnesses	Illnesses	Total	Fatalities	Cases	Work	Work	Activity	Activity Workdays	Cases	Cases	Work

	7.94	0.00	5,63	9.15	3.53	22.53	16.08	9.23	3.31	5.80	1.37	26.67	7.81	0.00	10.37	na	0.00	31.37	5.45	0.00
	0.51	0.00	0.21	0.81	0.98	1.48	1.13	0.07	0.11	0.25	0.27	0.95	0.54	0.00	0.30	0.33	0.00	3.92	0.33	0.00
	1.32	1.16	1.52	0.81	1.56	2.03	2.54	0.35	0.53	06.0	1.65	1.43	1.20	11.11	1.19	0.87	0.00	5.88	2.38	00.00
	211	4	31	0	56	က	2	4	16	19	5	2	17	8	က	П	0	-	25	0
	537	0	92	0	<b>∞</b>	0	0	0	10	16	0	38	09	0	0	na	0	0	9	0
arated	2,207	0	137	34	158	122	22	133	144	202	2	112	201	0	35	na	0	16	99	0
ivot Sep	142	0	5	က	44	œ	4	1	J.	6	1	4	14	0	-	က	0	2	4	0
:- uonai	155	0	9	က	44	œ	4	-	7	13	-	4	14	0		7	0	2	4	0
ia Froat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
acion ai	366	4	37	က	70	11	6	5	23	32	9	9	31	7	4	80	0	က	53	0
TOID WAT	22	0	0	0	0	1	0	0	1	1	က	1	0	0	0	0	0	0	2	0
	344	4	37	က	20	10	6	5	22	31	1	ī	31	7	4	<b>∞</b>	0	က	27	0
	55,594	691	4,867	743	8,959	1,083	402	2,885	8,710	7,074	728	840	5,148	36	675	1,832	31	102	2,436	64
	26,471	315	2,018	357	4,434	490	351	1,387	4,187	3,401	326	378	2,469	19	341	916	15	20	1,149	30
	Total	11	14	19	24	27	31	32	06	106	109	10001	10420	10560	10573	10586	10713	20032	20038	20124

13

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

		Rec	Recordable Cases	Se		Extent a	nd Outcome	Extent and Outcome of Injury and Illness	nd Illness			Incidence Rates	S
							Lost Work	Lost Workday Cases					
							Cases	Cases Number of Number of	Number of	Non-Fatal Cases		Fatal plus Lost Work Days Away Days	Lost Work
Average Hours						Total Lost	Days Away	Total Lost Days Away Days Away	Days of	Without		From	Days Away
Number of Worked						Workday	From	From	Restricted	Lost	Total	Work	From
Employees (Thousands) Injuries Illnesses	Illnesses	4		Total	Fatalities	Cases	Work	Work	Activity	Workdays	Cases	Cases	Work
					Gas I	Gas Processing	ng.						
3,788 7,797 48 1	48 I	I		49	0	18	9	283	66	31	1.26	0.15	7.26
15 30 0 0	0 0	0		0	0	0	0	0	0	0	0.00		0.00
692 1,440 3 0	3	0		က	0	1	0	0	5	2	0.42		0.00
<b>19</b> 36 2 0	2 0	0		2	0	2	2	45	0	0	11.11		250.00
<b>132</b> 267 3 0	3 0	0		က	0	2	0	0	73	-	2.25		0.00
1,127 2,347 17 0	17 0	0		17	0	8	2	231	21	6	1.45		19.69
	1 1	1		2	0	0	0	0	0	2	0.87		0.00
	0 9	0		9	0	-	-	4	0	5	1.06		0.71
		0		9	0	_	-	က	0	5	2.10		1.05
321 705 1 0	1 0	0		_	0	0	0	0	0	1	0.28		0.00
25 47 0 0	0 0	0		0	0	0	0	0	0	0	0.00	0.00	0.00
14 29 3 0		0		က	0	0	0	0	0	က	20.69		0.00

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

Recordable Cases	Recordable Cases	Cases	_		Extenta	Extent and Outcome of Injury and Illness	of Injury an	d Illness		Ē	Incidence Rates	88
		<u> </u>				Lost Workday Cases	day Cases					
			·			Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
						Involving	Involving Number of Number of	Number of	Cases		Days Away	Days
Hours				-	Total Lost	Total Lost Days Away Days Away	Days Away	Days of	Without		From	Days Away
					Workday	From	From	Restricted	Lost	Total	Work	From
(Thousands) Injuries Illnesses Total	Illnesses	4		Fatalities	Cases	Work	Work	Activity	Workdays	Cases	Cases	Work
				H	Drilling							
1,487 31 1 32	I	I 3	c/1	0	27	23	466	24	5	4.30	3.09	62.68
81 0 0	0 0	0	_	0	0	0	0	0	0	0.00		0.0
$71 \qquad 0 \qquad 1$	0 1	1		1 0	0	0	0	0	-	2.82	0.00	0.00
469   1   0	1 0	0	, ,	1 0	0	0	0	0	-	0.43		000
4 1 0	1 0	0		1 0	-	Г	189	0	0	50.00		9.450.00
372 0 0	0 0	0	_	0 0	0	0	0	0	0	00.0		0.00
8 0 0	0 0	0	_	0 0	0	0	0	0	0	0.00		0.00
$14 \qquad 0 \qquad 0$	0 0	0	_	0 0	0	0	0	0	0	0.00		0.00

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

		ost Work	Davs	Days Away	From	Work
Incidence Rates		Fatal plus Lost Work	Days Away Days	From D	Work	Sose
In					Total	Сяков
		Non-Fatal	Cases	Without	Lost	Workdays
d Illness			Involving   Number of Number of	Days of	Restricted	Activity   Workdays
Extent and Outcome of Injury and Illness	Lost Workday Cases		Number of	Total Lost Days Away Days Away Days of	From	Work
nd Outcome	Lost Work	Cases	Involving	Days Away	From	Work
Extent a				Total Lost	Workday	Cases
						Fatalities
ses						Total
cordable Ca						Illnesses
Re						Injuries
			;	Hours	Worked	(Thousands)
				Average	Number of	Employees
				C	Company	CI

	6.46	000	00.00	07.0	7 7 7 9	14.40	134	* O	12.02
	0.37	000	00.0	0.40	0.05	0.00	0.10	000	0.28
	1.63	1 23	3.89	1 93	9.38	1.00	1.10	1.17	1.35
	151	ç	19	27	66	22	8	20	11
	1,774	4	270	1	40	132	622	323	216
	1,213	0	41	22.1	149	552	69	0	169
cturing	69	0	· cc	1	30	9	6	0	4
etrochemical Manufac	155	2	13	11	46	18	42	6	<b>∞</b>
nemical	0	0	0	0	0	0	0	0	0
Petrocl	306	8	25	35	75	45	77	16	19
	27	0	0	1	4	5	14	0	က
	279	80	25	34	71	40	63	16	16
	37,583	1,302	1,310	5,688	6,306	7,644	10,313	1,991	2,813
	17,925	809	616	2,833	3,031	3,631	4,958	966	1,103
	Total	11	13	24	06	66	106	10001	10420

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

			Re	Recordable Cases	ses		Extent 8	ind Outcome	Extent and Outcome of Injury and Illness	d Illness		II	Incidence Rates	se
								Lost Work	Lost Workday Cases					
								Cases			Non-Fatal		Fatal plus	Fatal plus Lost Work
	Average	Honne						Involving	Number of	_	Cases		Days Away	Days
Company ID	Number of Employees	Worked	20,000		É		Total Lost Workday	Total Lost Days Away Days Away Workday From From	Days Away From	Days of Restricted	Without	Total	From Work	Days Away From
	and ford	(eniinenoiit)	carmfire	ninesses	1 otal	ratalities	Cases	Work	Work	Activity	Workdays	Cases	Cases	Work
						ρ								
						4	venung							
Total	44,054	94,084	1,066	80	1,146	I	558	277	5,390	8,437	282	2.44	0.59	11.46
11	699	1,460	18	0	18	0	7	C	C	08	-	0	0	d
13	1,544	3.102	75	6	77	• •	- 4	9	200	60	11	7.47	0.00	0.00
14	1 475	3 964	66		. 6		Ç.	97	667	841	32	4.96	1.03	51.52
94	4648		3 8	> +	77 6	0 (	- ;	T :	2	169	15	1.35	0.06	0.31
60	4,040		90 5	٦ ،	97	0	51	49	98	30	46	1.96	0.99	1.73
70	2,172	4,517	19	0	19	0	15	0	0	229	4	0.84	0.00	0.00
41	3,963	8,476	29	17	69	0	39	13	123	550	30	1.63	0.31	2.90
43	373	856	93	15	108	0	26	26	519	208	82	25.23	6.07	121.26
ද ද	1,671	3,407	44	4	48	0	18	1	16	263	30	2.85	0.06	0.94
G 6	2,565	5,333	22	က	9	0	42	6	374	160	18	2.25	0.34	14 03
66	4,069	7,991	26	11	67	0	34	5	325	819	33	1.68	0.13	8.13
106	4,715	9,806	90	က	93	0	45	<b>∞</b>	168	1,135	48	1.90	0.16	3.43
109	1,987	4,239	54	က	57	0	30	21	745	159	27	2.69	0.99	35.15
139	758	1,924	38	က	41	1	22	5	199	788	18	4.26	0.62	20.69
10001	1,331	2,826	32	က	37	0	16	0	0	612	21	2.62	0.00	00.00
10420	3,852	8,617	55	က	28	0	30	14	453	589	28	1.35	0.32	10.51
10421	2,302	5,694	42	0	45	0	15	15	283	0	27	1.48	0.53	76 6
10546	66	211	4	0	4	0	2	2	က	· C	6	3 79	1 00	70.0
10575	399	773	13	က	16	0	6	4	25	179	1 6	4 14	1.03	40.04 FA A
10586	1,469	2,938	38	0	38	0	20	15	e u	2	. 10	0 50	1.00	7.0
10626	1,348	3,202	34	4	38	0	26	20	194	619	5 6	9.87	1.04	10 10
10650	45	82	4	0	4	0	1	-	2		9 6	0.41	0.2.1	16.16
							1	•	1	>	5	7.41	2.50	4.71

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

Incidence Rates		Fatal plus Lost Work	Days Away Days	From Days Away	Work From	Cases Work
Inciden		Fata	Days		Total We	Cases   Ca
		Non-Fatal	Cases	Without	Lost	_
d Illness			Involving Number of Number of		Restricted	Activity Workdays
Extent and Outcome of Injury and Illness	Lost Workday Cases		Number of	Total Lost Days Away Days Away Days of	From	Work
and Outcome	Lost Worl	Cases	Involving	Days Away	From	Work
Extent a				Total Lost	Workday	Cases
						Fatalities
Cases						Total
Recordable Ca						Injuries   Illnesses
R						
				Hours	Worked	(Thousands)
				Average	Number of	Employees
					Company N	О

	11.46	96.98	1.11	16.88	23.47	100.74
	0.59		0.56			
	2.44	13.04	3.33	4.67	12.80	7.41
	282	2	2	11	28	7
	8,437	0	63	28	168	105
	5,390	112	2	47	463	204
	277	H		2	20	œ
ning	258	1	4	2	20	80
Refining	I	0	0	0	0	0
	1,146	က	9	13	48	15
	80	0	0	-	-	-
	1,066	က	9	12	47	14
	94,084	46	360	557	750	405
	44,054	25	160	258	312	184
	Total	10651	10710	10716	20029	30111

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

			Re	Recordable Cas	es		Extent a	nd Outcome	Extent and Outcome of Injury and Illness	d Illness		Ir	Incidence Rates	Si
								Lost Workday Cases	day Cases					
								Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
								Involving	Involving Number of Number of Cases	Number of	Cases		Days Away Days	Days
	Average	Hours					Total Lost	Days Away	Total Lost Days Away Days Away Days of	Days of	Without		From	Days Away
Sompany	Number of	Worked					Workday	From	From	Restricted	Lost	Total	Work	From
Ω	Employees	(Thousands)	Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity	Activity   Workdays	Cases	Cases	Work

Marketing -- Wholesale

15.41	0.00	10.06	09.0	0.00	0.00	0.00	165.39	6.15	9.79	96.0	0.00
0.73	0.00	0.47	0.02	0.00	0.00	0.00	4.94	0.53	1.01	0.14	0.00
2.59	0.00	3.55	0.92	1.94	0.22	0.98	5.84	1.93	2.30	0.14	0.00
142	0	83	10	8	-	7	2	-	6	0	0
1,412	0	936	52	20	0	30	2	78	244	0	0
2,285	0	258	13	0	0	0	368	35	145	7	0
108	0	56	_	0	0	0	11	က	15	-	0
242	0	115	10	9	0	11	11	10	25	1	0
0	0	0	0	0	0	0	0	0	0	0	0
384	0	197	20	14	<b>-</b>	18	13	11	34	-	0
7	0	က	0		0	0	0	0	7	0	0
377	0	194	20	13	-	18	13	11	32	-	0
29,650	361	11,096	4,356	1,443	905	3,670	445	1,139	2,961	1,457	22
14,131	187	5,582	1,904	737	435	1,767	204	452	1,326	644	22
Total	11	13	41	65	90	66	109	10001	10420	10421	20029

8.36

0.62

19

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

Lost Workday Cases Cases Involving Number of Number of Cases Total Lost Days Away Days of Without
Cases Involving Total Lost Days Away
Total Lost Days Away
Total Lost Days Away
Workday From
esses Total Fatalities Cases Work

			F	<b>Marketir</b>	Marketing Retail	=				
55,707	1,197	15	1,212	I	919	172	2,329	5,800	262	4.35
729	21	0	21	0	17	7	200	343	4	5.76
20,338	764	13	777	0	409	46	473	4,625	368	7.64
6,871	31	0	31	0	6	3	53	56	22	0.00
4	0	0	0	0	0	0	0	0	0	0.00
5,720	24	-	22	1	2	2	10	0	22	0.87
3,318	31	н	32	0	16	15	61	4	16	1.93
11,075	210	0	210	0	91	35	452	669	119	3.79
222	2	0	2	0	2	2	30	0	0	1.80
118	4	0	4	0	-	1	45	103	တ	6.78

54.87 4.65 1.54 0.00 0.35 3.68 8.16 8.16 27.03

1.92 0.45 0.09 0.00 0.10 0.90 0.63 1.80

11 13 41 65 90 109 10420 20029

Total

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

			Re	Recordable Case	es		Extent a	Extent and Outcome of Injury and Illness	of Injury and	d Illness		II	Incidence Rates	98
•								Lost Workday Cases	day Cases					
								Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
								Involving	Involving Number of Number of Cases	Number of	Cases		Days Away Days	Days
	Average						Total Lost	Total Lost Days Away Days Away Days of	Days Away	Days of	Without		From	Days Away
mpany	Number of	Worked					Workday	From		Restricted	Lost	Total	Work	From
αI	Employees	(Thousands)	Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity Workdays	Workdays	Cases	Cases	Work

	3.73	3.50	8.46	0.77	2.01	1.04	na	0.00	0.00
	0.50	0.18	1.02	0.03	0.27	0.26	1.50	0.00	0.00
	1.61	1.01	2.28	0.12	1.18	1.04	4.14	00.00	0.00
	129	5	35	2	43	က	18	0	0
	302	51	90	20	49	0	na	0	0
	248	38	249	25	111	4	na	0	0
rated	7.1	2	28	_	15	-	20	0	0
Marketing Not Separated	901	9	30	2	22	1	37	0	0
eting ]	01	0	7	0	0	0	0	0	0
Mark	237	11	29	4	65	4	22	0	0
	21	0	18	0	2	-	0	0	0
	912	11	49	4	63	က	55	0	0
	29,416	2,169	5,884	6,454	11,048	167	2,659	44	62
	14,423	1,101	2,968	3,104	5,311	377	1,330	22	30
	Total	14	24	32	106	109	10586	10622	10713

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

			Rec	Recordable Cases	es		Extent a	nd Outcome	Extent and Outcome of Injury and Illness	1 Illness		Ir	Incidence Rates	Se
		L						Lost Workday Cases	day Cases					
				·				Cases			Non-Fatal		Fatal plus	Fatal plus Lost Work
		<del></del>						Involving	Involving Number of Number of Cases	Number of	Cases		Days Away Days	Days
Average		Hours					Total Lost	Days Away	Total Lost Days Away Days Away Days of	Days of	Without		From	From Days Away
Company Number of		Worked		-			Workday	Workday From	From Restricted Lost	Restricted	Lost	Total	Work	From
ID Emplo	yees (The	Employees (Thousands) Injuries	Injuries	Illnesses	Total	Fatalities Cases	Cases	Work	Work	Activity	Work Activity Workdays	Cases	Cases	Work
						Pipeli	Pipeline Liquid	uid						
Matal 11 777	777	09 660	190	1.1	901	-	ŏ		1961	718		1 70	119 1 70 0 54 10 69	10.69

10.69	0.00	59.51	3.70	0.31	0.00	0.00	0.00	0.00	0.00	5.14	0.00	0.89	0.00	50.69	0.29	8.00	0.00	9.36	22.69	5.57	00'0
0.54	0.00	2.23	0.38	0.15	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.18	0.00	3.45	0.14	0.21	0.00	0.54	0.56	0.21	0.00
1.70	1.29	7.16	0.89	0.46	1.18	0.19	0.00	0.00	0.21	2.00	1.01	1.25	0.79	6.90	0.43	0.84	6.45	1.76	1.34	0.64	0.00
112	П	17	4	2	8	П	0	0	0	က	က	4	2		2	9	0	6	7	2	0
814	0	362	11	0	0	0	0	0	5	61	က	ಸ	0	0	0	0	14	0	194	5	0
1,264	0	374	53	2	0	0	0	0	0	18	0	જ	0	9	2	92	0	69	203	56	0
63	0	13	က	H	0	0	0	0	0	2	0	H	0		<b>-</b>	2	0	4	2	_	0
· 88	0	27	က	1	0	0	0	0	1	4	-	က	0	-	-	2		4	2	<b>,</b>	0
Į	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
201		45	7	က	80	-	0	0	<del>, ,</del>	2	4	7	2	2	က	œ	-	13	12	က	0
11	0	0	1	0	0	0	0	0	0	-	0		0	0	0	1	0	က	2	0	0
190	H	45	9	က	80	-	0	0	1	9	4	9	2	2	က	7	-	10	10	က	0
23,659	155	1,257	1,567	1,305	1,353	1,042	32	277	940	700	789	1,123	506	58	1,396	1,899	31	1,475	1,789	934	19
11,777	29	1,004	654	009	652	501	16	129	429	352	438	539	260	53	704	913	16	744	688	465	6
Total	11	13	14	17	29	32	33	38	41	09	65	06	91	93	66	106	118	126	233	239	242

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

			Re	Recordable Case	sə		Extent a	Extent and Outcome of Injury and Illness	of Injury and	4 Illness		] 	Incidence Rates	5
								Lost Workday Cases	day Cases					
								Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
								Involving	Involving Number of Number of Cases	Number of	Cases		Days Away Days	Days
	Average						Total Lost	Total Lost Days Away Days Away Days of	Days Away	Days of	Without		From	From Days Away
Company	mpany Number of	Worked					Workday	From	From	Restricted Lost	Lost	Total	Work	From
ID	Employees	(Thousands)	Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity Workdays	Workdays	Cases	Cases	Work

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7	
ine -	
Pipeline	
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10.69	000	00.0	00.0	00.0	00.0	00:0	00.0	00.0	000	000	28.48	00.0	16.30	15.49	0.00	9.82	0.00	0.00	0.00	.453.33	17.14
0.54	0 0	000	00.0	00.0	0.00	0.00	000	000	000	00.0	1.82	000	1.48	1.06	00.00	0.18	0.00	0.00	0.00	53.33	1.90
1.70	3.77	000	2.58	0.00	1.45	0.00	0.00	0.00	0.00	0.80	4.85	0.00	5.93	2.46	0.00	1.23	0.00	0.00	0.00	53.33	1.90
112	-	· C	4	0	-	0	0	0	· c	•	מיו	0	4	က	0	9	0	0	0	0	0
814	22	C	0	0	0	0	0	0	0	0	0	0	84	က	0	0	0	0	0	35	10
1,264	0	0	0	0	0	0	0	0	0	0	47	0	22	44	0	26	0	0	0	109	6
63	0	0	0	0	0	0	0	0	0	0	က	0	2	က	0	_	0	0	0	4	-
88	↔	0	0	0	0	0	0	0	0	0	က	0	4	4	0	-	0	0	0	4	-
I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
201	8	0	4	0	-	0	0	0	0	<del>, -</del>	œ	0	8	7	0	7	0	0	0	4	1
11	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
061	2	0	4	0	П	0	0	0	0	-	7	0	œ	7	0	7	0	0	0	4	-
23,659	106	29	310	56	138	28	273	85	117	249	330	129	270	268	37	1,141	14	14	9	15	105
11,777	55	32	125	28	69	12	106	22	63	124	155	61	140	598	16	516	16	9	2	က	47
Total	260	261	10001	10014	10015	10403	10421	10532	10544	10570	10575	10620	10621	10622	10703	10714	20029	20037	20020	20111	30101

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

Average Hours Number of Worked Worked Injuries Illnesses Total Fatalities Cases  I1,777 23,659 190 11 201 1 88  125 310 4 0 4 0 0 1 134 293 6 0 6 6 0 1 134 293 6 0 6 6 0 1 134 1,396 3 0 3 0 1 913 1,899 7 1 8 0 0 0 913 156 0 0 0 0 0			Re	Recordable Cases	es		Extent a	Extent and Outcome of Injury and Illness	of Injury an	nd Illness			Incidence Rates	es
Hours Worked (Thousands) Injuries Illnesses Total Fatalities Cases (Thousands) Injuries Illnesses Total Fatalities Cases S3,659 190 11 201 1 88 1 0 0 1 1,396 3 0 3 0 0 11,899 7 1 1,899 7 1 1 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0								Lost Work	Lost Workday Cases					
Hours   Worked   Worklay   Worklay								Cases			Non-Fatal		Fatal plus	Fatal plus   Lost Work
Hours Worked         Worked         Illnesses         Total         Fatalities           23,659         190         11         201         1           310         4         0         4         0           789         4         0         4         0           1,396         3         0         3         0           1,899         7         1         8         0           67         0         0         0         0				•				Involving	Involving Number of Number of	Number of	Cases		Days Away	Days
Worked (Thousands)         Injuries         Illnesses         Total         Fatalities         Workday Cases           23,659         190         11         201         1         88           310         4         0         4         0         0           293         6         0         6         0         1           1,396         3         0         4         0         1           1,899         7         1         8         0         0           67         0         0         0         0         0           67         0         0         0         0         0	Average	Hours					Total Lost	Days Away	Days Away	Days of	Without		From	Days Away
23,659 190 11 201 310 4 0 4 293 6 0 6 789 4 0 4 1,396 3 0 3 1,899 7 1 8 156 0 0 0	Number of Employees		Injuries	Illnesses	Total	Fatalities	Workday Cases	From Work	From Work	Restricted Activity	Lost Workdays	Total Cases	Work	From Work
11,777     23,659     190     11     201     1     88       125     310     4     0     4     0       134     293     6     0     6     0       438     789     4     0     4     0       704     1,396     3     0     3     0       913     1,899     7     1     8     0       53     156     0     0     0     0       67     0     0     0     0						Pipeli	ne Liq	fuid						
125     310     4     0     4     0       134     293     6     0     6     0       438     789     4     0     4     0       704     1,396     3     0     3     0       913     1,899     7     1     8     0       53     156     0     0     0     0       30     67     0     0     0       63     67     0     0     0	Total 11,777		190	11	201	I	88	63	1,264	814	112	1.70	0.54	10.69
134     293     6     0     6     0       438     789     4     0     4     0       704     1,396     3     0     3     0       913     1,899     7     1     8     0       53     156     0     0     0     0       30     67     0     0     0       67     0     0     0     0			4	0	4	0	0	0	0	0	· 4	2.58		0.00
438     789     4     0     4     0       704     1,396     3     0     3     0       913     1,899     7     1     8     0       53     156     0     0     0     0       30     67     0     0     0       32     50     67     0     0			9	0	9	0	-		62	0	5	4.10		Ĭ
704     1,396     3     0     3     0       913     1,899     7     1     8     0       53     156     0     0     0       30     67     0     0     0       93     67     0     0     0			4	0	4	0	-	0	0	က	က	1.01		
913     1,899     7     1     8     0       53     156     0     0     0     0       30     67     0     0     0     0       93     67     0     0     0     0			3	0	က	0	_	-	2	0	2	0.43		
53 156 0 0 0 0 0 0 0 30 67 0 0 0 0 0 0 0 0			7	-	<b>∞</b>	0	2	2	92	0	9	0.84	1 0.21	8.00
30 67 0 0 0 0			0	0	0	0	0	0	0	0	0	0.00		
66			0	0	0	0	0	0	0	0	0	0.00		
07	99421 23	3 50	0	0	0	0	0	0	0	0	0	0.00		

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

		Re	Recordable Cases	sa		Extent a	Extent and Outcome of Injury and Illness	of Injury an	d Illness		Ir	Incidence Rates	Sé
							Lost Workday Cases	day Cases					
							Cases			Non-Fatal		Fatal plus	Fatal plus Lost Work
							Involving	Number of	Involving   Number of Number of	Cases		Days Away Days	Days
Average	Hours					Total Lost	Fotal Lost Days Away Days Away Days of	Days Away	Days of	Without		From	Days Away
mpany Number of Worked	Worked					Workday	From	From	Restricted	Lost	Total	Work	From
Employees (	(Thousands)	Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity	Workdays	Cases	Cases	Work

	19.24	18.48	0.00		2.88	1.29	0.79	9.23	0.00	0.00	0.00	1.29
	0.73	0.67	0.00		0.54	0.32	0.79	0.53	0.00	0.00	0.00	0.32
	2.09	1.98	4.17		1.86	1.45	2.21	2.11	0.00	0.00	0.00	1.45
	28	47	0 0		20	5	6	9	0	0	0	3
	195	118	0		20	70	0	0	0	0	0	70
	820	664	00		48	œ	5	35	0	0	0	æ
as	31	24	0	parated	6	8	5	2	0	0	0	2
Pipeline Gas	31	24	00	PipelineNot Separated	11	4	ಬ	7	0	0	0	4
Pip	0	0 0	00	Pipeline	0	0	0	0	0	0	0	0
	68	7.1	0 0	<b>F</b>	3I	6	14	80	0	0	0	6
	∞	ים	0		က	က	0	0	0	0	0	က
	81	99	90		28	9	14	œ	0	0	0	9
	8,524	7,185	101		.3,335	1,245	1,266	758	48	80	10	1,245
	3,825	3,178	49		1,596	647	563	357	21	က	70	647
	Total	31	10713		Total	24	109	10420	10573	10712	10713	90024

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

		Rec	decordable Case	86		Extent ar	nd Outcome	Extent and Outcome of Injury and Illness	d Illness		In	Incidence Rates	S
							Lost Workday Cases	day Cases					
							Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
							Involving	Involving Number of Number of Cases	Number of	Cases		Days Away Days	Days
Hours						Total Lost	Days Away	Total Lost Days Away Days Away Days of		Without		From	Days Away
Worked			<u>-</u> -			Workday	From	From	Restricted	Lost	Total	Work	From
Thousand	s)	Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity	Workdays	Cases	Cases	Work

						Mar	MarineInland	pue						
Total	301	634	8	0	8	0	5	0	0	22	က	2.52	0.00	0.00
13 10652	292 6	616 13	80	0 0	80	0 0	ۍ 0	0 0	0 0	57	e 0	2.60	0.00	0.00
						Monino	Mowing Not Sonowated	to t	_					
Total	1 892	4 680	56	ΥC	19	0	35	2.3	1.215	186	98	2.61	0.98	51.92
14	480	1,162	18	) 4 <sup>,</sup>	22	, 0	5 2	, ro	199	0	17	3.79	0.86	34.25
32	161	334	2	0	7	0	0	0	0	0	2	1.20	0.00	00.0
41	853	2,006	18	H	19	0	13	9	726	186	9	1.89	09.0	72.38
106	7.7	159	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
420	153	682	7	0	7	0	7	7	80	0	0	2.05	2.05	23.46

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

	Ī		Work		SA	,	way.	From	1110	Work
ates			Tost		V Da	,	Lays	<u> </u>	-	W
Incidence Rates			Fatal plus   Lost Work		Days Away Days	. 5	rion Days Away	Work	410:	2000
1								Total	10001	Caeoe
			Non-Fatal		Cases	Without	anoma	Lost	200	Workdays
d Illness					Number of	Dave of	10 26 20	Restricted Lost	-	Work Activity Workdays
Extent and Outcome of Injury and Illness	Lost Workday Cases				Involving   Number of   Number of   Cases	Total Lost Days Away Days Away Days of	fames afair	From		Work
nd Outcome	Lost Work		Cases	,	Involving	Davs Away	Constant of Constant	Workday From		Work
Extent a						Total Lost		Workday		Cases
									:	Fatalities
ses										Total
Recordable Ca										Ilinesses
Re										Injuries
		_				Hours		Worked	(TE)	(Inousands)
						Average	-	Ivamper of	Damilania .	ramproyees i
							Commen	company	=	

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	1.03	000	00.0	0.00	1.37	000	00.0	00.0	000	0.00	3.47	0.00
	0.02	000	000	0.00	0.18	0.00	0.00	00.0	0.00	0.00	0.19	0.00
	0.70	3.02	1.93	1.08	0.55	0.42	1.36	0.09	99.0	1.02	0.64	0.00
	35	ო	9	4	4		2	ı <del></del>	5	က	9	0
	103	7	10	16	0	0	0	0	19	24	27	0
1	69	0	0	0	15	0	0	0	0	0	54	0
elopmer	5	0	0	0	7	0	0	0	0	0	က	0
ana Dev	12	1	1	1	7	0	0	0	7	_	4	0
research and Developmen	0	0	0	0	0	0	0	0	0	0	0	0
Š	47	4	7	5	9	1	7	1	7	4	10	0
	2	0	0	4	7	0	0	0	0	7	0	0
	40	4	7	1	4	1	7	-	7	က	10	0
	13,342	265	724	930	2,192	479	294	2,300	2,127	784	3,110	79
	909'9	127	366	465	1,122	231	164	1,105	1,089	321	1,549	38
	Total	11	13	14	24	32	65	90	66	109	10420	10713

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

Recordable Cases Ex	s	s	s	KΩ	Ñ	tent a	nd Outcome Lost Work	Extent and Outcome of Injury and Illness Lost Workday Cases	d Illness		or I	Incidence Rates	SS.
_							Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
							Involving	Involving Number of Number of	Number of	Cases		Days Away Days	Days
Average	Hours					Total Lost	Days Away	Total Lost Days Away Days Away Days of	Days of	Without		From	Days Away
ompany Number of	Worked					Workday	From	From	Restricted	Lost	Total	Work	From
nployees	(Thousands)	Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity   Workdays	Workdays	Cases	Cases	Work

General Services	21 58 0 27 17 624 306 31 1.04 0.31 11.21	9 0 5 1 28 36 4 1.21 0.13	000 000 0 0 0 0 0 0 0	31   0   14   12   559   145   17   1.35   0.52	000 000 0 0 0 0 0 0 0	6 0 3 0 0 19 3 1.18 0.00	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	7 0 4 3 26 106 3 8.70 3.73	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
	0	9 0 5	0	0	0	0		7 0 4	2 0 0	2 0 1
General	0	0 6	0	0	0	0		0 2	2 0	2 0
	$37 \qquad 21$				0 0				1 1	
	5,556 11,129								508 1,058	
	Total £								06	

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

	Ī												
Records	Recorda	corda	ble Cas	es		Extent a	Extent and Outcome of Injury and Illness	of Injury an	d Illness		II	Incidence Rates	se
							Lost Workday Cases	day Cases					
							Cases			Non-Fatal		Fatal plus	Fatal plus Lost Work
							Involving	Involving Number of Number of	Number of	Cases		Days Away Days	Days
Hours	-					Total Lost	Total Lost Days Away Days Away Days of	Days Away	Days of	Without		From	Days Away
Vorked						Workday	From	From	Restricted	Lost	Total	Work	From
ousands) Injuries Illnesse	Injuries Illnesse	Illnesse	8	Total	Fatalities	Cases	Work	Work	Activity	Workdays	Cases	Cases	Work

								Lost Workday Cases	day Cases					
								Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
								Involving	Number of Number of	Number of	Cases		Days Away	Days
	Average	Hours					Total Lost	Total Lost Days Away Days Away	Days Away	Days of	Without		From	Days Away
Company ID	Number of Employees	Worked (Thousands)	Injuries	Illnesses	Total	Fatalities	Workday	From	From	Restricted Activity	Lost Workdays	Total Cases	Work	From Work
										,				
					Admi	nistrati	on, Engi	Administration, Engineering and Other	and Oth	er				
Total	31,754	63,855	100	43	143	0	09	46	651	175	83	0.45	0.14	2.04
11	577	1,030	0	0	0	0	0	0	0	0	0	00'0	0.00	0.00
13	2,315	4,549	14	3	17	0	80	4	22	32	6	0.75	0.18	0.97
14	2,535	5,250	12	5	17	0	9	9	20	6	11	0.65	0.23	0.76
24	2,542	4,754	4	17	21	0	9	4	70	7	15	0.88	0.17	2.94
27		2,138	32	0	5	0	4	4	147	0	1	0.47	0.37	13.75
32		4,057	4	0	4	0	2	1	2	63	2	0.20	0.02	0.25
41	2,529	5,260	က	9	6	0	4	4	142	0	3	0.34	0.15	5.40
65		2,703	2	0	2	0	1	0	0	က	-	0.15	00.0	0.00
74		42	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
90		2,052	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
93		33	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
66		7,391	5	9	11	0	2	2	29	0	6	0.30	0.05	0.78
106		1,120	1	0	1	0	0	0	0	0	1	0.18	00.0	0.00
109		7,516	18	4	22	0	7	7	45	0	15	0.59	0.19	1.20
118	7	8	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10001	363	811	1	0	1	0	0	0	0	0	1	0.25	0.00	00.0
10092	4	80	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10420	3,426	6,852	10	0	10	0	4	7	13	12	9	0.29	90.0	0.38
10514	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10560	10	17	0	0	0	0	0	0	0	0	0	0.00	0.00	00.0
10573	1,265	2,400	1	0	1	0	0	0	0	0	1	0.08	0.00	0.00

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997

		Rec	Recordable Case	Se		Extent a	nd Outcome	Extent and Outcome of Injury and Illness	d Illness		In	Incidence Rates	S
							Lost Workday Cases	day Cases					
							200	Ŷ		N. D. A.		Datal plus	I and Month
							Cases			Non-rara		ratal plus   Lost work	LOSC WOLK
		_					Involving	Involving Number of Number of Cases	Number of	Cases		Days Away Days	Days
	Hours					Total Lost	Days Away	Total Lost Days Away Days Away Days of	Days of	Without		From	Days Away
	Worked					Workday	From	From	Restricted Lost	Lost	Total	Work	From
mployees (T)	nousands)	Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity Workdays	Workdays	Cases	Cases	Work

					Adminis	dministration,	Engine	ering an	Engineering and Other					
Total	31,754	63,855	100	43	143	0	09	46	129	175	83	0.45	0.14	2.04
10620	169	351	0	0	0	0	0	0	0	0	0	0.00	0.00	00.0
10622	144	288	П	0	_	0	0	0	0	0	-	69.0	0.00	0.00
10636	72	138	1	0	<b>-</b>	0	-	<del>, ,</del>	5	14	0	1.45	1.45	7.25
10712	7	15	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10713	170	354	2	0	<b>ç</b> 1	0	2	7	5	2	0	1.13	0.56	2.82
20124	103	197	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997 Offshore Functions

a · Offshore Exploration

b - Offshore Production

d · Offshore Drilling

(abd) - Combination of Above - Not Sep.

Кесог	ecordable Cases	Exte	Extent and Outcome of Injury and Illness  Lost Workday Cases Cases Involving Number Days Of Days Total Lost Away Days of	d Outcome of Injury a Lost Workday Cases Cases Involving Number Days of Days Away Away	and Illness s Number of Days of	Non-Fatal Cases Without		Incidence Rates  Fatal plus Lost Work Days Away Days Days	ncidence Rates  Fatal plus Lost Work Days Away Days Days
_		Wor	Workday From	_	Restricted	Lost	Total	Total   From Work   Away From	Away From
es	Illnesses Total Fatalities		Cases Work	Work	Activity	Workdays Cases	Cases	Cases	Work

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Total         6,109         12,815         126         131         0         90         67         994         360         41         2.04         1.05         15.51         4.60           14         230         652         7         0         7         0         36         32         114         8         14         2.36         1.51         5.38           24         2143         4234         50         0<								Onsnore	r uncti	suo					
522         7         0         7         0         4         4         12         18         3         2.68         1.53           4234         50         0	6,109	12,815	126	S	131	0	90	29	994	360	41	2.04	1.05	15.51	
4234         50         6         36         32         114         8         14         2.36         1.51           199         0	230	522	7	0	7	0	4	4	12	18	က	2.68	1.53	4.60	q
199         0	2143	4234	20	0	20	0	36	32	114	œ	14	2.36	1.51	5.38	(apd)
333         1         0         1         1         133         0         0.60         0.60           1380         8         1         9         0         6         1         53         184         3         1.30         0.14           384         4         0         4         0         6         1         162         0         3         2.08         0.14           453         8         0         4         1         4         68         3         3.53         0.44           2029         12         2         14         0         4         4         188         0         5         1.76         1.17           2029         12         2         14         0         4         4         188         0         5         1.76         1.17           406         0         <	89	199	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	(abd)
1380         8         1         9         0         6         1         53         184         3         1.30         0.14           384         4         0         4         0         1         1         162         0         3         2.08         0.52           453         8         0         8         0         4         4         68         5         1.38         0.39           2029         12         2         14         0         4         4         188         0         5         1.76         1.17           2029         12         2         14         0         4         4         188         0         6         1.17         0.39           681         6         0	160	333	1	0	7	0	7	1	133	0	0	09.0	09.0	79.88	(apd)
384         4         0         4         0         1         1         162         0         3         2.08         0.52           453         8         0         8         0         5         1         4         68         3         2.08         0.54           2029         12         2         14         0         9         4         4         68         6         1.38         0.39           681         6         0         6         4         4         112         38         2         1.76         1.17           126         5         1         6         0         4         4         112         38         2         6.35         6.35           698         6         0	616	1380	∞	-	6	0	9	-	53	184	အ	1.30	0.14	7.68	p'q
453         8         0         8         0         68         3         3.53         0.44           2029         12         2         14         0         9         4         9         6         5         1.38         0.39           681         6         0         6         0         4         4         188         0         2         1.76         1.17           126         5         1         6         0         4         4         112         38         0         2         1.17         1.17           57         0 <td>190</td> <td>384</td> <td>4</td> <td>0</td> <td>4</td> <td>0</td> <td>-</td> <td>1</td> <td>162</td> <td>0</td> <td>3</td> <td>2.08</td> <td>0.52</td> <td>84.38</td> <td>· a</td>	190	384	4	0	4	0	-	1	162	0	3	2.08	0.52	84.38	· a
2029         12         2         14         0         9         4         9         6         138         0.39           681         6         0         4         4         188         0         2         1.76         1.17           126         5         1         6         0         4         4         112         38         2         9.52         6.35           57         0	132	453	<b>∞</b>	0	80	0	2	1	4	89	က	3.53	0.44	1.77	(apd)
681 6 0 6 0 4 4 188 0 2 1.76 1.17 126 5 1 6 0 4 4 112 38 2 9.52 6.35 57 0 0 0 0 0 0 0 0 0 0 0 0 0.00 698 6 0 6 0 6 2 na na 0 1.72 0.57 4 0 0 0 0 0 0 0 0 0 0 0.00 26 3 0 3 0 3 0 2 16 0 1 23.08 15.38 82 4 0 4 0 3 3 25 0 13 9.76 7.32 20 0 0 0 0 0 0 0 0 0 0 0 0 0.00	916	2029	12	7	14	0	G	4	6	9	2	1.38	0.39	0.89	p'q
126         5         1         6         0         4         4         112         38         2         9.52         6.35           57         0         0         0         0         0         0         0         0         0           698         6         0         6         2         na         na         na         0.772         0.57           4         0         0         0         0         0         0         0         0.00         0.00           26         3         0         3         2         16         0         0         0         0         0         0         0           82         4         0         4         0         3         25         0         1         23.2         15.32           15         4         0         4         4         109         35         0<	327	681	9	0	9	0	4	4	188	0	2	1.76	1.17	55.21	, Q
57         0	61	126	2		9	0	4	4	112	38	2	9.52	6.35	177.78	p'q
698 6 0 6 0 6 2 na na 0 1.72 0.57 4 0 0 0 0 0 0 0 0 0.00 0.00 26 3 0 3 0 2 2 16 0 1 23.08 15.38 82 4 0 4 0 3 3 25 0 1 9.76 7.32 15 4 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0.00	24	57	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	(apd)
4         0	349	869	9	0	9	0	9	2	na	na	0	1.72	0.57	na	(abd)
26     3     0     3     2     16     0     1     23.08     15.38       82     4     0     4     0     3     3     25     0     1     9.76     7.32       15     4     0     4     4     109     35     0     53.33     53.33     1       20     0     0     0     0     0     0     0     0     0     0     0	21	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	q
82 4 0 4 0 3 3 25 0 1 9.76 7.32 15 4 0 4 0 4 4 109 35 0 53.33 53.33 1 20 0 0 0 0 0 0 0 0 0 0 0.00	12	26	က	0	က	0	87	7	16	0	1	23.08	15.38	123.08	(apd)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	43	82	4	0	4	0	ဗ	ന	25	0	1	9.76	7.32	86.09	(abd)
20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	က	15	4	0	4	0	4	4	109	32	0	53.33	53.33	1,453.33	q
	10	20	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	(apd)

Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997 Offshore Functions

		Rec	tecordable Case	es		Extent a	nd Outcome	Extent and Outcome of Injury and Illness	d Illness		Ir	Incidence Rates	8
							Lost Work	Lost Workday Cases					
							Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
							Involving	Involving Number of Number of Cases	Number of	Cases		Days Away Days	Days
Average	Hours					Total Lost	Days Away	Total Lost Days Away Days Away Days of	Days of	Without		From	Days Away
Company Number of	Worked					Workday	From	From	Restricted Lost	Lost	Total	Work	From
ees	(Thousands)	Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity	Activity Workdays	Cases	Cases	Work

Offshore Exploration
No data was reported for this function

	27.83	4.60	8.53	84.38	1.08	55.21	246.15	0.00	1,453.33		0.00	0.00	0.00	0.00
	0.95			0.52							00.00	0.00	0.00	0.00
	2.11	2.68	1.45	2.08	1.56	1.76	13.19	0.00	53.33		0.37	0.00	0.55	0.00
	17	က	က	က	4	2	7	0	0		I	0	-	0
	281	18	184	0	9	0	38	0	35		0	0	0	0
	645	12	53	162	6	188	112	0	109		0	0	0	0
uo	22	4	_	-	4	4	4	0	4	<b>b</b> n	0	0	0	0
Offshore Production	32	4	9	-	6	4	4	0	4	Offshore Drilling	0	0	0	0
fshore P	0	0	0	0	0	0	0	0	0	Offshore	0	0	0	0
Of	49	7	6	4	13	9	9	0	4		I	0		0
	က	0	_	0	-	0	_	0	0		I	0	-	0
	46	7	œ	4	12	9	2	0	4		0	0	0	0
	4,635	522	1,243	384	1,667	681	91	4	15		534	137	362	35
	2,165	230	553	190	805	327	44	2	က		254	63	174	17
	Total	14	41	28	66	106	10001	10713	20111		Total	41	66	10001

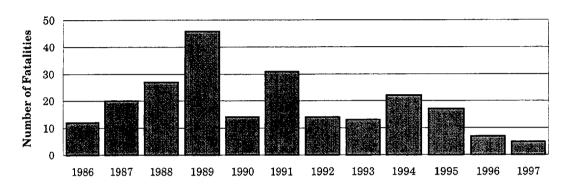
Covering Petroleum and Petrochemical Operations of Reporting Companies U.S. Occupational Injuries and Illnesses for 1997 Offshore Functions

		t Work	ays	Davs Away	From	Work
Rates		Fatal plus Lost Work	Days Away Days	m Dav	, E	
Incidence Rates		Fatal 1	Days A	From	Work	Cases
					Total	_
		Non-Fatal	Cases	Without	Lost	Workdays
d Illness			Number of	Days of	Restricted	Activity Workdays
Extent and Outcome of Injury and Illness	Lost Workday Cases		Involving Number of Number of Cases	Total Lost Days Away Days Away Days of	From	Work
nd Outcome	Lost Work	Cases	Involving	Days Away	From	Work
Extenta				Total Lost	Workday	
						Fatalities
ses						Total
Recordable Ca						Illnesses
Re						Injuries
				Hours	Worked	(Thousands)
				Average	Number of	Employees
					Company	Ð

				recor dable ous	1000		LANGIIL	na Caccome	Execute and Outcome of Injury and Inness	a muess		<b>=</b>	Incidence Kates	8
								Lost Workday Cases	day Cases					
								Cases			Non-Fatal		Fatal plus Lost Work	Lost Work
		,						Involving	Involving   Number of   Number of	Number of	Cases		Days Away	Days
7	Average	Hours					Total Lost	Days Away	Total Lost Days Away Days Away Days of	Days of	Without		From	Days Away
Company		_					Workday	From	From	Restricted	Lost	Total		From
a.	Employees	(Thousands)	Injuries	Illnesses	Total	Fatalities	Cases	Work	Work	Activity	Workdays	Cases	Cases	Work
				Ŭ	ombina	Combinations of Above Not Separated	Above	Not Sepa	arated					
								Ī						
Total	3,690	7,646	80	I	81	0	28	45	349	79	23	2.12	1.18	9.13
24	2,143	4,234	50	0	50	0	36	32	114	α	7	98 6	1 A	00
27			C	· c		• •	? <	2	1		<b>†</b> <	6.00	1.01	0.09
; c			7	> (	> '	•	>	>	>	>	>	0.00	0.00	0.00
26			<b>⊣</b>	0	1	0	-		133	0	0	09.0	09'0	79.88
65			œ	0	∞	0	5	-	4	89	က	3,53	0.44	1.77
10573	24	57	0	0	0	0	0	0	0	0	· C	0.00	000	000
10586			9	0	9	0	9	2	e C	, מ	· c	1 79	0.00	5 5
20032	12	9.6	C.	<b>-</b>	cr	•	· c		-		ν τ	7-:-	5 6	ייים
			•	>	5	>	4	4	91	>	<b>-</b>	23.08	15.38	123.08
20038	43	82	4	0	4	0	က	က	25	0	<del></del>	9.76	7.32	60.98
20124	10	20	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

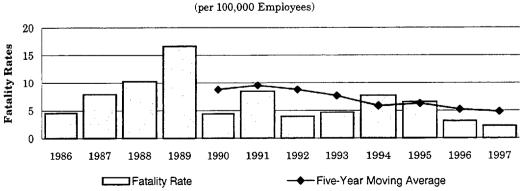
# Summary of Fatal Injuries in the Petroleum Industry as Reported to the American Petroleum Institute for 1997

One hundred and thirty-nine oil and gas companies and their subsidiaries, employing 231,332 workers reported 5 on-duty fatal accidents during 1997. This is equivalent to one fatality for every 46,266 workers employed. Comparatively, in 1996, the industry experienced one fatality for every 32,601 employees. The graph below shows the number of fatalities reported in this publication for the last 12 years.



Reported U.S. Occupational Fatalities in the Petroleum Industry

The change in the number of employees represented by this survey every year accounts for some of the variation in the data. Therefore, the following graph shows the fatality rate<sup>1</sup> for the past 12 years. However, as with any data, the factors that cause variations over time can also be cyclical, seasonal, trend, or irregular (random). Any combination of these factors can further cloud any visual interpretation of the data. Because this is annual data, cyclical and seasonal variations may be discounted. By calculating a moving average<sup>2</sup> for each year, we can smooth-out the effect of irregular variations and thus observe a trend. The trend in the rate of fatalities in the petroleum industry continues to improve as is shown below by the five-year moving average line.



Reported U.S. Occupational Fatality Rates in the Petroleum Industry

<sup>&</sup>lt;sup>1</sup> Fatality rate = (number of fatalities\*100,000)/number of employees. This is the number of fatalities per 100,000 employees.

<sup>&</sup>lt;sup>2</sup> A five-year moving average for a given year is the average of that year and the 4 preceding years. For example, the 5-year moving average for 1990, using rounded numbers, shown on the graph equals (4+17+10+8+5)/5=8.8.

1997—Summary of On-Duty Fatal Injuries in the Petroleum Industry—1997
As Reported to the American Petroleum Institute

#### **FATALITIES**

Four companies reported experiencing at least one fatality during 1997. Each of them submitted detailed information on the circumstances surrounding the five on-duty fatalities reported to API.

API has published information provided by member companies on fatal accidents in the petroleum industry since 1933. Each incident is described in a brief narrative and is intended to provide information that could be used to avoid the occurrence of similar accidents in the future.

#### REFINING

#### 01/21/97 — Fire and Explosion

At approximately 7:41 p.m. on January 21, 1997, a pipe ruptured at a hydrocracker unit which caused an explosion and fire. This incident caused the fatality of a hydrocracker operator and forty-six minor injuries were reported by other employees and contractors in the days following the incident. No significant off-site impacts were reported.<sup>3</sup>

The pipe ruptured as a result of being subjected to excessively high temperature and not being properly depressured, per emergency procedures. Cause for the excessive temperature was a very high rapid temperature excursion<sup>4</sup> which started in catalyst bed 4 of Reactor 3 in Stage 2 of the hydrocracker. Although, no single or conclusive cause for the temperature excursion could be determined after the explosion, all possible causes for the temperature excursion were identified. Possible reasons identified for the temperature excursion include: spontaneous formation of a "hot spot" in bed 4; the flow characteristics of fluids in bed 4; or the possibility of uneven liquid distribution within the bed.

A contributing cause for the pipe rupture was that the operators did not depressure the unit as specified in emergency procedures for safely controlling temperature excursions. Reasons for the operators not depressuring the unit include: the incident occurred very rapidly and was outside previous experiences; they did not believe the control room temperature indicators; and they were confused and distracted by process information which was inconsistent with past temperature excursion experiences.

Corrective actions were identified to respond to the possible causes for the reactor temperature excursion. These actions include installation of new controls which will automatically depressure the unit in the event of a future high temperature excursion, and retraining of operations personnel.

This report summarizes the results of a 3 month refinery investigation into the causes of this incident. The first section of the report describes the investigation procedure. The next several sections describe the physical design and operation of the hydrocracker unit, as well as its control system, operational history, operator staffing and training, and the events leading up to the incident itself. The last section of the report presents conclusions and recommendations based on the investigation results.

<sup>&</sup>lt;sup>3</sup> Details of the emergency response and notifications at the time of the incident are contained in the 72-hour report made by the company to the county Department of Health Services.

<sup>&</sup>lt;sup>4</sup> A temperature excursion is an episode in which temperatures deviate outside of a normal operating range.

STD.API/PETRO PUBL 2376-ENGL 1998 - 0732290 0606229 743 -

1997—Summary of On-Duty Fatal Injuries in the Petroleum Industry—1997 As Reported to the American Petroleum Institute

#### 06/20/97 — **Drowning**

At approximately 3:15 a.m. an employee fell into the water at an asphalt facility wharf and subsequently died. There were no witnesses. No other incidents of this kind are known to have occurred previously at the facility.

Because there were no witnesses, the team was unable to ascertain what happened. It appears, however, that our employee lost his balance, tripped or stumbled and fell into the water. He was not wearing a personal flotation device.

Shortly, before, our employee and a crewmember of the barge had finished tying the barge up to the wharf. Our employee told the crewman he was going to walk south to Berth 3 at the wharf to assist in tying up the second barge just arriving. The two parted company, the crewman moving forward (north) on the barge to perform some checks before loading cargo and the employee going south toward Berth 3. A short while later the crewman heard a noise, noticed our employee was not visible and began walking aft on the barge to investigate. When he reached the Berth 4 loading manifold area he saw our employee in the water between the wharf and the barge and went to get assistance. Our employee was pulled from the water but emergency medical personnel were unable to revive him.

The employee was not wearing a personal flotation device (PFD). Given the nature of his work activity and the water hazard he should have been wearing a PFD.

#### **MARKETING RETAIL**

#### 05/20/97 — Motor Vehicle Accident

An employee was working at a terminal installing computer equipment and was returning at 9:25 p.m. on May 20, 1997 he was involved in a motor vehicle accident and subsequently died from injuries sustained. Our employee was traveling north on Interstate 5 when a tractor trailer truck traveling South on I-5 performed an illegal U-turn through the median onto the northbound I-5. At the time of impact the tractor trailer was perpendicular to northbound traffic flow. Our employee hit the truck broadside at a full rate of speed. The tractor trailer had none of the legally required side reflectors, this area of the freeway is not lit, the truck was not visible. The truck driver was cited for causing this incident with a combination of an illegal U-turn and insufficient lighting on his truck.

#### 05/31/97 — Murder

An employee was shot by an ex-employee. The employee died at the scene. The assailant then committed suicide. Motive of the assailant is unknown.

#### PIPELINE LIQUID

#### 06/16/97 — Struck By An Unknown Object

An employee was mowing grass with a tractor when he was struck by an unknown object which lodged behind his left knee. The object could not be removed surgically and caused a blood clot and heart attack ten (10) days later. Source of the object is unknown, but it did not come from the mowing operation. Additional protective equipment was recommended by the investigation.

# Appendix A

### **Participating Companies** Alpha Listing

Company ID	Company Name
14	ARCO
10621	All American Pipeline Company
233	Alyeska Pipeline Service Company
	Amerada Hess Corporation
	American Refining Group Inc.
106	Amoco Corporation
90106	Amoco Pipeline Company
20038	Anadarko Petroleum Corporation
20037	Anschutz Ranch East Pipeline Inc.
13	Ashland Inc.
90013	Ashland Pipeline
	BHP Petroleum (Americas) Inc.
10001	BP America
90001	BP Oil Pipeline Company
10712	BWOC Inc.
99421	Badger Pipeline Company
	Big West Oil/Flying J Inc.
17	<b>Buckeye Pipe Line Company</b>
	Burlington Resources Inc.
10703	Butte Pipe Line Company
10421	CITGO Petroleum Corporation
90421	CITGO Pipeline Company
93421	CITGO Products Pipeline Company
19	Cabot Oil & Gas Corporation
10015	Calnev Pipe Line Company
	Carnegie Natural Gas Company
	Cenex Pipeline Company
10014	Central Florida Pipeline Corporation
10203	Charles B. Wilson Jr. Inc.
30103	Chermac Energy Corporation
24	Chevron Corporation
90024	Chevron Pipe Line Company
118	Chicap Pipeline
	Ciniza Pipe Line Company
	Clearfield Energy Inc.
10403	Collins Pipeline Company
29	Colonial Pipeline Company

# Appendix A

## **Participating Companies** Alpha Listing

Company ID	Company Name
31	Columbia Energy Group
32	Conoco Inc.
	Consumer Gasoline Stations Inc.
33	Cook Inlet Pipe Line Company
10546	Cross Oil Refining & Marketing Inc.
	Dearing Inc.
	Devon Energy Corporation
	Dixie Pipeline Company
260	Dome Pipeline Corporation
	EEC Inc.
	ERGON Inc.
	Eberly & Meade Inc.
	EnergyPro Inc.
10620	Enterprise Products Company
20111	Ewing Bank Pipeline Company
	Excalibur Exploration
38	Explorer Pipeline Company
41	Exxon Company U.S.A.
43	Farmland Industries Inc.
11	Fina Oil & Chemical Company
	Fina Oil & Chemical/Pipeline
	H & C Oil Operating Inc.
	Hanley Petroleum Inc.
	Heartland Exploration Inc.
	Hellman Properties LLC
20032	Howell Petroleum Corporation
	Hunt Oil Company
	Jack L. Phillips
	Jacobus Company
	James K. Anderson Inc.
	Justiss Oil Company Inc.
	Kaneb Pipe Line Company
57	Kentucky Hydrocarbon
58	Kerr-McGee O&G
10570	LOOP LLC
60	Lakehead Pipe Line Company Inc.
10092	Lone Mountain Production Company

# Appendix A

### Participating Companies **Alpha Listing**

Company ID	Company Name
10626	Lyondell Citgo Refining Company
	M. D. Abel Company
	Mack Energy Corporation
65	Marathon Oil Company
90065	Marathon Pipe Line Company
	McGowan Working Partners
10622	Mid-America Pipeline Company
	Miller Oil Company
	Mitchell Energy Corporation
10420	Mobil Oil Corporation
	Mobil Pipeline
10636	Mustang Fuel Corporation
10575	National Cooperative Refinery Association
	Navajo Refining Co Pipeline Division
27	Occidental Oil & Gas Corporation
10532	Oiltanking Houston Inc.
10544	Olympic Pipe Line Company
	Oryx Energy Company
10710	Paramount Petroleum Corporation
40.504	Patina Oil & Gas Corporation
10586	Pennzoil Company
90	Phillips Petroleum Company
01	Placid Refining Company
91	Plantation Pipe Line Company
20124	Pogo Producing Company
93	Portland Pipe Line Corporation Precision Operating Inc.
74	Questar Pipeline Company
20050	Razorback Pipeline Company
20030	Royal Petroleum Corporation
	Santa Fe Energy Resources
239	Santa Fe Pacific Pipeline Partners
237	Seadrift Pipeline Company
10713	Seagull Energy Corporation
10560	Shakespeare Oil Company Inc.
99	Shell Oil Company
90099	Shell Pipe Line Company
	• • •

# Appendix A

## **Participating Companies Alpha Listing**

Company ID	Company Name
10514	Shepler & Thomas Inc.
	Somerset Refinery
10651	Southland Oil Co - Lumberton
10650	Southland Oil Co - Sandersville
10652	Southland Oil Co - Vicksburg
	Stokes Production
10714	TEPPCO
261	TEPSCO/Tellepsen Pipeline Services Company
109	Texaco Inc.
	Three B Oil Company
20016	Thums Long Beach Company
	Tipperary Oil & Gas Corporation
139	Tosco Refining Company
242	Trans Mountain Oil Pipe Line
30101	TransMontaigne Pipeline Inc.
	Tripledee Drilling Company
	UOP Inc.
10573	Union Pacific Resources
	Union Texas Petrochemicals
20029	United Refining Company
10716	Valero Refining Company
	Venada National
	Walter Duncan Inc.
10204	Weal Drilling Company Inc.
	Westico Energy Company
126	Williams Pipe Line Company
30111	Wynnewood Refining Company
	Wyoming Pipeline Company

# Appendix B

#### **Participating Companies Numeric Listing**

(list includes only companies that agreed to have their numbers published individually) (ID greater than 90000 represents a subsidiary of a large company. Subsidiary numbers are not included in totals)

#### Company ID Company Name

- 11 Fina Oil & Chemical Company
- Ashland Inc. 13
- **ARCO** 14
- 17 **Buckeye Pipe Line Company**
- 19 Cabot Oil & Gas Corporation
- 24 **Chevron Corporation**
- 27 Occidental Oil & Gas Corporation
- 29 Colonial Pipeline Company
- 31 Columbia Energy Group
- 32 Conoco Inc.
- 33 **Cook Inlet Pipe Line Company**
- 38 **Explorer Pipeline Company**
- 41 Exxon Company U.S.A.
- 43 Farmland Industries Inc.
- 57 Kentucky Hydrocarbon
- 58 Kerr-McGee O&G
- Lakehead Pipe Line Company Inc. 60
- **Marathon Oil Company** 65
- 74 **Questar Pipeline Company**
- 90 Phillips Petroleum Company
- **Plantation Pipe Line Company** 91
- 93 **Portland Pipe Line Corporation**
- 99 **Shell Oil Company**
- **Amoco Corporation** 106
- 109 Texaco Inc.
- 118 Chicap Pipeline
- 126 Williams Pipe Line Company
- 139 **Tosco Refining Company**
- 233 Alyeska Pipeline Service Company
- 239 Santa Fe Pacific Pipeline Partners
- 242 Trans Mountain Oil Pipe Line
- **Dome Pipeline Corp** 260
- **TEPSCO/Tellepsen Pipeline Services Company** 261
- 10001 **BP** America
- 10014 **Central Florida Pipeline Corporation**
- 10015 **Calnev Pipe Line Company**
- 10092 Lone Mountain Production Company

# Appendix B

### Participating Companies **Numeric Listing**

Company ID	Company Name
10203	Charles B. Wilson Jr. Inc.
10204	Weal Drilling Company Inc.
10403	Collins Pipeline Company
10420	Mobil Oil Corporation
10421	CITGO Petroleum Corporation
10514	Shepler & Thomas Inc.
10532	Oiltanking Houston Inc.
10544	Olympic Pipe Line Company
10546	Cross Oil Refining & Marketing Inc.
10560	Shakespeare Oil Company Inc.
10570	LOOP LLC
10573	Union Pacific Resources
10575	National Cooperative Refinery Association
10586	Pennzoil Company
10620	Enterprise Products Company
10621	All American Pipeline Company
10622	Mid-America Pipeline Company
10626	Lyondell Citgo Refining Company
10636	Mustang Fuel Corporation
10650	Southland Oil Co - Sandersville
10651	Southland Oil Co - Lumberton
10652	Southland Oil Co - Vicksburg
10703	Butte Pipe Line Company
10710	Paramount Petroleum Corporation
10712	BWOC Inc.
10713	Seagull Energy Corporation
10714	TEPPCO
10716	Valero Refining Company
20016	Thums Long Beach Company
20029	United Refining Company
20032	Howell Petroleum Corporation  Anschutz Ranch East Pipeline Inc.
20037	
20038	Anadarko Petroleum Corporation
20050	Razorback Pipeline Company
20111 20124	Ewing Bank Pipeline Company Pogo Producing Company
30101	TransMontaigne Pipeline Inc.
20101	Transwinkaighe ripeime inc.

# Appendix B

### **Participating Companies Numeric Listing**

Company ID	Company Name
30103	Chermac Energy Corporation
30111	Wynnewood Refining Company
90001	BP Oil Pipeline Company
90013	Ashland Pipeline
90024	Chevron Pipe Line Company
90065	Marathon Pipe Line Company
90099	Shell Pipe Line Company
90106	Amoco Pipeline Company
90421	CITGO Pipeline Company
93421	CITGO Products Pipeline Company
99421	Badger Pipeline Company

# Appendix C

(list includes only companies that agreed to have their numbers published individually)

	Hours Worked or Exposure Hours per Day	Duty	Cycle	
Company ID	While on Duty	Days On	Days Off	
24	12	7	7	
27	16	7	7	
32	12	7	7	
41	12	7	7	
58	12	7	7	
65	12	7	7	
10001	12	7	7	
10586	12	7	7	
10713	12	7	7	
20032	12	7	7	
20038	12	7	7	
20111	12	7	7	
20124	na	na	na	

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