PUBLIC

UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION
WASHINGTON D.C.

In the Matter of UNION OIL COMPANY OF CALIFORNIA, a corporation.	Docket No. 9305

RESPONDENT'S PROPOSED FINDINGS OF FACT

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TABLE OF CONTENTS

Page

Page

Page

Page

Page

Page

INTRODUCTION

I. FEDERAL TRADE COMMISSION COMPLAINT

The Federal Trade Commission ("FTC") issued its Complaint in this matter on March 4, 2003. The Complaint charges that Respondent, Union Oil Company of California ("Unocal"), a corporation, violated Section 5 of the Federal Trade Commission Act ("FTC Act"), 15 U.S.C. § 45 as amended.

The Complaint charges Unocal with three violations. It alleges that through a "pattern of anticompetitive acts and practices that continues even today, Unocal has illegally monopolized, attempted to monopolize, and otherwise engaged in unfair methods of competition in both the technology market for the production and supply of CARB-compliant "summer-time" RFG and the downstream CARB "summer-time" reformulated gasoline RFG product market." Complaint ¶¶ 1, 99-103. To prove exclusionary conduct, the Complaint alleges that Unocal defrauded three separate entities with respect to the status of its intellectual property rights: the California Air Resources Board ("CARB"), the Auto/Oil Air Quality Improvement Research Program ("Auto/Oil"), and the Western States Petroleum Association ("WSPA"). Complaint ¶¶ 5, 76, 81, & 85.

Specifically, the Complaint alleges that Unocal created the false and misleading impression with CARB, Auto/Oil and WSPA that Unocal had no actual or potential intellectual property claims related to RFG. *E.g.*, Complaint ¶¶ 3, 58, 79, 82, & 86. Unocal's "fraud," according to the Complaint, caused CARB to adopt regulations that overlapped with patent claims, which eventually issued to Unocal on certain RFG compositions. *Id.* (The Complaint refers to the patent claims as "Unocal's concealed patent claims." Complaint ¶ 45.) For examples of this "overlap," the

Complaint cites CARB's inclusion of a specification for a gasoline property known as "T50" in its Phase 2 RFG regulations and its adoption of a "predictive model" that included T50 as one of the parameters. Complaint 45. It is alleged that had Unocal disclosed to CARB or others that it had filed patent application(s) relating to RFG compositions, CARB would have adopted different, alternative regulations so as to avoid Unocal's intellectual property claims. *E.g.*, Complaint ¶¶ 5, 80. Essentially, the Complaint alleges that by failing to disclose its pending intellectual property rights, Unocal perpetrated a false and misleading impression that, had the truth been known, would have impacted CARB's analysis of the cost-effectiveness of the Phase 2 RFG regulations. Complaint ¶¶ 1, 3, 46, 48, 78, & 79.

The Complaint asserts two relevant markets: (1) the worldwide market for technology claimed in patent application No. 07/628,488 (filed on December 13, 1990) and Unocal's issued RFG patents, and any alternative technologies that enable firms to refine, produce, and supply CARB-compliant "summer-time" RFG for sale in California at comparable or lower cost, and comparable or higher effectiveness, without practicing the Unocal technology and (2) the market for CARB-compliant "summer-time" RFG produced and supplied for sale in California. Complaint ¶¶ 74-75.

II. RESPONDENT'S ANSWER

Unocal filed its Answer on March 21, 2003. In its Answer, Unocal denies all material allegations of the Complaint, including, but not limited to, allegations that it engaged in any wrongful conduct, acts or practices or engaged in bad faith or deceptive conduct. The Answer states that Unocal truthfully described data from its RFG research as "non-proprietary" in order to lift a confidentiality designation that it had previously given to the data; and that this was in response to

a specific request from CARB to lift the confidentiality designation. Answer ¶ 2a. The Answer states that "CARB never sought any disclosures, and Unocal never made any representations, regarding inventions or intellectual property rights pertaining to inventions." Answer ¶ 2a. CARB officials had previously "testified under oath that Unocal's representations to CARB were neither deceptive nor misleading." *Id.* Further, Unocal denies in its Answer that any of Unocal's statements to CARB staff caused CARB to adopt its Phase 2 regulations. Answer ¶ 45. To the contrary, Unocal asserts that it opposed the regulations and that "CARB officially acknowledged Unocal's opposition in its Statement of Reasons . . . ." *Id.*

In addition to denying that Unocal made any misrepresentations to CARB, Unocal's Answer also denies any wrongful conduct toward or misrepresentations to Auto/Oil or WSPA. Unocal "denies that it ever communicated to 'other participants' in CARB's rulemaking that its research results were in the public domain or that Unocal did not have or would not enforce potential intellectual property rights." Answer ¶ 2a; *see also id.* ¶¶ 54, 58.

Unocal's Answer also denies the propriety of Complaint Counsel's alleged relevant markets. Answer ¶¶ 74-75. Specifically, with respect to Complaint Counsel's alleged "summer-time" RFG market, Unocal asserts that it does not even participate in that market. *Id.* ¶ 75; *see also id.* ¶ 1 ("Unocal is legally incapable of monopolizing or adversely affecting competition in a market in which it does not even participate.")

Finally, Unocal's Answer asserts numerous defenses. These include, but are not limited to: that Unocal's lobbying activity was constitutionally protected under the *Noerr-Pennington* doctrine and First Amendment to the U.S. Constitution; that Complaint Counsel's action is barred by the five-year statute of limitations specified in 28 U.S.C. § 2462; and that the Commission lacks jurisdiction

to decide the substantive questions of patent law that are necessary to find in Complaint Counsel's favor in this matter. Answer at Introduction; ¶¶ 1, 65, 68, 95, 96; Additional Defenses.

III. ISSUES PRESENTED

The issues presented in this case are:

(1) Whether Respondent engaged in a pattern of deceptive, exclusionary conduct by committing fraud on CARB, Auto/Oil and WSPA;
(2) Whether Unocal utilized such conduct to capture, obtain, or dangerously threaten to obtain an unlawful monopoly in the alleged markets;
(3) Whether Respondent's conduct is immune from antitrust liability based on the *Noerr-Pennington* doctrine;
(4) Whether Complaint Counsel's Complaint is barred by the statute of limitations; and
(5) Whether Complaint Counsel may obtain the proposed remedy?

IV. PROCEDURAL BACKGROUND

Upon issuance of the FTC's Complaint, the case was assigned to Administrative Law Judge D. Michael Chappell. On March 28, 2003 (after Unocal filed its Answer), Unocal filed two Motions for Dismissal. *See* Union Oil Company of California's Motion for Dismissal of the Complaint and Memorandum in Support Based Upon Immunity Under *Noerr-Pennington* and Union Oil Company of California's Motion for Dismissal of the Complaint and Memorandum in Support for Failure to Make Sufficient Allegations That Respondent Possesses or Dangerously Threatens to Possess Monopoly Power. On November 25, 2003, Judge Chappell issued an Initial Decision granting in part both of Unocal's motions and dismissing the Complaint in its entirety.

Complaint Counsel appealed. On July 7, 2004, the Commission reversed and vacated the Initial Decision, ordering that this matter be remanded to an Administrative Law Judge for further proceedings as soon as practicable. In so doing, the Commission rejected the position that the conduct alleged is protected by the *Noerr-Pennington* doctrine on the face of the Complaint. It also

rejected the idea that the FTC lacks jurisdiction to decide this matter. The Commission's Opinion instructed the Administrative Law Judge to "conduct appropriate proceedings for resolving disputed facts and substantiating or rejecting the allegations of the Complaint. Unocal, of course, may raise all appropriate defenses, including any renewed arguments concerning *Noerr-Pennington* protections, based on the forthcoming factual record." *In re Union Oil Co. of Cal.*, No. 9305, slip. op. at 54-55 (FTC July 6, 2004). The adjudicative hearing followed.

FINDINGS OF FACT[1]

I. RESPONDENT AND OTHER INTERESTED PARTIES

A. Unocal

1. Union Oil Company of California is a public corporation organized, existing, and doing business under, and by virtue of, the laws of California since October 17, 1890.

2. Its office and principal place of business are located at 2141 Rosecrans Avenue, Suite 4000, El Segundo, California 90245.

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[1] The following citation conventions are used throughout these findings:

Depositions: Are cited as Deponent Dep. (Affiliation), __/__/__, at page:line-page:line.

Investigational Hearings: Are cited as Deponent IH Dep.(Affiliation), __/__/__, at page:line-page:line.

Documents: Are referred to by RX or CX number. Where the document is more than several pages or where the document is not cited to generally, a Bates (control) number is also provided. Where no Bates (control) number appeared on the document as produced, then the document is cited by using the control numbers that have been electronically stamped in the left-hand corner of the document, *e.g.*, RX 54 at 005.

Respondent's Proposed Findings: Are Cited as RPF followed by the paragraph of the cited finding, *e.g.*, RPF 1-10.

3. Since March 18, 1983, Union Oil Company of California has done business under the name Unocal. Unocal is a wholly-owned, operating subsidiary of Unocal Corporation, a holding company incorporated in Delaware.

4. Unocal currently does business in California, Washington, D.C., Texas, Alabama, Louisiana, Alaska, New Mexico, Illinois and Utah.

5. Prior to 1997, Unocal was engaged in the business of both refining and sale of petroleum products, including motor gasoline. Unocal sold the assets of its refining businesses in March of 1997 to TOSCO. Answer ¶ 13.

6. Since 1997, Unocal has not been in the business of refining petroleum. It has also not been in the business of selling motor gasoline.

7. Unocal is the owner by assignment of five patents related to reformulated gasoline ("RFG patents") which are the subject of Complaint Counsel's Complaint. These include U.S. Letters Patent No. 5,288,393 ("'393"), issued on February 22, 1994; No. 5,593,567 ("'567"), issued on January 14, 1997; No. 5,653,866 ("'866"), issued on August 5, 1997; No. 5,837,126 ("'126"), issued on November 17, 1998; and No. 6,030,521 ("'521"), issued on February 29, 2000. Answer ¶ 15.

B. The California Air Resources Board

8. The California Air Resources Board ("CARB") is a department of the California Environmental Protection Agency, charged with, among other things, promulgation of regulations relating to clean air. Answer ¶ 16. Formed in 1967, CARB is the primary state regulatory agency for air pollution problems in the State of California. Gellhorn Rpt. at 8.

9. CARB's umbrella mission is "to promote and protect the public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants, while recognizing and considering the effects on the economy of the state." RX 336 at 003 (CARB 2001 Strategic Plan).

10. In 1988, the California Clean Air Act was amended to specifically require CARB to take certain actions to reduce harmful emissions from gasoline. The Act mandated that CARB achieve this goal through rulemaking proceedings, such that harmful emissions be reduced to certain levels by no later than December 31, 2000. Gellhorn Rpt. at 9.

11. Since amendment of the California Clean Air Act in 1988, CARB has adopted regulations specifying reformulated gasoline compositions for motor vehicles in three separate rulemakings. The first, the so-called "Phase 1" reformulated gasoline rules, adopted in 1990 and effective in 1992, imposed: (1) allowable limits for a gasoline property known as Reid Vapor Pressure; (2) requirements for certain deposit control additives; and (3) a ban on the sale or use of leaded gasoline. The Phase 2 reformulated gasoline regulations, which are most directly implicated in this proceeding, were adopted in November 1991 and became effective in March 1996. Phase 3 RFG regulations were scheduled for implementation on December 31, 2003, and include a ban on a gasoline additive known as MTBE. Gellhorn Rpt. at 9-10.

C. The Refiners

12. At the time of the 1991 rulemaking proceedings at issue in this case (which resulted in the Phase 2 regulations), there were 30 different refineries producing gasoline for sale and/or use in California. *See* RX 5 at CARB0000832; Aguila Dep. (CARB), 7/24/03, at 54:24-55:02.

13. Besides Unocal, six of the major refiners in the United States included Atlantic Richfield Company ("ARCO"), Chevron, Exxon, Mobil, Shell and Texaco. At the time of the adoption of the Phase 2 regulations, each of these refiners was involved in two specific industry groups: Auto/Oil and Western States Petroleum Association.

1) Auto/Oil

14. In 1989, a group of fourteen oil companies (including Unocal), together with the three major United States auto manufacturers (GM, Ford, Chrysler) formed a joint research project under the National Cooperative Research Act of 1984. This project was known as the Auto/Oil Air Quality Improvement Research Program ("Auto/Oil" or "the Program"). RX 226 at U 0003027.

15. Auto/Oil's objective was to plan and carry out "research and tests designed to measure and evaluate automobile emissions and the potential improvements in air quality achievable through use of reformulated gasolines. . . ." RX 226 at U 0003029.

16. The data generated from this research and testing was to be provided to "state regulators in their efforts to reduce total emissions from motor vehicles." RX 226 at U 0003028.

2) Western States Petroleum Association

17. Founded in 1907, the Western States Petroleum Association ("WSPA") is a non-profit trade association that represents approximately 30 companies that account for the bulk of petroleum exploration, production, refining, transportation and marketing in six Western states (Arizona, California, Hawaii, Nevada, Oregon and Washington). Unocal was formerly a WSPA member.

18. The purpose of WSPA is [redacted]

D. Description of Witnesses

19. **Aguila, James (CARB):** At the time of the Phase 2 rulemaking process, Mr. Aguila was an Associate Air Resources Engineer. Aguila Dep. (CARB), 7/24/03, at 16:1-5. He was assigned to perform the cost-effectiveness analysis of the proposed Phase 2 regulations. Aguila Dep. (CARB), 7/24/03, at 16:10-18:12. Currently, he works for CARB as the manager for the Substance Evaluation Section. Aguila Dep. (CARB), 7/24/03, at 5:20-23.

20. **Banducci, Ronald (Shell):** Mr. Banducci was the manager of Shell's Martinez refinery and also the former Vice President of Refining. Banducci Dep. (Shell), 8/27/03, at 5:23-6:19. Mr. Banducci is now retired. *Id.* at 7:1-3.

21. **Bea, Don (Chevron):** Throughout the 1990s, Mr. Bea was a senior staff engineer with Chevron U.S.A.'s Strategic Planning & Business Evaluation Group. Bea Dep. (Chevron), 9/3/03, at 16:20-24, 17:16-25. He was also on the WSPA fuels subcommittee. Bea Dep. (Chevron), 9/3/03, at 17:14-25. He was involved with CARB's Phase 2 rulemaking process, and unofficially dubbed "gasoline issue manager." Bea Dep. (Chevron), 9/3/03, at 17:6-18:22. He is now retired. Bea Dep. (Chevron), 9/3/03, at 10:19-20.

22. **Beach, Roger (Unocal):** Mr. Beach was the president of Unocal's Refining and Marketing Division (also known as the 76 Products Division) from 1986 to 1991, and then its Chief Operating Officer until 1992, when he became the Chief Executive Officer. Beach IH Dep. (Unocal)

1/23/03, at 8:10-9:20. Mr. Beach created the Fuels Issues Team, headed by Dennis Lamb of Unocal, to address fuels-related environmental regulations. Beach IH Dep. (Unocal), 1/23/03, at 10:5-22.

23. **Boone, Mark (Texaco):** Mr. Boone was a member of the planning group at Texaco from 1985 to 2000. Boone Dep. (Texaco), 6/24/03, at 15:25-16:4. In the group, he served as an operations planner, which involved calculating optimal performance. Boone Dep. (Texaco), 6/24/03, at 15:25-16:19. He also worked as a five-year planner and a blending planner. Boone Dep. (Texaco), 6/24/03, at 16:14-17:18. He is currently the manager at Shell's Bakersfield refinery. Boone Dep. (Texaco), 6/24/03, at 9:1-12.

24. **Boyd, James (CARB):** Mr. Boyd was the Executive Officer of CARB from 1982 to 1996. Boyd Dep. (CARB), 8/22/03, at 8:25-9:3. He is currently a member of the California Energy Commission. Boyd Dep. (CARB), 8/22/03, at 7:24-8:6.

25. **Chan, Nelson (CARB):** Mr. Chan is a CARB staff member. Chan Dep. (CARB), 8/29/03, at 4:13-24. He was assigned to work on the Phase 1 and Phase 2 regulations. Chan Dep. (CARB), 8/29/03, at 41:11-42:12. During Phase 2, Mr. Chan estimated the emissions benefits of the proposed regulations and authored part of the Technical Support Document. Chan Dep. (CARB), 8/29/03, at 43:23-46:1. He still works for CARB, testing fuels for compliance with the current predictive model. Chan Dep. (CARB), 8/29/03, at 4:22-24, 5:17-6:2.

26. **Cleary, Kevin (CARB):** Mr. Cleary was an Air Resources Engineer for CARB. during the Phase 1 and Phase 2 regulations, and is the person most familiar with the development of a predictive model for emissions reductions. Cleary Dep. (CARB), 8/7/03, at 5:14-7:24. He is currently an Air Resources Engineer at CARB. Cleary Dep. (CARB), 8/7/03, at 5:14-15.

27. **Clossey, Timothy (ARCO):** During the Phase 2 rulemaking, Mr. Clossey was the manager of ARCO's [redacted] Mr. Clossey is currently a self-employed consultant. Clossey Dep. (ARCO), 5/21/03, at 13:8-15.

28. **Courtis, John (CARB):** Mr. Courtis worked at CARB from 1979 to 1998. Courtis Dep. (CARB), 8/28/03, at 4:19-25. During the Phase 2 regulation process, he supervised Jim Aguila's work on the cost-effectiveness analysis. Courtis Dep. (CARB), 8/28/03, at 6:25-8:4. He also wrote sections of the Technical Support Document. Courtis Dep. (CARB), 8/28/03, at 36:4-37:11. Currently, Mr. Courtis owns his own environmental management and consulting company. Courtis Dep. (CARB), 8/28/03, at 4:11-18.

29. **Croudace, Michael (Unocal):** Dr. Croudace was a Unocal scientist and is a co-inventor, with Dr. Peter Jessup, of the inventions claimed by the various patents at issue in this matter. Croudace IH Dep. (Unocal), 2/20/02, at 13:17-14:22, 15:17-16:13, 174:2-13. Before the time of the Phase 2 rulemaking, he and Dr. Peter Jessup were assigned to research reducing emissions in gasoline fuel. Croudace IH Dep. (Unocal), 2/20/02, at 15:13-16:12. He currently works for the Petroleum Analyzer Company selling and developing analytical equipment. Croudace IH Dep. (Unocal), 2/20/02, at 8:19-24.

30. **Cunningham, Robert (Turner Mason):** Turner Mason is a consulting firm in which Mr. Cunningham is a profit-earning partner. Cunningham Dep. (Turner Mason), 8/25/03, at 6:14-22.

At the time of the CARB Phase 2 regulations, Mr. Cunningham studied the cost of compliance with the proposed regulations for both Auto/Oil and WSPA. Cunningham Dep. (Turner Mason), 8/25/03, at 45:18-24, 123:12-19. He presented his results to CARB in November 1991. Cunningham Dep. (Turner Mason), 8/25/03, at 162:11-163:4.

31. **Eizember, Thomas (Exxon/ExxonMobil):** Mr. Eizember started at Exxon in 1976 and currently works at the now-merged ExxonMobil company as a Business Planning Executive in Refining & Supply. Eizember Dep. (Exxon/ExxonMobil), 7/1/03, at 5:5-25. At the time of the CARB Phase 2 regulations, Mr. Eizember worked in the Exxon USA refining headquarters. Eizember Dep. (Exxon/ExxonMobil), 7/1/03, at 8:8-14; 9/9/03, at 226:14-227:11. He was in charge of long-term planning for EPA and CARB reformulated gasolines. Eizember Dep. (Exxon/ExxonMobil), 7/1/03, at 8:15-20. Mr. Eizember participated in the rulemaking process. Eizember Dep. (Exxon/ExxonMobil), 7/1/03, at 103:19-104:23.

32. **Engibous, William (ChevronTexaco):** Mr. Engibous has worked for Chevron since 1979. Engibous Dep. (ChevronTexaco), 7/9/03, at 4:23-5:7. In 1996, he managed the Chevron refinery in El Segundo, California, and also the Richmond refinery in the San Francisco area. Engibous Dep. (ChevronTexaco), 7/9/03, at 5:8-7:24. Both refineries produce CARB-compliant fuels. Engibous Dep. (ChevronTexaco), 7/9/03, at 14:15-21. Mr. Engibous is currently a Manager in business and operations planning for ChevronTexaco. Engibous Dep. (ChevronTexaco), 7/9/03, at 4:23-5:2.

33. **Fletcher, Robert (CARB):** Mr. Fletcher was the manager of the fuels section at CARB during the development of the Phase 2 regulations. Fletcher Dep. (CARB), 7/8/03, at 8:11-9:4. Jim Aguila, Nelson Chan, and John Courtis, among others, reported to Mr. Fletcher. Fletcher

Dep. (CARB), 7/8/03, at 9:10-12:3. Mr. Fletcher and his staff were responsible for developing the reformulated gasoline regulations, preparing a cost-effectiveness analysis, and producing the Staff Report and Technical Support Document. Fletcher Dep. (CARB), 7/8/03, at 8:15-12:3. He participated in meetings with representatives from the automotive and refining industries, including Unocal. Fletcher Dep. (CARB), 7/8/03, at 177:23-179:13. Mr. Fletcher still works for CARB. Fletcher Dep. (CARB), 7/8/03, at 8:9-10.

34. **Gellhorn, Ernest (Expert):** Professor Gellhorn is an expert in administrative law and antitrust law. Gellhorn Dep. (Expert), 10/18/03, at 7:9-17. Professor Gellhorn reviewed the process that CARB used to develop and issue its Phase 2 reformulated gasoline regulations in 1991 and compared that rulemaking with administrative proceedings in federal and state agencies. Gellhorn Dep. (Expert), 10/18/03, at 43:11-44:17. He concludes that CARB followed the standard quasi-legislative rulemaking procedures commonly used by administrative agencies performing quasi-legislative functions. Gellhorn Rpt. at 7.

35. **Grey, Gina (formerly Gina Nelhams) (WSPA):** Ms. Grey was a coordinator in fuels at WSPA at the time of the development of the Phase 2 regulations. Grey Dep. (WSPA), 8/29/03, at 5:11-6:17. She helped to develop WSPA's strategy for advocacy before CARB. Grey Dep. (WSPA), 8/29/03, at 25:7-32:10. Ms. Grey continues to work for WSPA as a Fuels Manager for its Southwest Region. Grey Dep. (WSPA), 8/29/03, at 5:9-23.

36. **Griffin, James M., LECG, LLC (Expert):** Dr. Griffin is an expert in economics and public policy as it concerns industrial organization. Griffin Dep. (Expert), 10/13/03, at 5:14-6:15. In his expert report, he analyzed the economic consequences of Unocal's allegedly fraudulent behavior. *See* Griffin Rpt. at 2. In particular, he applied methods of economic analysis, including

"revealed preference" analysis, based on the actual behavior of CARB and California refiners, to evaluate the options that they likely would have pursued but for the alleged fraud. [redacted] Professor Griffin also evaluated the conclusions of and responded to Complaint Counsel's economic expert, Professor Carl Shapiro. *Id.* at 3.

37. **Gyorfi, Lance (Chevron):** Mr. Gyorfi managed several of Chevron's refineries until 1994. From 1994 to 1995, he was vice president and manager of operations in Chevron Shipping, and in 1995 became the vice president of refining for Chevron and later ChevronTexaco. Gyorfi Dep. (ChevronTexaco), 8/20/03, at 20:25-24:5. [redacted] Mr. Gyorfi retired in 2002. Gyorfi Dep. (ChevronTexaco), 8/20/03, at 24:6-14.

38. **Hancock, Steve (Shell/Texaco):** Mr. Hancock worked as an engineer for Texaco from 1967 until he retired in 2001. Hancock Dep. (Texaco), 6/27/03, at 5:7-10:11. In 1991, he worked at Texaco Refining Headquarters in Los Angeles. Hancock Dep. (Texaco), 6/27/03, at 69:7-71:1. He was the lead technical member on a team of Texaco personnel charged with monitoring

CARB and advocating Texaco's interests during the Phase 2 rulemaking process. Hancock Dep. (Texaco), 6/27/03, at 71:4-74:16.

39. **Hochhauser, Albert (Exxon/ExxonMobil):** At the time of the development of CARB's Phase 2 regulations, Mr. Hochhauser was a senior research associate for Exxon. Hochhauser Dep. (Exxon/ExxonMobil), 8/28/03, at 6:11-23. He was the designated Exxon representative to Auto/Oil. Hochhauser Dep. (Exxon/ExxonMobil), 8/28/03, at 9:19-24. [redacted] He is currently a senior engineering advisor for the ExxonMobil Research and Engineering Company. Hochhauser Dep. (Exxon/ExxonMobil), 8/28/03, at 5:24-6:1.

40. **Ibergs, Victor (Ultramar/Valero):** Mr. Ibergs is currently Valero's planning manager at its Wilmington, California refinery. Ibergs Dep. (Valero), 8/18/03, at 7:16-18. Before that, he was in project engineering and process control. *Id.* at 10:7-24. [redacted]

41. **Ingham, Mike (Chevron):** [redacted]

[redacted] He was also involved in Auto/Oil efforts during the rulemaking. *Id.* at 174:13-191:24. He continues to work for Chevron Products Company as the Manager of State Fuels Regulation. *Id.* at 8:21-9:6.

42. **Irion, Bruce (Shell/Equilon)**: From 1994 to 2000, Mr. Irion was responsible for ensuring that Shell's—for a period, Equilon's—Martinez refinery would be complaint with CARB and EPA reformulated specifications. Irion Dep. (Shell), 7/8/03, at 5:12-23, 10:13-25. [redacted] Mr. Irion is currently a Manager at Shell. *Id.* at 5:23-6:2.

43. **Jacober, Dave (Shell/Equilon):** Mr. Jacober held a variety of engineering and management positions at Shell's refineries. Jacober Dep. (Shell), 8/20/03, at 9:14-14:16. [redacted] He is currently the Vice President of Business Management for the Deer Park refinery. *Id.* at 13:18-20.

44. **Jessup, Peter (Unocal):** Dr. Jessup is a scientist for Unocal and co-inventor, with Michael Croudace, of the inventions claimed by the various patents at issue in this matter. He still works for Unocal as a scientist. Jessup IH Dep. (Unocal), 1/25/02, at 7:13-11:16. At the time of the Phase 2 rulemaking, Dr. Jessup presented the results of Unocal's independent research into cleaner burning gasoline to CARB, Auto/Oil, the EPA and WSPA. *Id.* at 84:2-10.

45. **Kenny, Michael (CARB):** Mr. Kenny served as General Counsel of CARB from 1990 to 1996, and as Executive Officer of CARB from 1996 to 2003. Kenny Dep. (CARB), 5/15/03,

at 5:8-6:5 He is aware of CARB's activities throughout the development of the Phase 2 regulations. *Id. passim.*

46. **Kulakowski, J. Michael (Unocal/Texaco):** Mr. Kulakowski worked with Dr. Jessup on the 5/14 project, but left Unocal in 1993 for Texaco, and later, Shell. Kulakowski Dep. (Unocal), 6/26/03, at 11:16-12:10, 22:23-23:4, 132:10-18. He participated in various meetings with CARB regarding Unocal's emissions research, both private and public, and is familiar with Unocal's regulatory efforts. *E.g.*, *id.* at *passim*. Mr. Kulakowski also worked with WSPA and represented WSPA before CARB. *Id.* at 29:17-30:2.

47. **Lamb, Dennis (Unocal):** Mr. Lamb is a former Unocal employee. Lamb IH Dep. (Unocal), 1/16/02, at 7:7-8:1. He was the General Manager of Fuels Planning and the point person for communication with CARB during the development of the Phase 2 regulations. *Id.* at 9:7-10:21. Mr. Lamb has remained an expert consultant to Unocal's outside legal counsel. *Id.* at 8:2-6.

48. **Lieder, Charles (Shell/Equilon):** Since 1990, Mr. Lieder has supported gasoline blending at Shell refineries and advocated Shell's position in federal and state forums. Lieder Dep. (Shell), 9/11/03, at 11:13-25. He worked with WSPA, Auto/Oil, and other industry groups, spending time on WSPA's fuels subcommittee and predictive models group. *Id.* at 12:1-17, 14:15-21. [redacted]

[redacted]

49. **Linck, Nancy J. (Expert):** Dr. Linck is an expert in matters of patent prosecution and litigation. She provides expert opinions regarding aspects of patent prosecution, including the uncertainties inherent in the patent process and the bases for confidentiality afforded patent applications. Additionally, she provides expert opinions on the prosecution history underlying

Unocal's '393 Patent with respect to the diligence with which and the manner in which the application was prosecuted. Linck Rpt. at 4.

50. **Mahdavi, Reza (CARB):** Dr. Mahdavi has been an economist for CARB since 1988; people with economic questions are supposed to go to him for help. Mahdavi Dep. (CARB), 7/25/03, at 5:9-6:7. He reviewed and commented on the 1990 Cost-Effectiveness Guidance document, and also responded to comments concerning small independent refiners. *Id.* at 6:23-8:5, 16:3-17:14. He also helped to author a regulatory agency guide published by CARB. *Id.* at 30:1-37:8.

51. **Martinez, Charles (Exxon/ExxonMobil):** In 1989, Mr. Martinez was the Section Leader of Exxon's Gasoline Quality Group, and was promoted to Director of the Fuels Laboratory in 1991. Martinez Dep. (Exxon), 8/26/03, at 17:22-18:11, 18:22-19:1. He is familiar with ExxonMobil's policies on technology and intellectual capital, including patents. *E.g., id.* at 28:7-37:24, 37:28-58:23, 66:25-68:25. Mr. Martinez is General Manager of Products, Research and Technology for the ExxonMobil Research and Engineering Company. *Id.* at 25:2-6.

52. **McHugh, Gavin (Texaco):** At the time that CARB was developing its Phase 2 regulations, Mr. McHugh worked for Texaco as the Senior Coordinator for Public and Government Affairs. McHugh Dep. (Texaco), 6/26/03, at 11:16-23, 12:7-10. Currently, Mr. McHugh owns his own government affairs consulting firm. *Id.* at 8:5-20.

53. **Meyer, David (Auto/Oil):** Mr. Meyer is the attorney employed by Covington & Burling who, from 1989 to 1996, served as counsel to the "oil side" of the Auto/Oil collaborative research program. Meyer Dep. (Auto/Oil), 7/14/03, 5:19-7:13. He would attend meetings to take minutes and serve as an antitrust adviser. *Id.* at 11:18-12:14.

54. **Millar, Robert (Texaco/Equilon/Shell):** Mr. Millar worked at a former Texaco refinery that Shell now owns after a short-lived joint venture. Millar Dep. (Shell), 6/24/03, at 5:2-15. Mr. Millar is the Business Manager at Shell's Los Angeles refinery. *Id.* at 5:16-22. [redacted]

55. **Miller, John Wayne (Unocal):** Dr. Miller is the former manager of Unocal's Fuels Group and supervised Dr. Jessup and Dr. Croudace during their research into reformulated gasoline. Miller Dep. (Unocal), 6/25/03, at 91:12-24. He is familiar with Unocal's intellectual property policies, and is aware of Unocal's disclosure of certain limited information to CARB. *E.g., id.* at 26:24-27:21, 86:8-88:11, 197:10-200:19. Since 1995, Mr. Miller has worked for Sunoco. *Id.* at 8:21-25.

56. **Moyer, Neal (Texaco):** Mr. Moyer is a former Air Regulatory Specialist for Texaco. He began his career working for CARB, and then became a specialist on pollution regulations for Texaco. Moyer Dep. (Texaco), 8/22/03, at 7:10-8:23. [redacted] Mr. Moyer is currently employed by Shell Oil Co. *Id.* at 5:10-6:15.

57. **Pedersen, William F. (Expert):** Mr. Pedersen is an expert in the field of environmental regulation and the operation of the federal Clean Air Act. Mr. Pedersen's expert report analyzes the constraints imposed by federal environmental regulations that effectively foreclosed CARB from adopting RFG regulations that would have provided for lesser air quality benefits than those actually adopted. Pedersen Rpt. at 3-4. Mr. Pedersen's report also addresses CARB's ability to revise or modify its RFG regulations subsequent to learning of Unocal's patents. *Id.*

58. **Riley, Ken (ARCO/BP):** Mr. Riley is a part-time consultant after retiring from ARCO in 1996. Riley Dep. (BP), 8/7/03, at 4:22-5:7. He is designated to testify on behalf of BP. *Id.* at 7:18-22. He has knowledge of the Auto/Oil project. *Id.* at 23:5-27:25. [redacted]

59. **Segal, Jack (ARCO/Amoco/BP):** Mr. Segal was the Manager of the Fuels Department from 1992 to 2000, and was in charge of the development and implementation of the clean fuels program and the interaction between ARCO and CARB, as well as ARCO's interaction with outside organizations like Auto/Oil and WSPA. Segal Dep. (ARCO), 8/12/2003, at 11:1-12:23, 13:3-14:12. [redacted] Mr. Segal is now retired. *Id.* at 4:22-25.

60. **Sharpless, Jananne (CARB):** Ms. Sharpless was the Chairwoman of CARB from 1985 to 1993—the timeframe in which CARB enacted its Phase 2 regulations. Sharpless Dep. (CARB), 8/6/03, at 37:11-14. Ms. Sharpless is familiar with CARB's efforts to develop clean fuels regulations through the adoption of the Phase 2 standards. *Id.* at *passim*. She is now a consultant. *See id.* at 39:3-6.

61. **Simeroth, Dean (CARB):** Mr. Simeroth is the Chief of the Criteria Pollutants Branch and Stationary Source Division for CARB. He served in this position during Phases 1, 2, and 3 of the CARB RFG regulations. Simeroth Dep. (CARB), 7/9/03, at 6:15-7:3. In developing the regulations, he met with Unocal and is familiar with the methods CARB used to develop the regulations. *Id.* at 7:4-12, 13:19-15.3, 120:8-121:8, 130:21-137:8, *passim*.

62. **Simonson, Robert (Exxon/Valero):** Mr. Simonson worked at the Benicia Refinery since 1968 and has served as an engineer throughout several changes in ownership. Simonson Dep. (Exxon/Valero), 8/18/03, at 6:1-20. [redacted] Mr. Simonson is currently Valero's West Coast Products Optimization Senior Manager. *Id.* at 4:23-5:1.

63. **Sinclair, Diane (Ultramar/Valero):** Ms. Sinclair started work in the legal department of Ultramar (later Valero) in 1990, and has been on the legal committee of WSPA since then. Sinclair Dep. (Valero), 8/19/03, at 6:9-11, 8:6-12. [redacted] Currently, she is Environmental Health and Safety Counsel for the West Coast properties of Valero Energy Corporation. *Id.* at 5:23-6:1.

64. **Stegemeier, Richard (Unocal):** Mr. Stegemeier was the Chief Executive Officer of Unocal from 1988 until 1994, and retired as director in 1995. Stegemeier IH Dep. (Unocal), 7/17/03, at 12:13-15:1. The leaders of the Science and Technology Division reported to him. *Id.* at 17:18-18:2. He is familiar with Unocal's operations during the time that CARB was contemplating its Phase 2 regulations. *E.g., id.* at 68:10-69:9, *passim*.

65. **Stellman, Richard (Expert):** Mr. Stellman is an expert chemical engineer in the oil refining and petrochemicals industries. Stellman Dep. (Expert), 10/14/03, at 7:11-16. He provides an expert opinion in the following subjects areas: [redacted]

[redacted] (5)

a response to the expert reports of Blake T. Eskew and Michael E. Sarna. Stellman Rpt. at 3.

66. **Strathman, Charles (Unocal):** Mr. Stratham oversaw the legal department in charge of Unocal's patents at the time of the Phase 2 regulations, and also has knowledge of Unocal's legal activities after the patent issued, including the '393 infringement litigation. Strathman Dep. (Unocal), 4/22/03, at *passim*. Most recently, Mr. Strathman was the Vice President and Chief Legal Officer at Unocal before he retired. *Id.* at 5:10-12.

67. **Teece, David, LECG, LLC (Expert):** Dr. Teece is an expert in economics and the management of technological innovation. Teece Dep. (Expert), 10/15/03, at 16:3-11. His expert report addresses the following topics: (1) the economics of innovation and intellectual property; (2) the economics of standards, standard-setting and standard-setting organizations, and how they relate to the regulatory rulemaking by a governmental agency that is at issue in this case; (3) complaint counsel's proposed relevant markets, and complaint counsel's allegations that Unocal possesses market power and/or monopoly power in the two proposed relevant markets alleged in the Complaint; and (4) the economics of "lock-in," both generally and with regard to this case. Teece Rpt. at 2-3. Additionally, Dr. Teece's expert report responds to the expert reports of Professor Carl Shapiro, Mr. Blake Eskew, and Mr. Michael Sarna. *Id.* at 3.

68. **Toman, Jeff (ChevronTexaco):** Mr. Toman is familiar with Chevron's practices and policies regarding the disclosure of patents and patent applications outside of the company and policies and practices regarding the investigation of patent information. Toman Dep. (Chevron),

8/21/03, at 7:9-10:7. Currently, Mr. Toman is the Intellectual Property Manager for Chevron/Oronite and ChevronTexaco Global Lubricants/Global Technology Company. *Id.* at 4:21-24.

69. **Uihlein, Jim (BP/ARCO):** Mr. Uihlein worked for BP from the late 1980s to 1996, and was assigned to work with WSPA on the proposed CARB predictive model. Uihlein Dep. (BP), 8/27/03, at 6:16-7:7, 8:1-25. [redacted] Today, Mr. Uihlein is a Senior Principal Engineer at BP Amoco Oil, although he spent time working for the 76 Products Company and ARCO during the interim period. *Id.* at 6:16-7:7, 9:8-24.

70. **Venturini, Peter (CARB):** Mr. Venturini has been working for CARB for more than 30 years, and is designated by CARB to testify on its behalf. Venturini Dep. (CARB), 5/13/03, at 10:6-19. Mr. Venturini is familiar with the development of the CARB regulations, the communications between Unocal and CARB, and CARB's reaction to the Unocal patent. *Id.* at *passim*. Currently, Mr. Venturini is the Chief of the Stationary Source Division at CARB. *Id.* at 7:13-17.

71. **Wang, Michael (WSPA):** Mr. Wang has worked for WSPA since 1987 and at the time of the Phase 2 rulemaking process, was a manager of upstream, downstream, and environmental issues for the oil and gas industries. Wang Dep. (WSPA), 8/28/03, at 5:23-6:12. He was designated to testify on behalf of WSPA regarding WSPA's policies and activities applicable to the reformulated gasoline effort. *Id.* at 11:23-12:3, 12:16-21, *passim*. Currently, Mr. Wang is a Manager of the South Coast Region, Legal, Tax and Pipeline for WSPA. *Id.* at 5:9-15.

72. **Welstand, Joseph ("Steve") (Chevron):** At the time of the CARB Phase 2 development, [redacted]

[redacted] Currently, Mr. Welstand is a consulting engineer for Chevron U.S.A. that evaluates fuels and automotive technology. *Id.* at 5:16-25.

73. **Wirzbicki, Gregory (Unocal):** Mr. Wirzbicki is Chief Patent Counsel for Unocal and prosecuted the patents at issue in this matter. Wirzbicki Dep. (Unocal), 4/24/03, at 5:12-14, 39:11-40:7.

74. **Witherspoon, Catherine (CARB):** Around 1990, Ms. Witherspoon was CARB's Chief of the Office of Air Quality Planning. Witherspoon Dep. (CARB), 8/8/03, at 10:9-15. She helped to develop several guidance documents, including the Cost-Effectiveness Guidance publication. *Id.* at 11:2-12:18. Today, Ms. Witherspoon is the Executive Officer at CARB. *Id.* at 4:11-14.

75. **Wood, John (ARCO/BP):** Mr. Wood will testify on behalf of BP West Coast Products. Wood Dep. (ARCO/BP), 8/27/03, at 4:16-18. [redacted] Mr. Wood is a currently Senior Attorney at BP America, working in its upstream oil and gas production. *Id.* at 8:19-9:8.

76. **Youngblood, Douglas (Texaco):** Mr. Youngblood was the Director and General Manager of Environment, Health, and Safety for Texaco Refining and Marketing, Inc. Youngblood Dep. (Texaco), 8/13/03, at 7:13-9:17. He is familiar with Texaco's work with Auto/Oil and WSPA.

E.g., id. at 10:5-21:8, 22:5-13. He is also aware of Auto/Oil's advocacy before CARB. *Id.* at 22:5-33:24. Mr. Youngblood is now retired. *Id.* at 6:14-24.

77. **Youngman, Gary (ARCO/BP):** Mr. Youngman is Lead Engineer at BP's—formerly ARCO's—Carson refinery. Youngman Dep. (ARCO), 6/25/03, at 8:21-9:18. [redacted]

78. **Zimmerman, Edwin (Auto/Oil):** Mr. Zimmerman is an attorney at Covington & Burling who served as outside antitrust counsel to the "oil side" of the collaborative research effort known as Auto/Oil. Zimmerman Dep. (Auto/Oil), 8/13/03, at 5:3-6:7.

II. THE AIR POLLUTION PROBLEM IN CALIFORNIA IN THE LATE 1980S

79. During the late 1970s and 1980s, Californians were confronted with dangerous levels of air pollution. This was caused in significant part by vehicles using gasoline and diesel fuel in their internal combustion engines.

80. Motor gasoline, when burned in an automobile engine, produces three pollutants in the tailpipe exhaust: nitrogen oxides (NOx), carbon monoxide (CO), and hydrocarbon (HC). *See* RX 793 at 014. These gasoline emissions are harmful to human health and to the environment.

81. By the late 1980s, members of the automotive industry and the public were demanding lower emissions fuel. The problem was so severe that serious debate was occurring, especially in California, as to whether motor gasoline should even be replaced entirely with an alternative, lower emissions, expensive fuel, *i.e.*, methanol, for example. Jessup IH Dep. (Unocal), 1/25/02, at 8:6- 9:13.

A. The California Clean Air Act

82. California has been a pioneer in motor vehicle emissions regulation, having passed laws providing for the study of the causes, effects and control of air pollution in 1955. 1955 Cal. Stat. 1312, § 1; *see also Motor Vehicle Mfrs. Ass'n. v. NYS Dept. of Env. Cons.*, 17 F.3d 521, 524-25 (2d Cir. 1994).

83. California's motor vehicle emissions regulations boast standards that are more stringent than federal standards and historically one or two years ahead of federal controls of motor vehicle emissions. *See* CAL. HEALTH & SAFETY CODE § 43018(b); Arnold W. Reitz, Jr. Mobile Source Air Pollution Control, 6 ENVTL. LAW 309, 328-329 (2000).

84. In 1988, the California Legislature passed a series of amendments to the California Health and Safety Code that are now known as the California Clean Air Act of 1988. CAL. HEALTH & SAFETY CODE §§ 40910, *et seq.*, Ch. 1568, 1988 Cal. Stat. 4397 (codified as amended in scattered sections of CAL. HEALTH & SAFETY Code).

85. The amendments required CARB to adopt measures that would achieve a 55 percent reduction in organic gas emissions by December 31, 2000, through a combination of motor vehicle controls, vehicle fuel restrictions, and in-use vehicle control requirements. CAL. HEALTH & SAFETY CODE §§ 40910, *et seq.*

86. CARB thus amended its ongoing program for reducing emissions from motor vehicles to include the establishment of the Low-Emission Vehicle Standards Program and promulgation of clean fuels requirements. Simeroth Dep. (CARB), 7/9/03, at 94:17-23; Gellhorn Rpt. at 9.

B. California Assembly Bill 234

87. Additionally, in response to the air pollution problem in California in the late 1980s, the California Assembly adopted Assembly Bill 234 ("AB 234"), as a study bill. This bill resulted directly from the debate over whether methanol should be mandated in California. Boyd Dep. (CARB), 8/22/03, at 104:11-105:9.

88. AB 234 directed the Governor to establish the Advisory Board on Air Quality and Fuels, an advisory panel, which was created to assess methanol and other fuel alternatives. Boyd Dep. (CARB), 8/22/03, at 100:15-25, 104:11-105:9; *see also* Sharpless Dep. (CARB), 8/6/03, at 70:7-71:19; *see also* RX 110 at CARB-FTC 0052237-38 (California Advisory Board on Air Quality and Fuels, Report to the California Legislature).

89. The AB 234 Advisory Board published its findings on October 2, 1989. RX 110. The Board had six primary findings related to the promise of alternative fuels and specifically vehicles powered by methanol, compressed natural gas, propane, and ethanol and electric vehicles. RX 110 at CARB-FTC 0052248. Among these, the Board found that reformulated gasolines "might be able to qualify as cleaner fuels, but research is only beginning and success is uncertain." RX 110 at CARB-FTC 0052248.

90. Thus, by the late 1980s, the prospect of methanol in automobiles had become real. At that time, a contingent from General Motors informed Unocal that they were intending to begin designing and selling "methanol" cars, making gasoline "defunct." Croudace IH Dep. (Unocal), 2/20/02, at 17:3-22.

91. Throughout the petroleum and auto industries, there was a desire not to change over to methanol, but to stay with gasoline. Jessup IH Dep. (Unocal), 1/25/02, at 8:21-9:8. Dr. Jessup

testified that Unocal's initial motivation for emissions research, therefore, was aimed at showing that gasoline could be as clean or cleaner than methanol with respect to air pollution. Jessup IH Dep. (Unocal), 1/25/02, at 9:9-13.

III. UNOCAL'S RESEARCH AND INVENTION

A. The Science Behind Motor Gasoline

92. Gasolines used in automobile engines (motor gasolines) are blended in a refinery from a number of hydrocarbon streams ("blendstocks") produced at the refinery or purchased which have different octane values, composition, and properties. CX 5 at 010-11.

93. The blendstocks available to a refiner depend upon the crude source available at any given time and also on the refinery's complexity. CX 5 at 013.

94. The properties of the different gasoline blendstocks are known to oil refiners. *Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 208 F.3d 989, 992 (Fed. Cir. 2000).

95. Oil refiners of ordinary skill in the art change the chemical properties of gasoline by varying the proportions of the different blendstocks used in the particular batch of gasoline. *Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 208 F.3d 989, 992 (Fed. Cir. 2000).

96. The finished motor gasoline products are complex mixtures of hydrocarbons that range in boiling points from 85° to 400° F and have desirable properties for motor vehicle performance under a variety of conditions. CX 5 at 010.

97. Octane rating, volatility and distillation levels are among the properties of gasoline that are critical to automotive performance. CX 5 at 010; CX5 at 019.

98. A gasoline's octane rating determines whether the gasoline is sold as "premium" gasoline (91-93 octane), "mid-grade" gasoline (87-93 octane) or unleaded "regular" gasoline

(minimum 87 octane). CX 5 at 013. In most states, premium gasoline is 92 Octane; mid-grade is 89 Octane and regular is 87 Octane.

99. Reid vapor pressure ("RVP") is a measure of gasoline volatility which determines how easily and completely a fuel burns when ignited in an engine. CX 5 at 019.

100. Distillation is a measure of the temperatures at which different percentages of a gasoline fuel distill. The common distillation levels are known as "T-10," "T-50," and "T-90"—referring to the temperatures at which 10 volume percent, 50 volume percent and 90 volume percent of the gasoline is distilled. CX 5 at 019.

101. Driveability Index, or "D.I.," is a value calculated with a formula using the T10, T50 and T90 values. The equation is:

D.I. = 1.5(T10) + 3(T50) + T90.

[redacted]

102. Olefins, Paraffins and Aromatics are the three basic types of hydrocarbons often present in gasoline. Paraffins and Aromatics are always present in motor gasoline as they are naturally occurring. Olefins are often, but not always present, as they are formed by a catalytic cracking process not always used by a refinery. The "Olefins," "Paraffins" and "Aromatics" volume percentages of a gasoline together must equal 100%. *Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 208 F.3d at 992.

103. The "numerical property values" of a gasoline are the numerical values associated with the various properties of a specific, blended batch of gasoline.

B. Unocal's Research

1) Rejected Proposal to Auto/Oil

104. In the late 1980s and early 1990s, there was a general lack of scientific understanding as to which chemical properties of gasolines most greatly affect the three different types of harmful auto tailpipe exhaust emissions: CO, NOx and HC. Occasionally, studies conducted by the automobile and/or oil industries had examined specific fuel properties and effects on emissions.

105. In 1989, the auto and oil industries began circulating proposals for such a systematic study of how gasoline might be "reformulated" to reduce emissions. One came from two Unocal chemists—Drs. Peter Jessup and Michael Croudace. With the growing pressure from the auto industry and others to create a lower emissions gasoline (or face the prospect of gasoline being replaced by methanol), Drs. Jessup and Croudace had been assigned to research the development of cleaner burning gasoline. Jessup IH Dep. (Unocal), 1/25/02, at 8:21- 9:13; Croudace IH Dep. (Unocal), 2/20/02, at 64:12-66:8.

106. Unocal's proposal recommended a broad-based research program to identify the chemical properties that most strongly affect automobile exhaust emissions. Jessup IH Dep. (Unocal), 1/25/02, at 58:11-62:09, 73:14-75:5; Croudace IH Dep. (Unocal), 2/20/02, at 54:14-56:14 (stating that "we thought they wanted to run tests . . . that would be unbiased, that would really teach you what the basic parameters for reducing emissions would be . . . ."); RX 760. Jessup and Croudace proposed a study involving ten different properties. Jessup IH Dep. (Unocal), 1/25/02, at 73:12-75:5; Croudace IH Dep. (Unocal), 2/20/02, at 54:14-55:5; RX76 at U0095462-63.

107. Unocal's proposal was rejected. Instead of a broad-based study, Auto/Oil chose to study the effects of only four fuel properties: aromatics, MTBE, olefins and T90. Jessup IH Dep.

(Unocal), 1/25/02, at 73:14-75:4 ("we had tried to get them to look at a broader slate at that point and they had refused"); Croudace IH Dep. (Unocal), 2/20/02, at 54:14-56:15 ("So, the decision in that task force was to go with evaluating variables that had only been tested before and we had a good handle on what was going on."); Croudace IH Dep. (Unocal), 2/20/02, at 58:12-59:17.

2) The Jessup/Croudace Discoveries and Inventions

108. On October 27, 1989, Drs. Jessup and Croudace's supervisor, William Mallett, drafted a written report to then-president of Unocal's Refining and Marketing Division, Roger Beach. The report, entitled "Critique of Auto/Oil Program," attached a technical memorandum from Drs. Jessup and Croudace. RX 760.

109. Mr. Mallett's critique of Auto/Oil states:

> [W]e believe that the Auto/Oil program is doomed to failure. Because the test gasolines were selected based on political motives rather that [sic, than] good sound scientific principles, very little information of a scientific nature will come out of the program. And, because we may find no recipe for "clean" gasoline in this program, it could erroneously convince the regulators that the only clean fuel for internal combustion engines is methanol.
>
> Based on these conclusions we believe that Unocal needs to move ahead with a program of our own to determine if, in fact, it is possible to blend a "clean" gasoline from Unocal refinery streams, and if not, what Unocal should be doing in the 1990s in order to remain in the fuels business.

CX 142; RX 760; Croudace IH Dep. (Unocal), 2/20/02, at 58:23-59:11.

110. In the technical memorandum attached to Mr. Mallett's report, Drs. Jessup and Croudace describe the motivation for their multiple-factor study. In contrast to the Auto/Oil study which Drs. Jessup and Croudace described as focusing on "politically motivated gasoline variables," the Unocal study would be

> designed to show directionally how we could change gasoline properties to minimize the impact of automobile emissions on air pollution. Hopefully, this information will allow the Company to continue refining and marketing gasoline into the foreseeable future. Our program is also intended to show our catalyst and process groups directions for future research that will help our refining system meet the challenge of producing environmentally acceptable fuels.

RX 760 at U 0095462.

111. The Jessup/Croudace proposal called for a study of the four variables that were to be examined by Auto/Oil, aromatics, MTBE, olefins and T90, as well as numerous other variables including paraffin content, research octane number, motor octane number, T10, T50, and Reid Vapor Pressure (RVP). RX 760 at U 0095463.

a) The One-Car Study

112. Even though Unocal management did not approve separate funding for this screening proposal, Drs. Jessup and Croudace began conducting their own independent research on behalf of Unocal, initially running a number of tests with different specially-designed gasoline fuels in one-car. Jessup IH Dep. (Unocal), 1/25/02, 75:9-22, 80:5-81:7.

113. In their initial, "one-car" study, the fuels used by Drs. Jessup and Croudace were not designed to reduce emissions, but instead to screen for potential effects of multiple variables on specific criteria pollutants (*e.g.* carbon monoxide, or CO). *E.g.*, CX 171 at 023-24; RX 11 at CARB 10004434 (1991 presentation to CARB explaining Unocal's tests).

114. Drs. Jessup and Croudace conducted their testing by measuring and recording the tailpipe emissions from each type of fuel, then used their expertise to analyze and interpret the data. CX 171 at 024.

115. Their analysis led to multiple discoveries. RX 761. Some of the discoveries included learning that oxygenates like MTBE, advocated by ARCO as an emissions reducer, did not reduce emissions in modern technology cars. *E.g.*, CX 171 at 005 ("MTBE doesn't directly affect tailpipe emissions."); *see also* RX 11 at CARB 10004441.

116. To the contrary, Drs. Jessup and Croudace discovered that seven other properties—T50, RVP, research octane number (RON), olefin content, paraffin content, T10 and T90—all had effects on specific criteria pollutants of exhaust emissions. RX 761 at UNO-013-0345; RX 11 at CARB 10004441.

117. By determining what statistical analysis to apply and then analyzing the data for the magnitude and interrelationships of these effects, Drs. Jessup and Croudace developed equations that they could use to predict emissions from compositions of gasoline, whether new or old compositions. RX 761 at UNO 013-0345-52.

118. In May of 1990, Drs. Jessup and Croudace presented results of their one-car study emissions research to Unocal management to obtain approval of and funding for additional confirmatory research. CX 172. Unocal approved funding of "the 5/14 Project." CX 176; Croudace IH Dep. (Unocal), 2/20/02, at 102:7-102:10 ("The 5/14 project is the—is actually a date, and it's the date at which we got approval to go forward with our ten-car fleet").

b) The Ten-Car Study

119. The 5/14 project involved a ten-car study of 4 older and 6 newer vehicles. This study again used test fuels similar to the one-car study (although somewhat different having been separately made at different times from the fuels of the one-car study.) RX 11 at CARB 10004442.

120. The actual testing for the 5/14 project began in July of 1990 and was conducted by the Southwest Research Institute. CX 572; CX 573; Croudace IH Dep. (Unocal), 2/20/02, at 111:8-23.

121. While the results of the ten-car study confirmed some of the discoveries of the one-car study (RX 11 at CARB 10004442), it also suggested that an additional property, aromatics, should be increased to reduce a certain criteria pollutant. RX 11 at 10004449-50; Croudace IH Dep. (Unocal), 2/20/02, at 164:4-19 (stating that 'there was an additional variable [, aromatics,] that we found to be pertinent").

c) The Thirteen-Car Study

122. The final test conducted by Unocal related to emissions was the thirteen-car test. Croudace IH Dep. (Unocal), 2/21/02, 205:4-12 (explaining there were three phases, "which were a single-car test, a ten-car test and a twelve—a thirteen-car test").

123. One purpose of the thirteen-car test was an attempt to reformulate production from Unocal's refineries which might take advantage of some of the aspects of the inventions from the one-car test that were later confirmed by the ten-car test. Jessup Dep. (Unocal), 6/11/03, at 40:23-42:8 (stating that the "whole object of that was to see how far we could go in our refineries using our own inventions. If we could reformulate our entire production or a little bit of it or how much flexibility we had, all sorts of things we were trying to do in the thirteen-car.").

124. A second purpose of the thirteen-car test was to compare fuels that Unocal might design with the industry fuels. Croudace IH Dep. (Unocal), 2/21/02, at 205:17-20; Jessup Dep. (Unocal), 6/11/03, at 41:16-42:6 ("And we were also trying to compare our own inventions with

other fuels that were already on the market, such as Arco fuels, Chevron fuels, I think Shell perhaps.").

125. Dr. Jessup has expressed his belief that they were successful in validating what was learned through the one- and ten-car studies during their thirteen-car study. Jessup Dep. (Unocal), 6/11/03, at 40:23-42:8.

C. Unocal's Patent Application

126. On July 10, 1990, Drs. Jessup and Croudace executed an invention disclosure entitled "A NEW METHOD OF BLENDING CONVENTIONAL GASOLINE FUEL COMPONENTS INTO LOW EMISSION/ REFORMULATED GASOLINES." RX 761 at UNO-013-0345. Their internal patent conception was then presented to and approved by Unocal's conception committee. *See* Jessup Dep. (Unocal), 6/11/03, at 139:25-140:7.

127. Thereafter, Unocal's in-house patent attorney, Greg Wirzbicki, drafted a patent application claiming aspects of Drs. Jessup's and Croudace's invention. The application, No. 07/628,488 ("'488 application"), was filed with the Patent and Trademark Office on December 13, 1990. RX 852 at UFTC 004615; *see also Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 208 F.3d 988, 993 (Fed. Cir. 2000).

128. The original '488 application consisted of 82 claims for certain compositions of cleaner-burning motor gasolines and methods of blending reformulated gasolines. RX 852 at UFTC 004622 71.

129. Over the course of the next years, Mr. Wirzbicki submitted several disclosures as he discovered information that could be pertinent to the examination process. He also filed

amendments, adding and withdrawing claims in light of this information. RX 852 at UFTC 004774 809.

130. On November 14, 1991, PTO examiner Helane M. Myers issued an office action, rejecting all pending claims of the '488 application. RX 852 at UFTC 004810.

131. On June 16, 1992, after several additional disclosures and further amendments by Unocal, the examiner issued another rejection, again rejecting all pending claims. RX 852 at UFTC 004926. An interview, further disclosures and another amendment followed. RX 852 at UFTC 004943-60.

132. On March 24, 1993, Examiner Myers issued a Notice of Allowability, indicating that claims 1-3, 5-25, 30-45, 48, 50, 54-58, 81-145, 147-150, 152, 155, 156, 163-181 and 190-202 would be allowed. RX 852 at UFTC 004964. A Supplemental Notice of Allowability was issued on June 3, 1993 after Unocal submitted an amendment canceling two claims. RX 852 at UFTC 004993.

133. On January 31, 1994, Unocal received notice that the its patent on application No. 07/628,488 was to issue as Patent No. 5,288,393 on February 22, 1994.

134. Patents become publicly available upon issuance. 37 CFR § 1.1(a).

135. On December 29, 1994 and on July 5, 1995, Unocal filed disclaimers, disclaiming certain claims in the '393 Patent. RX 852 at UFTC 005022; RX 852 at UFTC 005036.

136. Forty-one claims remain in the '393 Patent. Each of these is a composition claim describing particular ranges of properties for compositions of motor gasoline. RX 793.

D. Litigation on the '393 Patent

137. Unocal issued a formal announcement of the '393 Patent in a press release dated January 31, 1995. CX 599. In the announcement, Unocal stated that it was in the process of

developing a licensing plan for the patent and would roll out the plan by the end of April 1995 to make patent licenses available to all interested refiners. CX 599 at UFTC 009847.

138. Two weeks before Unocal was to announce a licensing plan, on April 13, 1995, a refiner consortium of ARCO, Chevron, Exxon, Mobil, Shell and Texaco (collectively, "Refiners") filed a suit against Unocal in the Central District of California seeking a declaratory judgment that the '393 patent was invalid, unenforceable and not infringed by Refiners. *Union Oil Co. of Cal. v. Chevron U.S.A., Inc.*, 34 F. Supp. 2d 1222, 1224 (C.D. Cal. 1998).

139. In the Complaint and Amended Complaint against Unocal, Refiners claimed that the '393 patent was invalid for anticipation, obviousness, lack of sufficient written description, indefiniteness, failure to disclose best mode and non-enablement.

140. Refiners also claimed that the patent was unenforceable under a number of different equitable defenses to infringement, inequitable conduct, implied license, unclean hands and equitable estoppel. As part and parcel of these equitable defenses, the Refiners alleged "that Unocal had lulled CARB and the [refiners] into believing that Unocal did not intend to enforce its patent rights." *Union Oil Co. of Cal. v. Chevron U.S.A.*, 34 F. Supp. 2d 1222, 1223-25 (C.D. Cal. 1998). As part of the inequitable conduct claim, Refiners alleged that Unocal had committed fraud on the Patent and Trademark Office by failing to disclose material information in the process of obtaining its patent. *Union Oil Co. of Cal. v. Atlantic Richfield*, 34 F. Supp. 2d 1208 (C.D.Cal. 1998).

141. Unocal answered and counterclaimed for infringement.

142. Refiners' case was dismissed before trial for lack of subject-matter jurisdiction, in that Unocal had not evidenced an intent to sue for infringement. The case proceeded to trial on

Unocal's counterclaim; Refiners asserted their validity, infringement and enforceability/equitable claims as defenses.

143. In 1996, before trial on the '393 Patent, Refiners invited CARB to join the litigation against Unocal. The California Governor's office declined the request. CARB has refused to disclose the reason for the Governor's decision based on deliberative process privilege. Kenny Dep. (CARB), 5/15/03, at 104:23-105:9, 106:8-24, 107:8-16.

144. Also in 1996, Refiners sought to involve the FTC in an investigation into Unocal's patents. That invitation, too, was rejected. RX 401-RX 409.

145. In May of 1997, the United States District Court issued an order construing the claims of the '393 Patent as a matter of law. In that order, the district court held that simply matching the numerical measurements of a composition with the numerical limitations of the claims of the patent was not evidence that the claim covered such a composition. More specifically, the court held that each claim of the '393 Patent required that the accused gasoline not only meet the numerical limitations of the '393 Patent claims but also meet the other limitations—namely that the composition had to be what is commonly referred to as motor gasoline, a standard automotive gasoline composition.

146. The legal claims on the '393 Patent were tried to a jury from July through November 1997. The jury found that 29% of Refiners' gasoline sold in a five-month period in 1996 infringed the '393 Patent claims as construed by the court, although the rate of infringement for each Refiner varied. The jury also found that the '393 Patent was not invalid under any of the theories advanced by Refiners.

147. In November 1997, the jury awarded Unocal damages of 5.75 cents per gallon of infringing gasoline made, used or sold by defendant Refiners.

148. The defense of inequitable conduct was tried to the judge in December 1997.

149. Refiners abandoned their claims of implied license and unclean hands. At the close of the bench trial, which followed the jury trial, in December 1997, Refiners abandoned their claim of equitable estoppel. *Union Oil Co. of Cal. v. Chevron U.S.A.*, 34 F. Supp. 2d 1222, 1224 (C.D. Cal. 1998).

150. In August 1998, the court issued its decision on Refiners' inequitable conduct claim, holding that it had not been shown that Unocal had intentionally withheld any material information or otherwise committed any fraud on the PTO or in prosecuting the patent.

151. The court entered judgment for Unocal under 28 U.S.C. § 1292(c), which applies to patent infringement judgments that are final except for an accounting.

152. On Unocal's petition after the entry of judgment, the district court sanctioned Refiners with attorney's fees for the vexatious manner and method by which they asserted, litigated and ultimately abandoned certain claims, including their equitable defenses. *Union Oil Co. of Cal. v. Chevron U.S.A.*, 34 F. Supp. 2d 1222, 1223-25 (C.D. Cal. 1998). The district court based its sanctions of the Refiners in part on Refiners' representations at the summary judgment stage that they could offer evidence of detrimental reliance on some conduct by which Unocal had "lulled CARB and the defendants into believing that Unocal did not intend to enforce its patent rights." *Id.* at 1224. At trial, however, according to the court, "defendants did not even attempt to introduce such evidence. Instead, defendants asserted a new 'derivation' argument, the gist of which was that

Unocal had copied the invention from CARB. No competent evidence was introduced in support of that argument and the jury did not find the patent invalid on that basis." *Id.*

153. The sanction order also noted, "[m]oreover, defense counsel inappropriately suggested to this Court and the jury that the '393 patent examiner was unaware of CARB's regulatory activities, when in fact, the trial record would later reflect that Unocal did provide the examiner with CARB's recitation of the pertinent agency regulations." (internal citations omitted). *Union Oil Co. of Cal. v. Chevron U.S.A.*, 34 F. Supp. 2d 1222, 1224 (C.D. Cal. 1998).

154. Refiners appealed the claim construction order and the judgment of infringement, validity and enforceability of the '393 Patent. Their appeal specifically addressed the district court's claim construction which required that an accused product do more than meet the numerical property limitations of the patent—*i.e.*, that it be shown to be a motor gasoline as required by the claims. It also sought reversal of the inequitable conduct decision—*i.e.*, the district court's determination that Refiners had failed to show any inequitable conduct had occurred in connection with Unocal obtaining the patent. *Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 208 F.3d 989 (Fed. Cir. 2000).

155. The Federal Circuit affirmed the district court in all respects. *Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 208 F.3d 989 (Fed. Cir. 2000).

156. On February 20, 2001, the Supreme Court denied certiorari. *Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 531 U.S. 1183 (2001).

157. A few refiners have taken licenses from Unocal since the conclusion of the '393 trial and denial of certiorari. [redacted]

158. The litigating Refiners filed a post-appeal motion to reopen the trial record. In support of its motion, Refiners filed [redacted]

159. [redacted] Refiners sought to convince the court to not apply the damage award of 5.75 cents per infringing gallon to the accounting stage of the action. The court denied the motion on the grounds that Refiners produced no legitimate justification for not having made this factual argument at an appropriate time prior to trial.

160. Refiners continue to oppose the post-appeal accounting of damages in the United States District Court—most notably, by arguing about the determination about the RVP of their gasolines and about how the addition of ethanol affects the determination of infringement.

161. The Refiners have filed several requests for reexamination of the '393 Patent and Unocal's '126 Patent at the PTO. The reexaminations are pending.

162. In March of 2001, Refiner ExxonMobil made its request to the Federal Trade Commission that led to this action. RX 407.

IV. COMPLAINT COUNSEL HAVE FAILED TO PROVE THAT UNOCAL ENGAGED IN EXCLUSIONARY CONDUCT

A. Unocal Did Not Defraud CARB

1) What CARB Was Charged with Doing

163. According to the California Health and Safety Code, the control and elimination of air pollutants from motor vehicles—the primary cause of air pollution on California—is of "prime importance." CAL. HEALTH & SAFETY CODE § 43000(a), (b). It is of "prime importance" because

"the protection and preservation of the public health and well-being, and [] the prevention of irritation to the senses, interference with visibility, and damage to vegetation and property" are at stake. CAL. HEALTH & SAFETY CODE § 43000(b).

164. Under the California Clean Air Act, CARB is charged with "achiev[ing] the maximum degree of emission reduction possible from vehicular and other mobile sources in order to accomplish the attainment of the state [air quality] standards at the earliest practicable date." CAL. HEALTH & SAFETY CODE § 43018(a). CARB further has a legislative mandate to "take immediate action to implement both short- and long-range programs of across the board reductions in vehicle emissions. . . ." CAL. HEALTH & SAFETY CODE § 43000.5(d).

165. To further these objectives, CARB was to "take whatever actions are necessary, cost-effective, and technologically feasible in order to achieve, not later than December 31, 2000, a reduction in the actual emissions of reactive organic gases of at least 55 percent and a reduction in emissions of oxides of nitrogen of at least 15 percent from motor vehicles." CAL. HEALTH & SAFETY CODE § 43018(b). CARB was also required, "not later than January 1, 1992," to adopt "[s]pecification[s] of vehicular fuel composition." CAL. HEALTH & SAFETY CODE § 43018(b), (c)(4).

166. Furthermore, CARB was required to hold workshops no later than January 31, 1991, and to hold hearings to consider the adoption of fuel regulations by November 15, 1991. CAL. HEALTH & SAFETY CODE § 43018(d)(3).

2) The CARB Regulatory Process

a) Phase 1 Regulations

167. To carry out its charges under the 1988 California Clean Air Act Amendments, CARB embarked on two rulemaking proceedings to regulate low emissions, reformulated gasoline. Complaint ¶ 22; Answer ¶ 22.

168. Each of the rulemaking proceedings, known as Phase 1 and Phase 2, resulted in prescribed limits on specific gasoline properties. Complaint ¶¶ 23-24; Answer ¶¶ 23-24.

169. Under the Phase 1 regulations, CARB imposed a new, lower maximum limit for RVP. Complaint ¶ 23; Answer ¶ 23; RX 10 at CARB0000278. Specifically, CARB limited RVP to 7.8 psi statewide in "varying months from March to October, depending on the air basin. . . . ." RX 10 at CARB0000278. CARB also mandated the addition of a deposit control additive, banned the addition of lead to gasoline with a few exceptions, and required the addition of oxygen to winter gasoline. RX 10 at CARB0000278.

170. As part of its efforts to develop the Phase 1 regulations, CARB solicited and received input and/or research from numerous sources, including refiners, Auto/Oil and WSPA. [redacted]

171. CARB did not, however, ask refiners whether they had patents or pending patents during Phase 1. Simeroth Dep. (CARB), 7/9/03, at 25:17-25:20. Nor did CARB perform any searches of patents. Simeroth Dep. (CARB), 7/9/03, at 26:4-26:12.

b) The Two Phases of the Phase 2 RFG Rulemaking

172. The CARB Phase 2 RFG rulemaking proceeding had two phases. The first phase took place prior to the issuance of the formal notice of proposed rulemaking on October 4, 1991.

See RX 66 (Notice of Public Hearing). In this pre-notice phase, CARB staff conducted numerous private informal *ex parte* meetings with representatives of companies and organizations that were interested in influencing the rulemaking. CARB also conducted public workshops to discuss various regulatory approaches to regulating gasoline sold in the state of California. RX 167 (notice of June 11, 1991 workshop) and RX 184 (notice of August 14, 1991 workshop).

173. The second phase commenced with publication of a Notice of Public Hearing. The Notice is dated September 24, 1991. RX 66. However, CARB's Final Statement of Reasons for Rulemaking states that the notice was issued on October 4, 1991. RX 10 at CARB0000275.

174. In the post-Notice phase, interested parties submitted formal comments and were given an opportunity to participate in a two-day hearing on the proposed rule on November 21 and 22, 1991. This phase ended with the approval of the final rule at the close of the hearing on November 22. Nearly a year later, CARB published its Final Statement of Reasons for Rulemaking, in which CARB staff described reasons for the rule and responded to comments made by various rulemaking participants. RX 10.

175. Even during this more formal phase of the rulemaking, CARB had no prohibitions against *ex parte* contacts between agency decisionmakers and third parties interested in the outcome of the rulemaking. However, during the formal phase, Board members must keep track of all *ex parte* contacts. Kenny Dep. (CARB), 5/15/03, at 89:17-91:10.

c) Refiners and Other Stakeholders Lobby CARB During the Phase 2 Process

176. CARB met with many different interested parties during the development of the Phase 2 regulations. In its Initial Statement of Reasons, CARB noted that "numerous meetings with

representatives from industry" had been held to solicit information and "to discuss their special concerns." RX 52 at 11.

177. CARB met with representatives of many different groups on a regular basis from at least November 1990 through November 1991, when the Phase 2 RFG regulations were adopted. RX 178 (Fletcher's notes reflecting what entities and groups with which CARB met). Specifically, CARB met with individual refiners, individual auto companies, refining and auto industry trade groups, ethanol producers, small refiner interest groups, and petroleum marketing groups. RX 178; Simeroth Dep. (CARB), 7/9/03, at 88:2-88:13 (testifying that meetings occurred regularly during the period before the Notice of Public Hearing for the Phase 2 RFG regulations).

178. Many if not most refiners were among the interested parties who petitioned CARB as part of CARB's Phase 2 rulemaking process. Eizember Dep. (Exxon), 9/9/03, at 233:14-235:19; Eizember Dep. (Mobil), 9/9/03, at 241:25-242:24; Uihlein Dep. (BP), 8/27/03, at 83:1-83:7; Uihlein Dep. (ARCO), 8/27/03, at 78:5-79:12; Bea Dep. (Chevron), 9/3/03, at 19:13-20:22; Moyer Dep. (Texaco), 8/22/03. 14:3-15:10; Leider Dep. (Shell), 9/11/03, 12:18-12:25.

179. The refiners communicated with CARB in at least one of two ways: communicating individually and directly with CARB or CARB staff through private meetings and workshops, and/or communicating with CARB or CARB staff through the WSPA. [redacted]

180. When meeting directly with refiners, CARB understood that the refiners were meeting to express their concerns about what CARB might do; CARB also understood that the refiners wanted to express their desires about what they wanted CARB to do. Fletcher Dep. (CARB), 7/8/03, at 153:21-155:5.

(i) Auto/Oil's Role in the Regulatory Process

181. The Auto/Oil Air Quality Improvement Research Program ("Auto/Oil") was a cooperative, joint research program between three major domestic automobile manufactures—General Motors, Ford, and Chrysler—and fourteen petroleum companies, including Unocal. Complaint ¶ 50; Answer ¶ 50.

182. In accordance with the National Cooperative Research Act of 1984, the automakers and petroleum companies entered into an agreement, dated October 14, 1989 ("Auto/Oil Agreement"), to coordinate research that would help evolve a fuel composition that was both economical and low-emissions. Answer ¶ 50; Alley IH Dep. (Unocal), 6/24/03, at 23:5-12.

183. Specifically, the stated objective of the Auto/Oil Agreement was to "plan[ ] and carry[ ] out [ ] research and tests designed to measure and evaluate automobile emissions and the potential improvements in air quality achievable through use of reformulated gasoline (including reformulated gasoline using ethers and ethanol as oxygenates), methanol and other alternative fuels, and of developments in automotive technology including emission control systems, and to evaluate the relative cost-effectiveness of these various improvements." RX 226 at U0003029.

184. Although Auto/Oil established a framework for cooperative research, the Auto/Oil Agreement specifically provided that research activities under the Agreement would not constitute the "exclusive vehicle of research for any of the Members for research and testing in the fields

covered by the Program." RX 226 at U0003034; *see also* Answer ¶ 2; Alley IH Dep. (Unocal), 6/24/03, at 24:3-22. Rather, the Auto/Oil Agreement provided that each member retained the right to engage in independent research and that such research would "not be deemed to be undertaken by the Program." Answer ¶ 52; RX 226 at U0003040-41. The Auto/Oil Agreement denied its signatories any rights in another's independent research by reason of Agreement. RX 226 at U0003040.

185. Auto/Oil communicated its research to CARB to assist the RFG rulemaking proceedings. Youngblood Dep. (Texaco), 8/13/03, at 38:12-19; Hochhauser Dep. (ExxonMobil), 8/28/03, at 15:4-14.

(ii) WSPA's Role in the Regulatory Process

186. WSPA is an oil industry trade association representing companies engaged in petroleum exploration, production, refining, transportation, and marketing in the western United States. Complaint ¶ 56; Answer ¶ 56; Moyer Dep. (Shell), 8/22/03, at 10:15-12:11.

187. WSPA's purpose was to represent the interests of the petroleum industry in the western United States. Moyer Dep. (Shell), 8/22/03, at 10:15-12:11. Additionally, WSPA sponsored research when it members judged that such research was necessary to address various technical and/or regulatory issues related to reformulated gasoline. Moyer Dep. (Shell), 8/22/03, at 10:15-12:11.

188. WSPA also provided a common forum for its members to advance common industry positions with CARB, including the CARB board, executive and senior management, as well as staff. Moyer Dep. (Shell), 8/22/03, at 10:15-12:11. WSPA hoped that the information it provided to CARB would be utilized by CARB in "crafting their proposed regulations into final proposals"

and that those proposals would be "ultimately adopted as regulations." Moyer Dep. (Shell), 8/22/03, at 12:2-12:11.

3) Unocal's Intent in Its Advocacy Before CARB During the Phase 2 Process

a) Unocal Officially Adopts a Strategy of Pursuing a Predictive Model

189. Unocal's thinking with respect to its Phase 2 CARB advocacy strategy was predominated by a concern for its refining business. Lamb IH Dep. (Unocal), 1/16/02, at 84:14-86:12, 39:2-44:1.

190. Unocal's concern for its company's refining business was driven in part by the desire to avoid an oxygenate requirement, because Unocal did not have access to supplies of MTBE. Lamb IH Dep. (Unocal), 1/16/02, at 28:11-29:3; RX 157 at 002 (discussing Unocal's strategy with respect to the Phase 2 as involving a "[f]ocus on keeping oxygen levels unrestricted in CARB regulations.")

191. Unocal did not produce MTBE and its facilities were not capable of doing so. As a result, if oxygenates were to be required in California gasoline, Unocal would necessarily have to either build expensive facilities for such production—which it did not want to do—or would have buy it on the market at a disadvantageous cost. Lamb IH Dep. (Unocal), 1/16/02, at 28:11-29:3.

192. What Unocal's research revealed was that MTBE, contrary to what its largest producer ARCO was espousing, did not have an effect on emissions from modern technology cars. Instead, Unocal's research showed that the effects commonly attributed to MTBE were coming from a depressed T50 distillation point. Lamb IH Dep. (Unocal), 1/16/02, at 29:4-13. Since the inclusion of MTBE typically lowers the T50 in a gasoline, the true effects of T50 were being masked by those who assumed it was MTBE itself which had the emissions effects. Lamb IH Dep. (Unocal), 1/16/02,

at 29:4-13. Unocal was hoping that CARB would adopt a predictive model so that Unocal could then use its own formulation that did not include oxygenates. Lamb IH Dep. (Unocal), 1/16/02, at 29:14-22.

193. At the time Unocal management was contemplating Unocal's advocacy strategies for the Phase 2 rulemaking, the PTO had not allowed any claims in Unocal's patent application. Jessup Dep. (Unocal), 6/11/2003, at 146:21-25 (stating that the '393 patent did not issue until February 22, 1994); *cf.* Lamb IH Dep. (Unocal), 1/16/02, at 92:2-93:4 (stating that during the period of CARB advocacy, "[t]here was no patent").

194. Unocal selected Dennis Lamb, who headed Unocal's Fuels Issues Team, to head Unocal's advocacy efforts. Beach Dep. (Unocal), 6/9/03, at 12:5-13:19. Unocal's advocacy before CARB was twofold. First, Unocal management opposed any regulations by CARB, arguing in the big picture that a program to remove older and higher polluting cars from highways would be less expensive and more effective. *E.g.*, Beach IH Dep. (Unocal), 1/23/02, at 41:13-43:2.

195. While Unocal advocated for no regulations or for vehicle scrapping, Unocal's management also sought to preserve Unocal's flexibility through a "pure" predictive model—a performance-based regulation without limits on specific motor gasoline properties. Lamb IH Dep. (Unocal), 1/16/02, at 39:2-45:6; Beach IH Dep. (Unocal), 1/23/02, at 41:13-43:2, 62:6-23; Beach Dep. (Unocal), 6/9/03, at 23:21-25:4.

196. The underlying decision by Unocal to advocate such a pure predictive model is reflected in several memoranda authored by Dennis Lamb of Unocal. Beach Dep. (Unocal), 6/9/03, at 13:1-14:9.

197. On October 2, 1990, Lamb set out a background of arguments that had been previously made by others as to how Unocal might use the information from the 5/14 project, including the suggestion that an effort be made to have the specifications adopted by EPA and CARB reflect the 5/14 conclusions. RX 151 at U0101212.

198. Lamb noted in this memorandum that "[i]t has been suggested that the information from 514 be taken immediately upon confirmation to both EPA and CARB in an effort to have the specifications adopted reflect the 514 conclusions." RX 151 at U0101212; *see also* Lamb IH Dep. (Unocal), 1/16/02, at 39:2-44:1 (describing internal debate within Unocal).

199. Lamb argued against that suggestion—as memorialized in his October 2, 1990 memorandum—instead recommending that Unocal continue to argue for performance standards and against formula regulations. RX 151 at U0101212; *see also* Beach IH Dep. (Unocal), 1/23/02, at 134:20-136:12.

200. Lamb's recommendations were adopted by Unocal management on October 16, 1990. Lamb IH Dep. (Unocal), 1/16/2002, at 44:25-46:13, 156:13-157:18.

201. On February 18, 1991, Lamb described Unocal's officially adopted strategy in a memorandum to Roger Beach. RX 765. The focus of Unocal's strategy—and the purpose of its newly formed equivalency task force—was to advocate unrestricted (pure) equivalency provisions in CARB Phase 2 regulations. RX 765. Among other things, Unocal's strategy would also focus on keeping oxygen levels unrestricted in CARB regulations. RX 765.

202. Dr. Jessup explained Unocal's advocacy strategy: "And what Unocal wanted was a predictive model with no limits on any property. We didn't care what properties were in it." Jessup IH Dep. (Unocal), 1/25/02, at 41:3-6.

203. The reason Unocal wanted a predictive model was because it would allow it "to vary the properties of gasoline that were economical for [Unocal] to vary . . ." in order to produce "a low emissions gasoline." Jessup IH Dep. (Unocal), 1/25/02, at 41:9-43:5. The ability to vary the properties would save Unocal "a lot of money." Jessup IH Dep. (Unocal), 1/25/02, at 41:9-43:5.

b) Unocal Inventors Desire Recognition for Their Work

204. Wholly separate from formulation of Unocal's official advocacy strategy, the 5/14 scientists, Drs. Jessup and Croudace, were anxious to have their discoveries published and/or put to use and to receive credit for their work.

205. On November 27, 1990, Dr. Croudace wrote his manager, Wayne Miller, and told him that it is inevitable that other studies to be conducted in the immediate future would uncover for CARB two of the key variables to reducing emissions—including T50—and that CARB would then regulate these variables in their Phase 2 regulations. RX 764 at U0001818. Referencing others' previous or future studies, Croudace told Miller that if Unocal intended to use its results to its advantage in the marketplace and/or to influence CARB that "we have to use our information now." RX 764 at U0001818.

206. It is evident from the face of the memorandum that "influencing CARB" did not mean trying to convince CARB to include a T50 specification in its regulations, as Croudace acknowledged that it was inevitable that this would occur without Unocal's input. RX 764 at U0001818.

207. Croudace and Jessup peppered their superiors with various memoranda or presentations in which they raised various justifications for telling others about or otherwise using parts of their discoveries. For example, in a memorandum dated December 11, 1990, the scientists

argued for an opportunity to go to Auto/Oil and present an alternative analysis of Unocal data which would suggest that a mathematical construct of T50, T90 and T10 (known to the industry as a Driveability Index ("D.I.")) was a key variable to reduce emissions and not just the T90 parameter Auto/Oil was investigating. This option, they argued, would "leave the door open" for Unocal to use its research results and license gasoline formulations to other oil companies. CX 3005 at U0001830. The scientists also argued that allowing publication of research results could allow Unocal to avoid expensive equivalency testing with the EPA or that publishing could make their CEO a hero in the oil industry by showing scientifically that emissions from gasoline could be reduced.

208. The scientists also argued that because their work showed that low olefins reduced emissions, Unocal could benefit from a regulation that recognized this fact since one of its refineries did not produce olefins. Attempting to generate interest, Jessup and Croudace spoke of $114 million in royalties per year. CX 3005 at U0001830; Jessup IH Dep. (Unocal), 1/25/02, at 36:18-38:11; Croudace IH Dep. (Unocal), 2/20/02, at 271:19-273:1. Jessup and Croudace have both admitted in their depositions that this dollar figure was "totally off the wall" and "pulled out of the air" to try and get management's attention for their work as neither has any expertise in licensing. Jessup IH Dep. (Unocal), 1/25/02, at 36:18-38:11; Croudace IH Dep. (Unocal), 2/20/02, at 158:25-160:14, 271:19-273:1. In any event, the request to make such a D.I. presentation to Auto/Oil was not approved by management and did not go forward.

209. Persistent in the attempt to receive credit for their work and to show management that it should not cut scientists from Unocal's budget, a poster-board showing a billion dollar figure was created at some point in 1991, although the date has never been specifically determined. CX 2.

From time to time, Unocal had "in-house" presentations for their management where various poster-boards were set up to give management an idea of what various projects the scientists had been working on at their science and technology building. Jessup IH Dep. (Unocal), 1/25/02, at 91:5-94:18; Jessup Dep. (Unocal), 6/11/03, at 85:19-86:6. This poster-board was an attempt to get management's attention to the importance of having research work conducted. Jessup IH Dep. (Unocal), 1/25/02, at 94:24-95:13, 96:2-10. As the scientists both recognized, it was not their decision to make for Unocal as to how the research would be used or whether it would be used to advocate for or against any regulations.

4) CARB's Early Interest in the Regulation of T50

210. CARB learned that others, including Toyota, thought T50 was important to regulate before Unocal even met with CARB. According to CARB's Robert Fletcher, "it was clear through the proceedings that Toyota had—did believe that T50 was an important specification, had done some work on that issue." Fletcher Dep. (CARB), 7/8/03, at 133:24-135:2.

211. For example, in the fall of 1990, representatives from Toyota met with CARB staff to discuss the effects of distillation temperatures on exhaust emissions. RX 177. Toyota emphasized to CARB that a "T50 decrease of 10-15° C produces 12-25% Reduction of HC of CO emissions." RX 177 at CARB-FTC 0018090. Additionally, Toyota urged CARB: "It is Hoped the Range of T50 Distribution in the US Will Be Reduced. This will Contribute to Improved Air Quality." *Id.*; *see also* Fletcher Dep. (CARB), 7/8/03, at 135:6-137:6; Boyd Dep. (CARB), 8/22/03, at 187:6-20 (recalling a meeting with Toyota about T50, being intrigued by it and bringing material back to his staff).

212. CARB had also been told by Chevron that T50 was the dominant factor in the D.I., which Chevron was urging CARB to include in the Phase 2 regulations. Bea Dep. (Chevron), 9/3/03, at 38:14-40:9; RX 254; RX 256.

213. After CARB's meeting with Toyota in October 1990, CARB was clearly interested in the merits of T50 as a critical emissions driver and establishment of T50 as a specification. In a January 1991 communication regarding a potential study of the impact of various gasoline properties on emissions, CARB staff wrote that "it is critical for the purposes of the study and regulation to have lower T50." RX 113.

214. In November 1990, Unocal's Michael Croudace reported to his management that CARB had been told by GM and Toyota that T50 was a key variable for emissions and that it was inevitable that CARB would regulate T50. RX 764.

215. An "internal use only" CARB memorandum, dated January 30, 1991, detailed CARB's potential list of properties to regulate, including "distillation temperature distribution." RX 267.

216. Lobbying activities by various interested parties reinforced CARB's interest in learning about T50. For example, at a meeting with CARB staff in April 1991, Toyota urged CARB to regulate T50 and shared with CARB research disclosing the importance of T50 in reducing emissions. Venturini Dep. (CARB), 5/13/03, at 169:22-170:10, 174:15-175:7; *see also* RX 19.

5) Unocal Decides to Disclose Its Research to CARB

217. By May 10, 1991, the head of Unocal's advocacy effort, Dennis Lamb, had contacted CARB and requested a meeting in the future between CARB and Unocal, although he had not told

CARB the purpose of the meeting. CX 240 at U0077008. On that date, Lamb internally described what he envisioned the meeting's purpose to be:

> The purpose of the meeting should be to convince CARB staff that predictive equations or vehicle testing in particular should not include unnecessary minimums or maximums on fuel parameters (*e.g.* oxygen). Including such factors as minimum 2% oxygenate could be less cost-effective. If performance standards are met or exceeded the fuel parameters should be allowed to float to represent the individually optimized refinery.

218. The purpose in convincing them of this importance, however, was not to see T50 identified as a parameter. Lamb IH Dep. (Unocal), 1/16/2002, at 199:9-201:22 ("the basic purpose is in its context with a predictive model and the oxygen standard. And the ability to have flexibility within the model, and particularly for the oxygen standard, depended upon a good understanding of T50."); *see also* Beach IH Dep. (Unocal), 1/23/02, at 62:06-63:22 ("we did not want them to adopt T50 in any way, shape or form, we wanted them to use a predictive model to predict the results of exhaust emissions and leave all the parameters out of this thing").

219. To the contrary, Unocal felt that it was taking a calculated risk in sharing its T50 results with CARB. Beach IH Dep. (Unocal), 1/23/02, at 61:1-62:5 ("it was a risk we were taking that showing them that data they might fall in love with T50"). Unocal viewed identification of T50 as a parameter as a potential downside of sharing its results with CARB. Beach IH Dep. (Unocal), 1/23/02, at 61:1-62:5.

6) ARCO Presents its EC-X Fuel to CARB

a) Even Before the Phase 2 Process Began, CARB Was Aware of and Sought to Adopt Regulations Reflecting ARCO's Reformulated Fuel

220. Even before the Phase 2 rulemaking process began, CARB recognized ARCO as a leader in the oil industry in working to reduce air pollution by developing more environmentally acceptable fuels. RX 108 (CARB press release Aug. 15, 1989).

221. In fact, CARB Chairperson Jananne Sharpless, in a 1989 press release, commended ARCO's efforts to reformulate gasoline and identified those efforts as representing the direction of the CARB's future regulation. RX 108.

222. As early as 1989, CARB staff planned on proposing regulations that would require all California gasolines to have properties similar to ARCO's reformulated fuel. RX 109 (Nov. 30, 1989 Cackette letter to Sen. Leonard).

b) ARCO's EC-X Fuel Provided the Foundation for the Phase 2 Regulations

223. In developing its Phase 2 regulations, CARB staff internally discussed ARCO's EC-X formulation as establishing a "foundation" for the Phase 2 regulations. Boyd Dep. (CARB), 8/22/03, at 217:19-218:13.

224. During the Phase 2 process, ARCO had offered its EC-X fuel to the staff as an example of a viable fuel that could be considered when determining how to construct the Phase 2 regulations. Aguila Dep. (CARB), 7/24/03, at 119:10-121:11.

225. [redacted]

226. [redacted] Fletcher Dep. (CARB), 7/8/03, at 162:1-163:6. Fletcher admitted that this information was sought because CARB was already interested in regulating T50 before CARB met with Unocal. Fletcher Dep. (CARB), 7/8/03, at 163:1-3.

7) CARB Holds Its June 11, 1991 Workshop

227. After Unocal had scheduled its meeting with CARB, but before the meeting actually occurred, CARB held its first public workshop related to the Phase 2 regulations. The workshop was held on June 11, 1991. RX 167 at WSPA_FTC0007358; RX 181; RX 182 at CARB-FTC0057385.

228. CARB gave official public notice of the June 11, 1991 workshop on May 23, 1991. RX 167 at WSPA_FTC0007358.

229. The purpose of the workshop was to discuss the specifications which CARB had been considering for Phase 2 reformulated gasoline. RX 167 at WSPA_FTC0007358.

230. The workshop notice revealed that several parameters were being considered by CARB for regulation including "distillation distribution." RX 167 at WSPA_FTC0007359.

231. At the workshop, a team from CARB, including CARB staff member Jim Aguila made a presentation regarding CARB's efforts to develop the Phase 2 regulations. Aguila Dep. (CARB), 7/24/03, at 91:14-93:04; *see* RX 182 at CARB-FTC0057385-411 (visual aids for presentation).

232. During the presentation, CARB discussed the possibility of regulating a number of different parameters. RX 182 at CARB-FTC0057387-409; RX 767 at U0073446-49 (June 13, 1991 Kulakowski Memorandum).

233. CARB announced its intention to propose prescriptive requirements as opposed to a predictive model, because (in CARB's view) a predictive model would be too difficult to enforce, and would require extensive test data results and research to create. [redacted]

234. CARB was uncomfortable with the concept of a predictive model because of a belief that it would make enforcement more difficult and they wanted to be able to check every parameter of gasoline at any stage of distribution. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 153:24-154:13.

235. However, CARB indicated that it was willing to consider the use of a predictive model. RX 181; Simeroth Dep. (CARB), 7/9/03, at 110:7-112:12.

236. The presentation also discussed how CARB would compute the cost of the Phase 2 regulations. The presentation slides, however, only contained one slide regarding cost analysis for the Phase 2 regulations. RX 182 at CARB-FTC 0057400; Aguila Dep. (CARB), 7/24/03, at 91:23-93:04; Fletcher Dep. (CARB), 7/8/03, at 177:23-178:17 (admitting that at the June 11, 1991 meeting the "only cost analysis methodology shown" involved linear programming).

237. CARB represented that it planned to do its own cost analysis as to what it thought the cost of the proposed RFG would be by using a yet-to-be-developed linear program model. RX 182 at CARB-FTC0057400; [redacted]

238. Additionally, at this workshop, Toyota presented information regarding the effects of T50 on emissions. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 93:6-94:13; RX 767 at U0073448; [redacted]

239. In fact, at its June 11, 1991 workshop, CARB requested information regarding T50. RX 767 at U0073448.

8) Unocal Meets with CARB on June 20, 1991

240. Unocal first met with CARB on June 20, 1991. Lamb IH Dep. (Unocal), 1/16/02, at 33:20-34:13. This meeting was held at CARB's offices in Sacramento, California. Simeroth Dep. (CARB), 7/9/03, at 90:12-15.

241. Dennis Lamb, Peter Jessup, Michael Croudace, Wayne Miller, and Michael Kulakowski of Unocal attended the meeting. RX 153 at U0083580.

242. Peter Venturini, Dean Simeroth, Robert Fletcher and John Courtis attended on behalf of CARB. *See* Croudace IH Dep. (Unocal), 2/21/02, at 218:12-220:6; Fletcher Dep. (CARB), 7/8/03, at 178:21-25; Simeroth Dep. (CARB), 7/9/03, at 88:2-25.

243. Unocal discussed three specific subjects at the meeting. Lamb IH Dep. (Unocal), 1/16/02, at 34:17-35:21; *see also* RX 153 at U 0083581. The first of these subjects is revealed in a slide presentation that Unocal left behind with CARB. RX 24 at 001 (this slide entitled "Action Plan" urges CARB to "AVOID RULES OVERLAP - OPT OUT 211(c) - DON'T OPT IN.") Lamb, largely through an oral presentation, specifically tried to persuade CARB that it could opt out of the Clean Air Act. Lamb IH Dep. (Unocal), 1/16/02, at 34:17-35:21. Unocal did not want to be straddled with both federal and state reporting requirements. Lamb IH Dep. (Unocal), 1/16/02, at 34:17-35:21.

244. The next two subjects, are also revealed in the slide presentation that Unocal left behind with CARB. *See* RX 24. Specifically, Unocal presented the results of its research in order to convince CARB to adopt a predictive model and to not institute an oxygenate requirement. *See* RX 24 at 001 (this slide entitled "Action Plan" lists two other points: "ADOPT PREDICTIVE MODEL" and "AVOID O2 MANDATE").

245. In their effort to persuade CARB to adopt a predictive model and not adopt an oxygenate requirement, Unocal scientists disclosed the results from the one-car and ten-car tests they had conducted. RX 24 at 006-013, 016-034; *cf.* Croudace IH Dep. (Unocal), 2/21/02, at 228:7-12 ("At this meeting we just simply presented results. We didn't give them the raw data.") They also disclosed the form of equations without coefficients from the ten-car study. RX 24 at 022.

246. In so doing, Unocal's representatives explained that emissions from various fuels could be predicted by understanding the relationships and effects of their properties. *Id.*; Beach IH Dep. (Unocal), 1/23/02, at 41:16-43:2, 135:23-136:12 (Unocal presented its data in an effort to convince CARB to adopt a predictive model without caps on properties).

247. In a later review of the June 20 meeting with Unocal's Fuels Issues Team, it was clearly expressed that CARB became optimistic about the applicability of a predictive model and furthermore "[i]f CARB becomes willing to seriously pursue a predictive model, Unocal will need to share all 514 data." RX 153 at U 0083581.

248. Unocal representatives specifically avoided advocating or drawing attention to any specific fuel property at the June 20 meeting. *E.g.*, Croudace IH Dep. (Unocal), 2/21/02, at 243:15-244:11 (stating that during the June 20, 1991 meeting, "we didn't want to level any focus on any one

parameter or two parameters, because that is exactly what we're trying to eliminate"); *see also id.* at 242:5-243:7.

249. Unocal representatives explained that all the information it provided was confidential to Unocal. RX 24; Fletcher Dep. (CARB), 7/8/03, at 178:21-179:13; *see also* RX 2; *cf.* Venturini Dep. (CARB), 5/13/03, at 134:1-135:5 (admitting that CARB copy of Unocal presentation has the handwritten term "Confidential" on the front).

9) Unocal Provides Its Equations to CARB

250. On July 1, 1991, upon CARB's request, Unocal provided CARB with actual emissions equations developed from the ten-car study. RX 2; Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 28:5-7 (equations were derived from the ten-car study).

251. The equations were attached to a cover letter drafted by Mike Kulakowski of Unocal on behalf of Dennis Lamb. The letter was addressed to Peter Venturini of CARB. RX 2. Mr. Kulakowski had been asked by Mr. Lamb to write a letter to CARB transmitting the equations. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 26:4-24.

252. In the cover letter, Unocal requested that CARB hold the equations confidential, "as we feel that they may represent a competitive advantage in the production of gasoline." RX 2.

253. CARB cannot use confidential information in its rulemakings. Simeroth Dep. (CARB), 7/9/03, at 124:12-125:18; Boyd Dep. (CARB), 8/22/03, at 146:19-147:9; Venturini Dep. (CARB), 5/13/03, at 29:15-18.

254. Unocal indicated, however, that if CARB would pursue "a meaningful dialogue on a predictive model approach to Phase 2 gasoline, Unocal will consider making the equations and underlying data public as required to assist in the development of a predictive model." RX 2.

255. In its letter, Unocal did not indicate that it would release the confidentiality of the data or equations for use in the Phase 2 regulations. *See* RX 2; *see also* Simeroth Dep. (CARB), 7/9/03, at 115:2-10. Instead, it specifically said it would consider release for use in a predictive model. RX 2; *see also* Lamb IH Dep. (Unocal), 1/16/02, at 136:5-22.

256. Additionally, nowhere in the July 1, 1991 letter did Unocal indicate that CARB had requested or that Unocal should consider releasing confidentiality on its June 20, 1991 presentation slides. *See* RX 2; *see also* Simeroth Dep. (CARB), 7/9/03, at 113:17-114:20.

10) CARB Proposes a Preliminary Draft Regulation Mimicking ARCO's EC-X and Without the Use of the Unocal Data

257. By July 21, 1991, CARB, in an internal draft of its proposed regulations specified a T50 value of 190 degrees Fahrenheit. RX 198 at CARB-FTC0030878 (§ 2262.6(b) (Distillation Temperatures)); Simeroth Dep. (CARB), 7/9/03, at 143:9-18. On that same day, an internal draft proposed "[s]tarting January 1, 1996, no person shall sell, offer for sale, dispense, supply, offer for supply, or transport California gasoline which has a 50 percent distillation temperature which exceeds 200 degrees Fahrenheit." RX 184 at CARB 10003057 (§ 2262.6(b)). [redacted]

258. Then on August 1, 1991, CARB issued a Notice of Public Consultation Meeting to discuss Phase 2 Reformulated Gasoline Specifications. RX 184. CARB attached a copy of its preliminary draft Phase 2 regulation to that Notice. RX 184 at CARB1003041-80. Although the draft regulation pertaining to T50 was also dated July 21, 1991, it proposed a T50 specification

limited to 200°F. RX 184 at CARB10003057 (§ 2262.6(b) (Standards for Distillation Temperatures)).

259. The Phase 2 preliminary draft regulation also expressed CARB's intent to develop a predictive model. RX 184 at CARB10003064-65 (§ 2265 (Certified Gasoline Formulations Resulting in Equivalent Emission Reductions Based on a Predictive Model)). In doing so it indicated:

> EXPLANATORY NOTE: The ARB intends to develop predictive models based on past and current vehicle emissions testing programs. The ARB is interested in obtaining any information or data that should be considered in developing the models.

Id.

260. The draft regulation was not developed with the use of Unocal data. Unocal did not provide its data to CARB until at least July 25, 1991. RX 327 at 001, 003; RX 522. CARB, however, did not load any of Unocal's data onto its data base until at least August 2, 1991. RX 122 at 005; Cleary Dep. (CARB), 8/7/03, at 78:6-79:9; *see also* RX 121 at 002 (letter from CARB attorney Tom Jennings indicating the earliest load date onto the data base at the Teale Data Center was August 2, 1991).

261. Peter Venturini testified that CARB would have never used Unocal's data or the results of Unocal's test program without first reviewing the robustness of the data. Venturini Dep. (CARB), 5/13/03, at 128:21-129:13 (testifying that CARB would have had to "determine ourselves whether or not we felt that the Unocal test program was robust enough and a good test program so we could rely on the results . . .").

262. In fact, Attorney Matthew Goldman for the State of California represented that CARB had no proof or documentation that indicated that anyone accessed the data from August 1991 through October 1991. Chan Dep. (CARB), 8/29/03, at 26:3-18.

263. Additionally, as of both July 21, 1991 and August 1, 1991, Unocal had not waived confidentiality on any of the information, including the data, that it provided to CARB. *E.g.*, Courtis Dep. (CARB), 8/28/03, at 206:2-207:3.

264. Days after the proposed regulations had been sent out to the public and before CARB's public workshop, staff prepared an internal briefing paper specifically [redacted]. RX 268 (internal briefing paper dated August 8, 1991). There is no mention of Unocal, or its disclosures (neither data nor equations), in those contemporaneous notes. *Id.*

11) CARB Holds Its August 14, 1991 Workshop

265. CARB held its second Phase 2 workshop on August 14, 1991. RX 184 at CARB10003030. CARB gave notice of this meeting on July 17, 1991, and provided supporting documents in a supplemental notice dated August 1, 1991. *Id.*

266. The notice provided that a number of specifications were being considered for the Phase 2 regulations including distillation temperatures. RX 184 at CARB10003030-31.

267. The notice also informed the public that CARB would be discussing the status of its refinery linear programming modeling efforts at the workshop. RX 184 at CARB10003031.

268. At the workshop CARB discussed the proposed specifications in turn. *See, e.g.*, RX 27 (notes produced by CARB of August 14, 1991 workshop).

269. As to the proposed distillation standards, ARCO offered its support for the specifications, indicating that CARB should elect to regulate T90 and T50, but not D.I. RX 27 at CARB10001062.

270. General Motors Corporation also gave a presentation at the August 14, 1991 workshop. RX 185. As part of the presentation, GM proposed limits for the properties CARB was considering regulating. Among these recommendations was a recommendation of 200° F for T50. RX 185 at CARB-FTC0058586; Fletcher Dep. (CARB), 7/8/03, at 209:20-210:19.

12) Unocal Provides and Lifts Confidentiality on Its Data

271. Throughout Unocal's interactions with CARB, CARB conveyed that it was interested in the possibility of a predictive model. Some time after Unocal's July 1, 1991 letter, CARB's interest became more concrete. It conveyed to Unocal that it was interested in pursuing a predictive model and requested Unocal's data for such purpose. Lamb IH Dep. (Unocal), 1/16/2002, at 135:18-137:10.

272. Unocal was unaware, however, that CARB had likely decided in June of 1991 to pursue a predictive model only after adopting specifications with caps. Simoroth Dep. (CARB), 7/9/03, at 102:12-104:7. CARB's Dean Simeroth does not recall ever specifically telling this to Unocal.

273. Thus Unocal, in response to CARB's request, provided CARB with its data on or about July 25, 1991. RX 327 at 001, 003; RX 522.

274. When printed out, the data consisted of 17 pages of columns of numbers, of which a sample is shown below (RX 1152):

study	vehicle	fuel	hccmp	cocmp	noxcmp	arom	olef	satur	mtbe	benzen	sulfur	ron	mon	t10	t50	t90	rvp
Unocal	9	A	0.23	2.54	0.11	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	9	A	0.22	2.16	0.1	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	9	A	0.24	2.39	0.11	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	9	A	0.2	2.81	0.14	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	9	A	0.19	2.08	0.1	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	146	A	0.3	2.48	0.22	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	146	A	0.21	2.17	0.19	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	146	A	0.27	1.93	0.22	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	385	A	0.82	5.4	1.23	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	385	A	0.9	6.99	1.28	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	385	A	0.99	8.86	1.28	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	50M	A	0.22	1.12	0.83	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	50M	A	0.2	1.24	0.93	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	50M	A	0.2	0.99	0.93	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	7BC	A	0.46	2.17	0.89	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	7BC	A	0.39	1.91	0.76	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	7BC	A	0.34	1.49	0.89	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	7BC	A	0.39	1.97	0.9	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	815	A	0.18	1.93	0.3	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	815	A	0.22	1.84	0.39	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	815	A	0.19	2.11	0.32	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2
Unocal	826	A	0.27	3.12	0.86	9.6	0	90.4	0.		10	94	89.4	122	206	291	9.2

275. CARB understood that the emissions data on this disk was to be treated as confidential. Simeroth Dep. (CARB), 7/9/03, at 112:13-115:10.

276. To facilitate the use of Unocal's data in developing a predictive model, the staff asked Unocal to lift the confidentiality designation that it had attached to its data. Lamb IH Dep. (Unocal), 1/16/02, at 135:18-137:10; *see also* Simeroth Dep. (CARB), 7/9/03, at 122:24-124:7.

277. Peter Venturini, testifying as a Rule 3.33(c) witness on behalf of CARB, had no knowledge of the specific individual that made the request, nor did he have any knowledge of the specific words that were used in making this request. Venturini Dep. (CARB), 5/13/03, at 29:7-30:4, 30:25-31:12.

278. Without the ability to make the data public, CARB could not consolidate it with other data in the mega-database of vehicle tests that CARB was compiling. Fletcher 1996 Dep. (CARB), 6/17/96, at 203:8-204:12.

279. Dennis Lamb of Unocal responded to CARB's request by sending a letter entitled "PUBLIC AVAILABILITY OF UNOCAL RESEARCH DATA" on August 27, 1991, to James D. Boyd of CARB. RX 3 at U0073023. The letter was also copied by fax to Dean Simeroth of CARB. *Id.* at U0073022.

280. The text of the letter states:

> On June 20, 1991, certain Unocal representatives met with Peter Venturini and other members of his staff. During that meeting, we presented the results of three phases in Unocal's Vehicle/Fuels testing program. We subsequently made the data base available to the staff and agreed to make the data public if necessary in the development of a predictive model for use in the certification of reformulated gasoline.
>
> The staff has now proposed to develop such a predictive model and requested that we make the data public.
>
> Please be advised that Unocal now considers this data to be non-proprietary and available to CARB, environmental interest groups, other members of the petroleum industry, and the general public upon request.

RX 3 at U0073023.

281. Unocal's August 27, 1991 waiver of confidentiality on its data occurred five weeks after CARB prepared the July 21, 1991 internal preliminary draft regulations and nearly four weeks after CARB published them its August 1, 1991 notice. RX 3; RX 198; RX 184.

a) Unocal Lifted Confidentiality on Its Data Alone

282. There is a difference between data, equations and patentable inventions. Venturini Dep. (CARB), 5/13/03, at 31:25-32:24 ("Data are the actual results from testing and so forth, and

equations may be relationships that you derive from analysis of the data.") Inventions may be derived from data and from equations but are not the same as data or equations. Lamb IH Dep. (Unocal), 1/16/02, at 142:18-143:18; Linck Rpt. at 4.

283. Unocal's August 27, 1991 letter lifted confidentiality on its data alone. Lamb IH Dep. (Unocal), 1/16/02, at 135:18-137:10 (stating that August 27, 1991 letter was written in response to request from CARB to use Unocal's data for the predictive model).

284. Unocal's letter did not lift any confidentiality or proprietary designation/rights in the equations or extend in any other way beyond the raw data to which it referred. Lamb IH Dep. (Unocal), 1/16/02, at 142:18-143:7 ("It was a lot of data. But that's all it was. It was data."); *cf.* Jessup IH Dep. (Unocal), 1/25/02, at 119:23-120:13 (testifying that after the letter was sent saying "You can use the data now," Unocal passed out the data on floppy disks "to CARB and whoever else requested it.").

285. The fact that the Unocal August 27, 1991 letter lifted confidentiality on the data alone was corroborated by CARB attorney W. Thomas Jennings. *See* RX 327 at 002. (In a letter from W. Thomas Jennings to Unocal outside counsel David W. Beehler, Mr. Jennings stated that "[i]t appears to ARB staff that the diskette we were able to copy, and a copy of which is enclosed, is the original diskette containing the data base referred to in Dennis Lamb's August 27, 1991 letter . . . ."). In fact, the data base produced by CARB contained nothing but raw data. RX 522.

b) Unocal Lifted Confidentiality of Its Data So That CARB Could Use Its Data in the Development of a Predictive Model

286. Unocal had made it very clear to CARB that it was providing data for CARB to use in the development of a predictive model. Venturini Dep. (CARB), 5/13/03, at 51:4-52:2.

287. Unocal's intent to lift confidentiality for use in the predictive model is clearly expressed in contemporaneous documents.

288. On August 22, 1991, Unocal's Fuels Issues Team held a meeting. Unocal employee Mario Aguila prepared the minutes of the meeting. RX 155.

289. At the meeting, Mike Kulakowski reviewed the CARB's August 14, 1991 workshop and specifically the topic of "predictive modeling." RX 155 at U 0083538.

290. The meeting minutes reflect Unocal's intent in drafting the August 27, 1991 letter. "In order to insure that the predictive model is as well-founded as possible, Unocal will send CARB a waiver to release the 514 Project emissions data." RX 155 at U 0083539.

291. The minutes continued, "CARB is interested in having a predictive model workshop in the near future. Unocal will notify CARB that it will waive its rights to confidentiality of the 514 Project data."

292. The day after the August 27, 1991 letter was sent, Dennis Lamb confirmed in a memorandum to Roger Beach (also of Unocal), his understanding of the function of the letter. "We have agreed to make our 5/14 data public in order for CARB to use it at the [predictive model] workshop and in technical justification for the model." RX 157 at 001.

293. Both the text of the August 27, 1991 letter and Unocal's conduct demonstrate that Unocal provided its 5/14 data to CARB and made the data publicly available so it could be used in the development of a predictive model.

c) The Use of the Term Non-Proprietary in the Letter by Unocal Did Not Give Away a Royalty-Free License to Unocal's Pending Patents, Nor Did CARB Interpret It in Such a Manner

294. Complaint Counsel's economic expert, Professor Shapiro, [redacted]

295. Based on the plain text of the letter and the testimony of Unocal and CARB witnesses as to their intent regarding and interpretation of the letter respectively, there is no basis for this assumption. [redacted]

296. The text of the August 27, 1991 letter makes no mention of a pending patent application or intellectual property rights, much less a "royalty-free license." RX 3 at U0073023.

297. Instead, the letter references a data base previously made available to staff. RX 3 at U0073023. Unocal specifically stated that it "now considers this data to be non-proprietary and available to CARB, environmental interest groups, other members of the petroleum industry, and the general public upon request." *Id.*

298. The use of the term "non-proprietary" was, according to the author of the letter, simply intended to convey that the data was no longer confidential. Similarly, CARB staff interpreted the letter as giving CARB staff access to the data so it could be included in the mega-database CARB was compiling. Fletcher Dep. (CARB), 6/17/96, at 204:24-205:14; *see also* Venturini Dep. (CARB), 5/13/03, at 115:18-116:20.

299. That the purpose of the letter was to lift confidentiality of the data from the data base is supported by the title of the letter, which is "PUBLIC AVAILABILITY OF UNOCAL

RESEARCH DATA." RX 3 at U0073023; *see also* Venturini Dep. (CARB), 5/13/03, at 115:18-116:12 (stating that CARB "received a letter in August from Unocal saying, you know, they're relinquishing their confidentiality, making this available.") It did not mention or imply any release of patent rights in Unocal's patentable or patent-pending inventions. RX 3 at U0073023; *see also* Simeroth Dep. (CARB), 7/9/03, at 123:12-124:7.

300. Venturini also understood this to be the purpose of the letter. In fact, Venturini testified that at the time CARB received the letter, "the thought did not occur" to Venturini that it had anything to do with patent rights. Venturini Dep. (CARB), 5/13/03, at 69:19-22.

301. At no time did Unocal state, suggest or imply that it had not developed patentable or patent-pending inventions from the research and data that it presented to CARB. RX 3 at U0073023; *cf.* Simeroth Dep. (CARB), 7/9/03, at 123:18-124:7; Venturini Dep. (CARB), 5/13/03, at 69:19-22.

d) Unocal's Designation of Its Data as Non-Proprietary Was Not Misleading

302. By designating its data as non-proprietary, Unocal intended to lift trade secrecy status from the data (by making it non-confidential) and to make it available for use by CARB and others.

303. As has been recognized in the legal arena, "[a]ll trade secrets and confidential information are also company proprietary information," John F. Hornick, Trade Secrets: What Your Company Needs to Know (Oct. 1, 2003), at http://www.finnegan.com/publications/news-popup.cfm?id=858&type=article. In fact, "many business people and documents use the terms 'trade secret,' 'confidential,' and 'proprietary' interchangeably or inconsistently." *Id.*

304. Although trade secrets and confidential information may have the same meaning in some contexts, they do not mean the same in other contexts, and the term "proprietary information"

is often used generically. John F. Hornick, Trade Secrets: What Your Company Needs to Know (Oct. 1, 2003), at http://www.finnegan.com/publications/news-popup.cfm?id=858&type=article.

305. Two internal Unocal communications prepared shortly before and after the August 27 letter demonstrate Unocal's intent.

306. The first is a summary of an internal strategy meeting that took place five days before the date of the letter, which makes clear that Unocal intended simply to release the confidentiality of its data in order to persuade CARB to adopt a flexible predictive model: "In order to insure that the predictive model is as well-founded as possible, Unocal will send CARB a waiver to release the 514 Project emissions data." RX 155 at U 0083539. The memorandum further underscores that the purpose of the waiver solely to lift confidentiality restrictions: "Unocal will notify CARB that it will waive its rights to confidentiality of the 514 Project data." *Id.*

307. The second communication is a memorandum prepared by Dennis Lamb on August 28, 1991, the day after Mr. Lamb sent his letter to CARB. In that memorandum, Mr. Lamb stated:

> CARB has advanced from agreeing to "consider" a predictive model to proposing that a model be included as a certification alternative along with a recipe fuel and vehicle testing.
>
> CARB has not yet developed a specific proposal to define the model but Unocal has been invited to participate in a workshop for that purpose. We have agreed to make our 5/14 data public in order for CARB to use it at the workshop and in technical justification for the model. . . .
>
> At this point in time all activity is concentrated with CARB staff with the next step the actual development of a useful model.

RX 157.

308. That "non-proprietary" in context meant simply that Unocal was removing the "confidential" limitation on use of the data is confirmed by CARB's Peter Venturini, who testified:

A. This letter refreshes my—my memory that around August 27 Unocal agreed to release the data.

Q. Okay. And what did you understand was the permission that Unocal was giving you at that time?

[Objection noted]

A. Well I can just reiterate the letter indicates that they're releasing the data to be publicly available because we have proposed to develop a predictive model.

Venturini 1996 Dep. (CARB), 6/18/96 136-37; *see also* Venturini Dep. (CARB), 5/13/03, at 115:6-116:20.

309. As CARB's Rule 3.33(c) witness in the current case, Mr. Venturini testified, that had Unocal used the term "non-confidential" instead of "non-proprietary," CARB would have interpreted Unocal's letter exactly as it did. Venturini Dep. (CARB), 5/14/03, at 503:6-10.

310. Dean Simeroth (the CARB representative who received the August 27 letter directed to James Boyd) similarly testified:

Q. And you understood that through this Exhibit 656 Unocal was making its data previously which had been marked confidential, it was now making it public?

[Objection noted]

A. Reading the letter, it would indicate or indicates that they were making the previously submitted data available.

Simeroth 1996 Dep. (CARB), 6/20/96, at 56:21-57:3.

311. Bob Fletcher, another CARB staff member, also testified:

A. I don't recall who asked Unocal to make the date non-confidential. I can't remember whether I did or—or one of my staff did or Dean did or Peter did, but we did ask Unocal to make the data available so that we could include it in the predictive model and felt that it was a data set that was very important in the development of the—he predictive model, which again at that point was—as still considered as part

> of the Phase 2 regulation. So in order—think it's consistent with what I said earlier, that we were getting the data, we were evaluating it, and it wasn't until a certain point in time that we needed to consolidate it in which the other data. In order to do that, we had to make it non-confidential. If they would have kept it as confidential data, we would not have been able to include it into the—the mega-database of all the vehicle tests.

Fletcher Dep. (CARB), 7/8/03, at 203:21-204:25.

312. CARB's Executive Director, to whom Unocal addressed the waiver of confidentiality, could not even recall Unocal's communication. Boyd Dep. (CARB), 8/22/02, at 182:22-184:18. Mr. Boyd testified in general that the term "proprietary" is often used as a synonym for confidential. Boyd Dep. (CARB), 8/22/03, at 209:21-213:9.

313. Mr. Boyd further testified that he understood Unocal's August 1991 letter to signify that Unocal's data could be "made public and utilized in—in trying to come up with a—a—regulation." Boyd Dep. (CARB), 8/22/03, at 183:7-21.

314. This understanding was consistent with the longstanding practice of California refiners, in their dealings with CARB, to use the term "proprietary" as a synonym for "confidential."

315. Various refiners have used "proprietary" to mean confidential in the ordinary course of business and in submitting materials to CARB. [redacted]

316. [redacted]

[redacted]

13) Independent of Anything Unocal Had Disclosed, CARB Decides to Go with ARCO's Twofold Recommendation

317. After CARB's August proposal, CARB continued to modify its regulations [redacted]

318. On [redacted], before CARB staff's final Proposed Regulations were public, [redacted]

319. CARB also agreed, [redacted]

320. [redacted]

321. CARB's Executive Officer, James Boyd, subsequently testified in his 1996 deposition that is was "wrong" for Mr. Fletcher [redacted] Boyd 1996 Dep. (CARB), 6/19/96, at 111:13-21.

322. Mr. Boyd, admitted that public disclosure of the fact that CARB staff had modeled its regulations on ARCO's EC-X formulation would have subjected the agency to criticism. Boyd Dep. (CARB), 8/22/03, at 217:19-218:13.

323. As discussed in the following findings, CARB staff officially proposed its regulations on October 4, 1991. In his prepared comments to the Board at the November 21, 1991 CARB meeting, ARCO representative George Babikian admitted that, "EC-X's formula is very close to the October 4 formula" in CARB's proposed rule. CX 1599 at 003.

14) CARB Publishes Its October 4, 1991 Proposed Regulations

324. On October 4, 1991, CARB released its "Proposed Regulations" for California "Phase 2 Reformulated Gasoline Specifications." RX 52. The Phase 2 reformulated gasoline proposal consisted of a proposed limits on a comprehensive set of specifications. Thus, CARB staff proposed imposing caps on several specific gasoline properties including sulfur, benzene, oflefins, oxygen, T90, T50, aromatics, and RVP. *Id.* at 010 (Table I-2).

Table I-2

Proposed Specifications for California Phase 2 Reformulated Gasoline

Fuel Parameter	Typical California Gasoline	Flat Limit For Producers	Standard for Producers Using Averaging	"Cap" For All Gasoline a/
Sulfur, ppmw	150	40	30	80
Benzene, vol %	2.0	1.00	0.80	1.20
Olefins, vol %	9.9	5.0	---	10.0
Oxygen, wt %	0	1.8-2.2	---	2.7 (max) 1.8 (min) b/
T90 (°F)	330	300	---	330
T50 (°F)	220	210	---	220
Aromatic HC, vol %	32	25	20	30
RVP, psi c/	8.5	7.0	---	7.0

a/ Applies to all gasoline throughout the distribution system, including fuels qualified under modeling or testing options.
b/ Applies to the wintertime control periods only.
c/ Applies to the summertime control periods only.
--- Averaging is not proposed for these parameters.

325. Specifically included among these recommendations was a producer cap on T50 of 210°F. RX 52 at 010, App. A at 108 (§ 2262.6(b)).

326. The Proposed Regulations were supported by a more detailed explanation and analysis in CARB staff's October 4, 1991 "Technical Support Document." RX 5.

327. Both the Proposed Regulations and the Technical Support Document included staff's estimates of the costs of compliance with the Proposed Regulations and a corresponding cost-effectiveness analysis. RX 52 at 071-72 (predicting costs of compliance ranging from 12 to 16 cents per gallon (14 to 20 cents per gallon with an added fuel economy penalty)), 075-78 (setting forth cost-effectiveness of $8,000-$12,000 per ton of pollutant removed); RX 5 at CARB0000841 (costs of compliance), CARB0000846 (cost-effectiveness).

328. The October 4, 1991 Proposed Regulations did not include a predictive model, but rather indicated that CARB staff had not yet completed its analysis of the data. RX 52 at 046.

329. Thereafter, CARB solicited comments as part of its rulemaking record. *See, e.g.*, Venturini Dep. (CARB), 5/15/03, at 556:20-557:7 (explaining 45-day comment period after staff proposal).

15) CARB Holds a Hearing to Approve the Phase 2 Regulations

330. CARB held a meeting on November 21 and 22, 1991, to consider the subject of the proposed Phase 2 regulations. RX 60 at CARB0001046, CARB0001400.

331. CARB issued the official notice for the meeting on September 24, 1991, and it was mailed to interested parties on October 4, 1991. RX 66 at CARB0000536, CARB0000538, CARB0000546.

332. The two-day hearing was held in Los Angeles, California. RX 66 at CARB0000538; RX 60 at CARB0001046, CARB0001400.

333. As of November 21 and 22, 1991, there were nine members of CARB. Sharpless Dep. (CARB), 8/6/03, at 40:5-9. Unocal did not meet with any of the nine CARB board members privately before the Phase 2 hearing. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 111:10-24.

334. Of those nine members, Mr. Bilbray, Dr. Boston, Mrs. Ichikawa, Mr. Lagarias, Supervisor Riordan, Dr. Wortman and Chairwoman Sharpless identified themselves as present at the meeting on November 21, 1991. Initially board members Hughan and Weider were not present. RX 60 at CARB0001048-49. Mayor Hughan, however, took her seat after the meeting began. RX 60 at CARB0001073.

335. On November 22, 1991, Mr. Bilbray, Dr. Boston, Mayor Hughan, Mrs. Ichikawa, Mr. Lagarias, Dr. Wortman and Chairwoman Sharpless identified themselves as present. Board members Riordan and Weider were not present. RX 60 at CARB0001401.

336. Chairwoman Jananne Sharpless presided over the meeting. RX 60. At the meeting, CARB staff presented its proposal to the board and numerous individuals testified on behalf of various parties, including large refiners, small refiners, auto manufacturers, California government entities, and public interest groups. *Id.*

a) CARB Presents Its Modified Proposal

337. CARB staff members Robert Fletcher, then Manager of the Fuels Section of the Stationary Source Division and Dan Donohoue, then Manager of the Technical Analysis Section presented the Phase 2 staff presentation. RX 60 at CARB0001052-53.

338. The Phase 2 staff presentation contained modifications from the original October 4, 1991 staff proposal. Venturini Dep. (CARB), 5/15/03, at 555:14-556:1.

339. The modifications primarily allowed for averaging a number of the specifications to provide more flexibility to the refiners. Venturini Dep. (CARB), 5/15/03, at 561:22-562:9.

340. ARCO's George Babikian was the first refiner allowed to speak and argued in support of the regulations. RX 60 at CARB0001184.

b) Unocal Testifies Against the Proposed Regulations and Advocates for a Predictive Model

341. At the CARB Phase 2 meeting, Dennis Lamb presented oral testimony on behalf of Unocal. Through that testimony, Unocal expressed its desire that CARB adopt a predictive model. RX 60 at CARB0001419-21.

342. Throughout the Phase 2 regulatory process, Unocal tried to demonstrate how the concept of a predictive model would work and did not argue for the adoption of a particular composition of gasoline as a regulation. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 140:25-143:17.

343. Unocal knew, however, by the November 1991 CARB meeting, that no predictive model was immediately forthcoming. RX 34 at CARB0001778. As proposed, the Phase 2 regulations were not scheduled to go into effect until 1996. *E.g., id.* at CARB0001782.

344. In its oral presentation to the Board, Unocal urged CARB to develop a predictive model as soon as practicable and to delay implementation of the regulations until at least four years from the date on which a predictive model was adopted. RX 60 at CARB0001419-21 (Dennis Lamb testifying on behalf of Unocal); *cf.* Venturini Dep. (CARB), 5/13/03, at 248:9-249:13 (discussing Unocal's position on the starting point for the four-year period in which to achieve compliance).

Lamb further urged that the compliance date for the regulations be moved one month for every corresponding delay in the adoption of the predictive model. RX 60 at CARB0001421.

345. In Unocal's view, a predictive model was needed by the industry for compliance flexibility in order to deliver the same benefits while minimizing capital investment costs. RX 60 at CARB0001421.

346. Finally, although Unocal's research concluded that T50 was an important parameter, Unocal highlighted in its oral presentation the fact that it did not think the regulation of T50 was necessary. RX 60 at CARB0001444 ("We don't see the spec for T50 as necessary.").

c) Unocal Submits Comments in Opposition to the Regulations

347. In addition to testifying against the proposed regulations at the hearing, Unocal submitted numerous comments in opposition to the regulations that were published in CARB.

348. Both Unocal's written and oral comments were published in the staff's October 1992 Final Statement of Reasons. There, Unocal's opposition to Phase 2 was noted throughout. *E.g.*, RX 10 at CARB0000299-300, CARB0000315, CARB0000308-310, CARB0000338-340, CARB0000341-342, CARB0000404-405 (listing just some of Unocal's numerous comments).

349. Unocal believed that Phase 2 regulations simply were not necessary. In a comment published in CARB staff's Final Statement of Reasons, Unocal staked out its position. There it contended: "Although the California Clean Air Act requires ARB to take actions that are necessary, cost-effective, and technologically feasible to reduce emissions of volatile organic compounds by 55 percent and oxides of nitrogen by 15 percent . . . no further action is necessary to achieve those reductions by December 31, 2000." RX 10 at CARB0000322.

350. In addition to conveying its message that CARB did not need to pass the Phase 2 regulations at all to comply with the California Clean Air Act, Unocal also advocated against the regulation of certain parameters. Specifically with respect to the specification for T50, Unocal's comments expressed its opposition. RX 10 at CARB0000315 (cmt. 63) ("we don't see the specification for T50 as necessary"). Such an argument is inconsistent with intent to defraud by exercising patent rights that might become more valuable through the force of the regulations' T50 specification.

351. Additionally, Unocal argued against a minimum oxygen requirement. RX 10 at CARB0000309-310; CARB0000341-342 (cmts. 45-47, 128). Unocal also questioned CARB's rationale for its olefin specification. *Id.* at CARB0000338-339 (cmt. 122). It also argued that there was no support for the proposed aromatics regulation. *Id.* at CARB0000339-340 (cmts. 123-25). Finally, Unocal argued that any regulation of RVP should provide refiners with more flexibility. RX 10 at CARB0000299-300 (cmts. 23, 25).

352. Unocal also submitted written comments on November 21, 1991, to CARB Chairwoman Sharpless, which coincided with its stance on the need for a predictive model in its oral presentation to CARB. RX 33 at CARB0001747. There Unocal argued: "For every month delay in the adoption of a predictive model after January 1992, there should be a corresponding one month delay in the effective date of the Phase 2 regulations." RX 34 at CARB0001782.

353. Unocal's opposition is inconsistent with an intent to defraud by exercising patent rights that might become more valuable through the force of the regulations.

16) CARB Adopts Prescriptive Standards as Opposed to Performance or Predictive Standards

354. At the hearing, CARB did not adopt the October 4, 1991 proposal or the CARB staff's modified proposal, which it formally presented on November 21, 1991. Instead it adopted a modified proposal that CARB claimed provided 95% of the benefit of the original October 4 proposal with only 85% of the costs. Venturini Dep. (CARB), 5/15/03, at 555:14-560:17.

355. The 1991 Phase 2 regulations, as adopted by the Board, set specific limits for certain fuel parameters including:

The following chart sets forth the standards as modified:

Property	"Cap"	Flat Limit for Producer	Standard for Producer Under DAL Option
RVP	7.0 psi*	NA	NA
Sulfur	80 ppm	40 ppm	30 ppm
Benzene	1.20% vol	1.00% vol	0.80% vol
Aromatic Hydrocarbons	30% vol	25% vol	22% vol
Olefins	10.0% vol	6.0% vol	4.0% vol
Distillation Temp.			
T90	330° F	300° F	290° F***
T50	220° F **	210° F	200° F
Oxygen (min)	1.8% wt***	1.8% wt	NA
(max)	2.7% wt	2.2% wt	NA

* Applicable during summertime control periods only.
** No DAL can exceed 310° F.
*** Applicable during wintertime control periods only.

RX 10 at CARB0000282.

356. The adopted proposal resulted in a cost-effectiveness of $7,000 to $11,000 per ton of pollution removed and an estimated cost increase of 12 to 17 cents per gallon. *E.g.*, Venturini Dep. (CARB), 5/15/03, at 569:4-10.

357. CARB no longer has any worksheets showing how this calculation was performed. Venturini Dep. (CARB), 5/15/03, at 561-22-564:16.

358. Despite the fact that Unocal had continually supported performance standards during the CARB regulatory process (*e.g.*, Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 115:18-22), the adopted proposal did not contain any provisions for a predictive model. The CARB Phase 2 regulations passed in 1991 were instead a recipe with caps or limits for producers. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 115:24-116:5.

17) ARCO and the Industry Recognize the Phase 2 Regulations as a Victory for ARCO

359. When CARB issued its proposed Phase 2 regulations in 1991, the view of the industry was that CARB staff had embraced ARCO's specifications for its EC-X reformulated gasoline. RX 504; *see also* RX 95 at 002 [redacted]

360. ARCO later [redacted]

[redacted]

361. [redacted]

[redacted]

362. In the end, the Phase 2 regulations adopted by CARB were "very similar" to the EC-X formula. RX 0330 at CARB-FTC 0049737, 0049739; Boyd Dep. (CARB), 8/22/03, at 242:20-243:10; *see also* [redacted]

In fact, ARCO's EC-X gasoline met all of the Phase 2 specifications with the exception of the oxygen content. RX 330 at CARB-FTC 0049739; Boyd Dep. (CARB), 8/22/03, at 241:24-243:13.

363. Adoption of the Phase 2 regulations was seen by [redacted] the industry as a victory for ARCO. RX 83; RX 503 at 004-5 ("Board members were lavish in their praise of ARCO's position on the issue . . . ."); RX 504 at 001, 2 and 7 (noting "CARB's wholesale adoption of EC-X specifications").

364. Publicly, ARCO described EC-X as "a reference" for CARB's "strict specifications for clean fuels of the future." *See, e.g.*, RX 82.

365. [redacted]

366. [redacted]

18) Unocal Continues to Advocate Against the Need for the Phase 2 Rules Even after CARB Adopts Those Rules

367. Even after the Phase 2 regulations were approved, Unocal continued to advocate against the need for any regulations. As previously indicated, during the Phase 2 process, Unocal maintained that the Phase 2 regulations were unnecessary. RX 10 at CARB0000322 ("Although the California Clean Air Act requires ARB to take actions that are necessary, cost-effective, and technologically feasible to reduce emissions of volatile organic compounds by 55 percent and oxides of nitrogen by 15 percent . . . no further action is necessary to achieve those reductions by December 31, 2000.").

368. Unocal continued to maintain that the California regulations were unnecessary, even as late as January 1994—after many of the '393 patent claims had been allowed. In a January 5, 1994 meeting with CARB's chairperson, Unocal specifically argued that "RFG2 is not needed in [California] to achieve air quality standards." RX 200 at CARB-FTC 0051151 (summary of points raised by Unocal at 1/5/94 RFG2 meeting with Chairwoman). Advocacy against implementation of the regulations is inconsistent with intent to defraud by taking advantage of the regulations' overlap with Unocal patents.

369. When asked whether he recalled Unocal's advocacy of this position, CARB's Dean Simeroth stated in his deposition that he did not. It did not, however, surprise him because

"[Unocal's] whole actions through this time period was is [sic] that they did not like the RFG2 regulations." Simeroth Dep. (CARB), 7/9/03, at 158:22-159:10.

370. Unocal's opposition to the regulations before CARB is also consistent with what Unocal was communicating to WSPA during work on the predictive model during the 1994 time frame. At this time, Unocal's Peter Jessup continued to advocate an unbounded, pure predictive model even though the '393 patent had already issued. In a presentation to the WSPA predictive model working group, dated May 19, 1994, Dr. Jessup concluded that "no caps on fuel properties are necessary." RX 159 at WSPA_FTC0014946. Unocal's advocacy of an unbounded predictive model after the issuance of its patent is inconsistent with an intent to monopolize by forcing refiners into specific regulations falling within the scope of Unocal's patent claims.

19) After Adoption of the Regulations, Unocal Continues to Argue for Delay in Implementation until a Predictive Model Is Developed

371. CARB indicated, at that time of the Phase 2 hearing, that it would continue to work to develop a predictive model, which CARB reassured would be ready likely by spring of 1992. RX 39 at CARB0003235-36.

372. So as CARB worked toward the predictive model, Unocal continued to argue against the impending implementation of the regulations. Unocal, instead advocated the merits of a pure predictive model and urged CARB to delay implementation of the regulations, with an extension of one month for each additional month that CARB took to adopt a predictive model. As it became clear that the spring of 1992 date would come and go without a predictive model, Unocal reiterated its request for delay in June 1992, again in August 1992, and again in September 1992. RX 39 at CARB0003235-36; CX 575 at U 0069224-25; RX 42 at CARB0004779-82.

373. Unocal's continued efforts to delay the implementation of the Phase 2 regulations are inconsistent with an intent to monopolize.

20) CARB Uses Unocal's Studies to Partially Justify Its Regulations

a) Although CARB Knew That Unocal Opposed the Adoption of Rigid Fuel Specifications and Specifically Argued That T50 Was Unnecessary, Publicly CARB Partially Justified Its T50 Specification Based upon Unocal's Findings

374. Privately, CARB staff noted the close similarities between EC-X and the Phase 2 regulations. *See, e.g.*, RX 330 at CARB-FTC 0049739.

375. Publicly, CARB staff cited to work by both Toyota and Unocal which showed the significant impact of T50 on emissions. RX 5 at CARB 0000727-32; RX 10 at CARB 0000317.

376. Staff stated that their proposed regulation of 210° F would result in small decreases in pollutants since their baseline gasoline had an average value of 212° F. Staff declined to lower the T50 further under the belief that doing so would affect the volatility of the front end of gasoline. RX 5 at CARB 0000727-732. Staff used two graphs from the Unocal June 20, 1991 presentation, and listed Unocal's ten-car equations in its appendix. RX 5 at CARB 0000730 (Figure II-15), 0731 (Figure II-14), 1024 (Appendix 11).

377. Staff then discussed its support for T90, oxygenate, sulfur, aromatics and olefins citing almost exclusively to ARCO, Auto/Oil and Chevron studies. RX 5 at CARB 0000732-744.

378. No explanation was given as to why staff rejected findings by Unocal on T10, aromatics, oxygenate, octane or paraffin effects.

379. Despite the statements in CARB's public documents, the evidence shows that CARB did not rely on information provided by Unocal for its T50 specification.

380. Regulations drafted by CARB staff as early as July 21, 1991, included a T50 specification. *See* RX 198 at CARB-FTC 0030878 (190° F); RX 184 at CARB 10003057 (200° F).

381. CARB staff did not receive the disk containing data from Unocal's study, however, until some time after July 25, 1991. RX 327; *see also* RX 121 (letter from W. Thomas Jennings to Bethany D. Krueger, dated 8/4/03, at 1-2). Thus, both sets of draft regulations were prepared before CARB received this emissions research data base from Unocal.

382. Moreover, Unocal did not make this data base public until August 27, 1991. RX 3. Simeroth testified that absent a right to use the data publicly, CARB would not have based a regulation on that data or otherwise relied upon it. Simeroth Dep. (CARB), 7/9/03, at 145:25-148:8.

383. Three weeks before CARB had permission to make public use of any of Unocal's research data, CARB published a draft of its proposed regulation that specified a T50 value of 200° F. RX 184 at CARB 1003057. [redacted]

384. Even after CARB received permission to use Unocal's data base, there is no evidence that CARB ever used it to develop its T50 specification. Rather, the evidence shows that CARB continued to modify its regulations in response to ARCO's direction. [redacted]

385. CARB was well aware during the Phase 2 process that Unocal and several other oil companies opposed the adoption of rigid fuel specifications. RX 10 at CARB 0000441-443; Sharpless Dep. (CARB), 8/6/03, at 98:17-99:5.

386. With regard to the proposed regulation of T50, Unocal repeatedly told CARB that a regulation for T50 was not necessary. RX 10 at CARB 0000315-16; RX 60 at CARB 0001444.

387. Former CARB executive officer Jim Boyd and staffer John Courtis acknowledged that they were cognizant of criticism that they had simply endorsed ARCO's formulation and that this is the type of criticism one seeks to avoid "if you want to remain in existence." Boyd Dep. (CARB), 8/22/03, at 217:19-218:13; Courtis Dep. (CARB), 8/28/03, at 223:22-227:14.

388. It is reasonable to infer that CARB Staff, seeking to avoid public criticism because of the parallels between the Phase 2 Regulations and ARCO's EC-X, used Unocal's studies only as an after-the-fact justification for the regulations.

389. The evidence is not sufficient to show that CARB relied on Unocal for this specification.

b) Unocal's Study Was Only One of the Studies That CARB Used to Publicly Justify Its T50 Specification

390. Unocal's research was not the only study that CARB used to publicly justify its T50 specification. The statements of CARB's Bob Fletcher at the November 21 CARB meeting indicate that CARB's conclusions regarding T50 were based on multiple studies. RX 60 at CARB 0001070 ("T50 has been shown in the studies to have major impacts on the reductions of volatile organic compounds.").

391. CARB's Dean Simeroth testified that the information available to CARB, even where T50 was not a targeted parameter, still "had been varied enough to give you some idea" of T50's effect on emissions. Simeroth Dep. (CARB), 7/9/03, at 227:9-23.

392. CARB specifically noted data from a joint GM/WSPA/CARB study, which showed "that controlling the distillation characteristics of the gasoline is important, and that T50 is one of the major parameters to consider." RX 52 at 033.

393. CARB also cited Toyota's work as "showing that reducing T50 results in a decrease in emissions of volatile organic compounds and carbon monoxide, and has no significant effect on emissions of oxides of nitrogen." RX 52 at 033; *see also* Simeroth Dep. (CARB), 7/9/03, at 227:5-8.

394. These others, moreover, advocated for the stringent T50 controls. *See, e.g.*, RX 60 at CARB 0001584-85 (Toyota's representative advocating for a low cap limit on T50 and testifying that "with a 10 degree increase in T50, that equates to an 8 percent increase in hydrocarbons"); Simeroth Dep. (CARB), 7/9/03, at 228:13-18 (recalling that GM, Nissan and Toyota all advocated for tight controls of T50). *See also* RX 10 at 43.

395. ARCO specifically told CARB that the T50 specification was among the specifications in the proposed rule "which are absolutely critical to emissions performance." RX 187 at CARB-FTC 0058826.

396. The evidence simply does not show that Unocal provided the basis for CARB's T50 specification. In fact, when CARB learned of the '393 patent's issuance, it questioned whether the patent examiner for the '393 patent "really knew the extent of our work into RFG that was not dependent on Unocal's." CX 782.

21) Unocal's Failure to Disclose Its Pending Patent Rights Did Not Violate Any Duty and Did Not Materially Affect CARB's Cost-Effectiveness Analysis

397. As part of its rulemaking process, CARB conducted a "cost-effectiveness analysis" of the Phase 2 regulations pursuant to a September 1990 document entitled, "California Clean Air Act Cost-Effectiveness Guidance" ("Cost-Effectiveness Guidance"). RX 10 at CARB 0000373; RX 195.

398. The Cost-Effectiveness Guidance was adopted by a resolution of the California Air Resources Board on September 13, 1990. RX 323.

399. With respect to CARB's cost-effectiveness analysis, Complaint Counsel has alleged that Unocal's failure to disclose its pending intellectual property rights perpetrated a false and misleading impression that impacted the analysis. Complaint ¶¶ 1, 3, 46, 48, 78, & 79.

400. The evidence reveals, however, that Unocal had: (1) no duty to disclose cost information; (2) no duty to disclose revenue information; and (3) that pending patent rights were not material to CARB's cost-effectiveness analysis.

a) Definition of Cost-Effectiveness

401. According to the Cost-Effectiveness Guidance, the California Clean Air Act "makes cost-effectiveness a necessary component of air quality planning and rulemaking." RX 195 at CARB-FTC 0039609.

402. The Cost-Effectiveness Guidance also states that "while cost-effectiveness is given great emphasis in the California Clean Air Act, it is neither the sole nor the dominant criterion for decisionmaking. The primary mandate is to achieve the state air quality standards by the earliest practicable date." RX 195 at CARB-FTC 0039609.

403. According to the Cost-Effectiveness Guidance, the term "cost-effectiveness" is defined not in terms of its "plain English" meaning, but in a much more limited fashion—that is, dollars per ton of pollutants reduced. Venturini Dep. (CARB), 5/14/03, at 444:11-18; RX 195 at CARB-FTC 0039611.

404. In measuring the cost-effectiveness of alternative control measures, CARB was to express it as a rate: "the dollars per ton of pollutants reduced, or the dollars per unit of air quality improvement." RX 195 at CARB-FTC 0039611; Venturini Dep. (CARB), 5/14/03, at 434:9-435:5. The Cost-Effectiveness Guidance further explains that "[c]ost-effectiveness is a relative concept.... A measure is deemed cost-effective if it reduces emissions at a cost comparable to other measures, again, on a per ton basis." RX 195 at CARB-FTC 0039611.

405. Additionally, to be cost-effective, the measure must be below the upper cost bound of previously adopted or proposed regulations. RX 195 at CARB-FTC 0039611-12; Venturini Dep. (CARB), 5/14/03, at 435:6-436:14. Because the upper cost bound of previously adopted regs was $24,000-$32,000, any measure below that amount would also have been cost-effective. RX 5 at CARB 0000853.

406. A cost-effectiveness evaluation should not be confused, however, with a cost-benefit analysis, which is much broader in scope. RX 195 at CARB-FTC 0039613.

407. "A cost-benefit analysis attempts to quantify all the costs and benefits of a control measure, including social and environmental effects.... Because costs and benefits are weighed directly one against the other, both must be quantified in dollar terms." RX 195 at CARB-FTC 0039613.

408. By contrast, a "cost-effectiveness evaluation usually addresses just the direct costs (or savings) of a measure. . . ." And "benefits are described only in terms of emission reductions or air quality improvement." RX 195 at CARB-FTC 0039613. Accordingly, as CARB has noted, "A cost-effectiveness evaluation is much more limited in scope than a cost-benefit analysis." RX 195 at CARB-FTC 0039613.

409. For its Phase 2 regulations, CARB performed a cost-effectiveness evaluation, as opposed to a cost-benefit analysis. Venturini Dep. (CARB), 5/14/03, at 441:2-8; RX 195 at CARB-FTC 0039613. By doing so, CARB restricted itself to receiving information about only the direct costs or savings of a measure. Venturini Dep. (CARB), 5/14/03, at 439:22-440:8. Examples of such direct costs or savings went to "planning, research and development, installation, engineering, equipment and other materials, operations, and maintenance." Venturini Dep. (CARB), 5/14/03, at 439:22-440:8; RX 195 at CARB-FTC 0039613.

410. CARB's cost-effectiveness evaluation did not address patents or competition. Venturini Dep. (CARB), 5/14/03 at 440:4-21; RX 195 at CARB-FTC 0039613.

411. In fact, according to CARB, someone owning a patent "would not incur a cost, but they would be incurring some benefit, some economic benefit." Aguila Dep. (CARB), 7/24/03, at 132:22-133:16.

412. In gathering information for its cost-effectiveness analysis, however, CARB did not seek information about the projected revenue or economic benefits that might result from proposed Phase 2 regulations. Aguila Dep. (CARB), 7/24/03, at 134.22-135:14. CARB "simply put to them [the refiners] the request to provide [CARB] their actual costs." Aguila Dep. (CARB), 7/24/03, at 133:17-19.

413. A cost-effectiveness evaluation also should not be confused with a socio-economic impact analysis. RX 195 at CARB-FTC 0039613.

414. A socio-economic impact analysis is again much broader than a cost-effectiveness analysis, because it examines, among other things, the effect of a measure on natural gas availability, the ethnicity of displaced workers, changes in fuel oil sales and resulting income and employment effects to fuel oil producers. Venturini Dep. (CARB), 5/14/03, at 441:19-442:8; RX 195 at CARB-FTC 0039613-14.

415. A socio-economic impact analysis also examines the potential for monopolistic pressures in the market. Venturini Dep. (CARB), 5/14/03, at 441:19-442:8.

416. CARB did not, however, perform a "full-blown socio-economic analysis." Venturini Dep. (CARB), 5/14/03, at 442:9-18.

417. The socio-economic factors that CARB addressed concerned "impacts on jobbers" and "impacts on other businesses." Venturini Dep. (CARB), 5/14/03, at 443:3-7, 443:19-444:10. Neither of these factors concerned patents, competition, or projected revenue.

b) Cost-Effectiveness Is One of Several Criteria That Was Required to Be Considered by CARB

418. Cost-effectiveness is one of many considerations that CARB takes into account in its decisionmaking, but cost-effectiveness "is neither the sole nor the dominant criterion for decisionmaking." RX 195 at CARB-FTC-0039609.

419. "The primary mandate is to achieve the state air quality standards by the earliest practicable date." RX 195 at CARB-FTC 0039609. At the time of the Phase 2 rulemaking, CARB

was required "to achieve a 55% reduction in emissions of reactive organic gases and a 15% reduction in emissions of nitrogen oxides by the year 2000." RX 195 at CARB-FTC-0039611.

420. CARB articulated these considerations in connection with its adoption of the Phase 2 regulations: "Even if the regulations may not be necessary to meet the specific emission reductions identified in section 43018(b), the regulations would still be necessary to meet the requirement in section 43018(a) that the Board endeavor to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources in order to accomplish attainment of the state ambient air quality standards at the earliest practicable date." RX 10 at CARB 0000322-323.

421. By requiring maximum emissions reduction by the earliest practicable date, CARB's legislative mandate led it to focus on factors that competed with cost-effectiveness.

422. One such factor competing with cost-effectiveness was expediency. CARB interpreted its statutory mandate to place "priority on expediency" in that "[t]he earliest practicable attainment date must be considered in developing adoption and implementation schedules." RX 195 at CARB-FTC 0039620.

423. CARB also concluded that the "Phase 2 RFG [was] necessary to help us in our efforts to achieve ambient air quality standards and to satisfy the mandate of Health and Safety Code Section 43018, which directs the Board to endeavor to reduce emissions from vehicular sources to attain the state ambient air quality standards by the earliest practicable date. . . ." RX 10 at CARB 0000361.

424. Thus, CARB's statements make clear that CARB understood the term "cost-effectiveness" in light of its primary mandate of early emissions reduction. RX 10 at CARB 0000361-62.

425. In addition to expediency, another factor competing with cost-effectiveness was CARB's commitment to achieve the "maximum degree of emission reduction." RX 10 at CARB 0000362-63. CARB's view was that it was appropriate to "adopt measures that [were] less cost-effective on a dollars per ton basis, if the potential emission reductions [were] greater." RX 195 at CARB-FTC 0039620.

426. Emphasizing its commitment to achieving the maximum degree of emission reduction, CARB explained, "[a]lthough the Phase 2 RFG regulations will undoubtedly be costly, the emissions reductions associated with it are quite large. . . . In the early years of implementation, the Phase 2 RFG regulations will reduce motor vehicle emissions more than any measure recently adopted by the ARB." RX 10 at CARB 0000361.

427. Public acceptability was another important consideration that drove CARB's rulemaking decisions. CARB recognized that "[s]ome measures that would be highly cost-effective may be unacceptable to the public" and, accordingly, that it was appropriate "to move ahead on more acceptable measures." RX 195 at CARB-FTC-0039620. "No-drive days or highrise developments to limit trips are two cogent examples" of publicly unacceptable strategies to reduce pollution. RX 195 at CARB-FTC-0039620.

428. Technical feasibility was yet another factor competing with cost-effectiveness. For example, CARB was mindful of considering whether districts would "want to take advantage of the best available control technology, even if it [was] not the cheapest alternative on a per ton basis." RX 195 at CARB-FTC 0039620.

429. Further emphasizing the malleability of the cost-effectiveness criteria, CARB, when enacting the Phase 2 expeditions and regulations, stated: "There is no requirement that control

measures should be adopted in the precise order of their respective cost-effectivenesses [sic]." RX 10 at CARB0000379; *see also*, RX 195 at CARB-FTC 0039621. CARB reasoned that there is no obligation "to adopt or implement control measures in rank order of cost-effectiveness" because "the California Clean Air Act mandates consideration of several different factors and places an emphasis on expeditious attainment." RX 195 at CARB-FTC 0039621.

430. Thus, the message that CARB imparted to refiners is that cost-effectiveness is not a precise value, but rather a range of values of subjective importance depending on the regulatory measure's ability to achieve a maximum degree of emissions reduction expediently. RX 10 at CARB0000361; *see also* Fletcher Dep. (CARB), 7/8/03, at 39:13-22 (testifying that reasonable people can differ on whether something is cost-effective).

c) CARB's Determination of Cost-Effectiveness for Phase 2 Regulations

(i) CARB Did Not Put an Experienced Staff Person in Charge of Directing the Cost-Effectiveness Study

431. Although John Courtis "was certainly viewed as the expert" on matters concerning cost-effectiveness, (Aguila Dep. (CARB), 7/24/03, at 18:7-25), CARB assigned the task of conducting the cost-effectiveness analysis to a junior engineer, Mr. Jim Aguila. Courtis Dep. (CARB), 8/28/03, at 7:10-19 ("I had a lot more expertise than him [Mr. Aguila], and anybody else for that matter, in development of cost-effectiveness, and the cost estimates of course.").

432. Mr. Aguila, who was formally trained in mechanical engineering, had no formal training in accounting. Aguila Dep. (CARB), 7/24/03, at 7:21-8:1. Although he took Engineering Economics as a required course in college, he failed four times the professional exam for licensing

in engineering, of which engineering economics is a component. Aguila Dep. (CARB), 7/24/03, at 23:18-24:25.

433. Nor did Mr. Aguila have experience in performing complicated cost analysis. Aguila Dep. (CARB), 7/24/03, at 14:1-15:14, 15:20-16:5. With the exception of working on three previous rulemakings that did not contain significant cost components, Mr. Aguila had never performed a complicated a cost-effectiveness analysis before his Phase 2 analysis. Aguila Dep. (CARB), 7/24/03, at 14:1-15:14, 15:20-16:5 ("I was responsible for [looking at costs] for that rulemaking, [concerning motor vehicle specifications for alternative fuels] for example, but there wasn't much substance to it" because "there really weren't any cost impacts;" "I was also responsible for two other rulemakings on the deposit control additive regulation and again neither one of those had big cost implications.")

434. Notwithstanding Mr. Aguila's lack of experience, he received only minimal guidance from his superior at CARB, Robert Fletcher. Mr. Fletcher provided Mr. Aguila with only one explanatory guidance document—that is, the September 1990 "Cost-Effectiveness Guidance" document Aguila Dep. (CARB), 7/24/03, at 16:10-18:6, 21:1-9, which establishes the meaning and role of cost-effectiveness. *E.g.*, Witherspoon Dep. (CARB) 8/8/03, at 31:2-22; Boyd Dep. (CARB), 8/22/03, at 156:23-158:13; Aguila Dep. (CARB), 7/24/03, at 189:22-191:5.

435. Otherwise, Mr. Fletcher instructed Mr. Aguila to "inform [him]self and to—and to educate [him]self on the proper techniques. . . ." Aguila Dep. (CARB), 7/24/03, at 20:17-25. Mr. Fletcher also instructed Mr. Aguila "to conduct, you know, [his] own assessment of how a cost-effectiveness analysis should be performed." Aguila Dep. (CARB), 7/24/03, at 21:20-22:4.

(ii) CARB Intended to Perform the Cost-Effectiveness Analysis Using a Linear Programming Model, but Shifted Course at the Last Minute

436. During the Phase 2 process, CARB had planned and announced that its cost-effectiveness analysis would consist of determining the cost impact of the Phase 2 regulations based on linear programming models. RX 5 at CARB 0000854. The models, which were to be developed by Bechtel Corporation, would simulate actual refinery operations and thereby determine the overall cost impact based on individual cost information. *E.g.*, RX 167 at WSPA_FTC0007362; Aguila Dep. (CARB), 7/24/03, at 30:17-31:16, 88:10-89:18; Fletcher Dep. (CARB), 7/8/03, at 67:9-15.

437. As early as June 11, 1991, CARB represented to the public that overall cost impact would be determined through a linear programming model. Aguila Dep. (CARB), 7/24/03, at 91:14-93:1-5.

438. Throughout the summer of 1991, CARB undertook efforts to model at least four or five different California refineries. Aguila Dep. (CARB), 7/24/03, at 34:12-35:3. CARB specifically requested, by way of a survey, that these refineries provide specific information to accomplish the LP modeling. Aguila Dep. (CARB), 7/24/03, at 35:4-7, 48:4-12.

439. Yet by August 8, 1991, CARB staff had not completed an estimate of the cost component of the cost-effectiveness analysis. In a briefing paper of that date, CARB staff explained that "the cost has not yet been considered as we are currently completing and calibrating our linear refinery programming model." RX 268.

440. Despite the fact that CARB staff was calibrating the model, CARB's ability to rely on the linear programming model before the October proposal of the upcoming Phase 2 regulations

came into doubt less than one week after it published the August 8 briefing paper. Aguila Dep. (CARB), 7/24/03, at 51:5-22.

(iii) CARB Requested Cost Information

441. To gain an understanding of refinery costs in the absence of this model CARB, at a workshop on August 14, 1991, sent out an informal verbal plea for refiners to provide voluntarily their actual costs for meeting the Phase 2 regulations. Aguila Dep. (CARB), 7/24/03, at 51:11-52:19, 53:1-54:18, 89:20-91:12.

442. At this August workshop, however, CARB did not inform refiners that it was not going to complete its LP modeling or that it was not going to use LP modeling as a basis for the cost component of its cost-effectiveness analysis. Aguila Dep. (CARB), 7/24/03, at 114:23-116:12.

443. Nor did CARB ask the refiners to provide any information about revenues or potential revenues related to compliance with the proposed RFG regulations. Aguila Dep. (CARB), 7/24/03, at 135:11-14.

444. Unlike its efforts toward constructing a linear programming model, CARB did not send out any specific questionnaire to the refiners directing them as to what cost information to provide. Aguila Dep. (CARB), 7/24/03, at 49:24-50:3, 51:2-52:2.

445. Although CARB now acknowledges that the informal verbal plea at the August 14 workshop was a "midcourse correction," CARB continued to represent to refiners at the time—through its October 1991 staff report and Technical Support Document—that it still intended to complete the linear programming models. Aguila Dep. (CARB), 7/24/03, at 52:2-19; RX 5 at CARB 000854.

(iv) CARB Based Its Cost-Effectiveness Analysis on Information Provided from Six Refiners and the Actual Information about Capital and Operating Costs of Only Two Refiners

446. The response to CARB's August 14 request for information was minimal. Out of thirty refiners in the state of California, only six refiners responded to CARB's request to provide voluntarily any cost-related information to CARB. Simeroth Dep. (CARB), 7/9/03, at 234:23-235:12.

447. Ultimately, CARB used the six refiners, labeled A through F on page 66 of its staff report, as the basis for its cost-effectiveness analysis. RX 52 at 071.

448. CARB continued to lead refiners to believe, however, at least as late as October 1991, that it would complete and rely on the linear programming models: "At the present time, our LP models are not yet sufficiently developed to produce an accurate assessment of costs. Therefore, staff utilized data submitted from refiners, in addition to other sources of data, to estimate the fiscal impact on the refining industry. These results are considered to be preliminary." RX 52 at 079.

449. Table VI-1 showing the preliminary results of what eventually turned out to be CARB staff's cost-effectiveness analysis is shown below:

Table VI-1

Estimated Cost of Compliance for Six California Refineries

Refinery	Capital Investment Cost (Million $)	Operating Costs (Million $/yr)	Cost per gallon (cents/gallon) Staff's Estimates	Refiner's Estimate
A	100	N/A	12	30
B	178	65	16	18
C	1,000	275	12	16
D	53	26 a/	14	N/A
E	N/A	N/A	N/E	15
F	147	50 b/	4 b/	N/A

N/A - Not Available, N/E - Not Estimated.
a/ The staff assumed 50 percent of capital cost to be operating expenses.
b/ This is the cost for meeting the olefin and sulfur limits only.

RX 52 at 071.

450. Of the six refiners providing any information, only two gave actual information about capital investment and operating costs (refiners B and C). Aguila Dep. (CARB), 7/24/03, at 164:25-165:10; RX 52 at 071. One of the two refiners submitted that its capital costs were 25% of its operating costs and the other refiner submitted that its capital costs were 40% of its operating costs. Aguila Dep. (CARB), 7/24/03, at 203:20-206:9.

451. For at least one of the refiners who did not provide operating costs (refiner D), Mr. Aguila assumed operating costs to complete his cost analysis. Aguila Dep. (CARB), 7/24/03, at 203:20-206:9. To do so, he used a conservative estimate of 50% based on the other estimates of 25% and 40%. Aguila Dep. (CARB), 7/24/03, at 162:13-163:2, 203:20-206:9. Mr. Aguila assumed 50% because "[n]ot having other information particular to refiners at the time, what we had to go on was the limited information that was provided by the few." Aguila Dep. (CARB), 7/24/03, at 204:7-11.

452. Refiner A provided only capital investment costs. Aguila Dep. (CARB), 7/24/03, at 151:15-154:20. Mr. Aguila did not assume 50% operating costs for refiner A, however, and cannot explain the reason; nor can Mr. Aguila explain or recall how he computed that refiner A's cost of compliance would be 12 cents per gallon without having information on operating costs. Aguila Dep. (CARB), 7/24/03, at 151:15-154:20.

453. Another of the refiners did not provide information about either investment or operating costs, but did provide its own estimate of its cost of compliance in cents per gallon. RX 52 at 071 (refiner E). For this refiner, CARB staff could not even assume investment or operating costs, and therefore, did not use this refiner's cost information in computing the cost portion of the cost-effectiveness analysis. Aguila Dep. (CARB), 7/24/03, at 160:16-162:12.

454. Refiner F provided operating costs for meeting only the olefin and sulfur specifications and none of the remainder of the specifications that CARB staff had proposed. RX 52 at 071 note b. As a result, Mr. Aguila did not consider refiner F's information in his cost-effectiveness analysis. Aguila Dep. (CARB), 7/24/03, at 163:15-164:24, 176:14-24.

455. As demonstrated above and as reflected in Table VI-1, Mr. Aguila's cost-effectiveness analysis is based on the investment and operating costs from only two refiners. RX 52 at 071. Mr. Aguila assumed operating costs for a third refiner and received operating costs from a fourth refiner only with respect to the proposed olefin and sulfur specifications. Aguila Dep. (CARB), 7/24/03, at 176:8-177:7.

(v) CARB Never Asked Refiners to Provide Revenue Information or Information about Other Refiners' Costs

456. Although CARB requested that refiners provide information regarding their own costs during the Phase 2 process, Aguila Dep. (CARB), 7/24/03, at 53:1-54:18, 89:20-91:12, CARB did not require this information. Aguila Dep. (CARB), 7/24/03, at 53:1-54:18, 89:20-91:12.

457. CARB also did not require or request information about patents. Mr. Aguila was never instructed to ask refiners about patents they had. Aguila Dep. (CARB), 8/24/03, at 129:18-25. Nor did Mr. Aguila ask refiners whether they had patents. Aguila Dep. (CARB), 7/24/03, at 130:13-18. Likewise, Mr. Aguila's superior, Mr. Fletcher, was never told that he should investigate patents related to royalties on fuels or even the existence of patents in any way. Fletcher Dep. (CARB), 7/8/03, at 16:1-5, 17:5-10.

458. CARB understood that a refiner's possession of a patent does not impose costs on the refiner itself, but, at most, may be a source of revenue to the patent holder. Aguila Dep. (CARB), 7/24/03, at 134:8-135:14.

459. Yet, CARB never asked refiners for data regarding their expected revenues. Aguila Dep. (CARB), 7/24/03, at 134:8-135:14.

460. CARB also never asked refiners to provide information regarding costs that other refiners might potentially incur. *Cf.* Aguila Dep. (CARB), 7/24/03, at 131:8-15 (refiners asked to provide estimate for how much it would cost them to comply with the regulations).

(vi) Refiners Did Not Provide Information about Potential Competitive Advantage

461. Refiners understood that, to avoid potential antitrust violations, they were not to publicly share competitive information with CARB. [redacted]

[redacted]

Fletcher Dep. (CARB), 7/8/03, at 73:25-74:7 (explaining steps that were taken to protect confidentiality of competitive information shared with CARB by companies due to concern about refiners knowing competitive information of others).

462. [redacted]

463. Refiners were acutely aware of the need to be vigilant about not sharing competitive information. [redacted]

464. CARB was also aware that refiners could not publicly provide competitive information such as cost information or provide such information through WSPA due to antitrust concerns. RX 166; Boyd Dep. (Unocal), 8/22/03, at 142:3-144:15; Sharpless Dep. (CARB), 8/6/03, at 159:6-160:2.

465. Because CARB was aware of refiners' sensitivity and, in some cases, steadfast unwillingness to provide it with competitive information, CARB could not reasonably expect refiners to disclose to it the existence of patents or potential revenue from patents, particularly in the absence of an express request to do so. Fletcher Dep. (CARB), 7/8/03, at 19:13-21 (stating that CARB did not require refiners to give them anything relating to patents or patent applications).

(vii) Unocal Was Not Directly Asked to Provide Its Own Cost-Information Until the Phase 2 Hearing

466. Unocal's primary contact with CARB, Dennis Lamb, testified that he did not recall any request from CARB for cost information until the November 1991 proceedings when Chairperson Sharpless asked Mr. Lamb about Unocal's costs. Lamb IH Dep. (Unocal), 1/16/02, at 72:4-25.

467. Mr. Lamb did not provide Ms. Sharpless with Unocal's costs, stating that Unocal did not have a figure to give her. RX 60 at CARB 0001447.

468. Mr. Lamb would not have shared such information in any event because he believed that sharing such information, particularly with competitors present, violated antitrust laws, particularly in a public setting such as the November CARB proceedings. Lamb IH Dep. (Unocal), 1/16/02, at 72:4-25.

d) There Was No Duty to Volunteer All Information That CARB Might Later Deem Relevant to Cost-Effectiveness

469. CARB never communicated to those parties interested in its Phase 2 rulemaking, that they had a duty to volunteer any and all information that may affect cost-effectiveness. Fletcher Dep. (CARB), 7/8/03, at 19:4-20:21.

470. CARB provided no guidance regarding its cost-effectiveness analysis. It did not send the refiners a survey requesting specific types of information. *See* Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 158:2-11.

471. [redacted]

472. CARB acknowledged that it was aware that industry groups who communicate with CARB in rulemaking proceedings "are not always forthcoming with all information." Sharpless Dep. (CARB), 8/6/03, at 167:13-17.

473. CARB understood that refiners who communicated with CARB during the rulemaking process would not share with CARB information that "they did not want [CARB] to have," and would only provide CARB with "information that best represents their interests." Sharpless Dep. (CARB), 8/6/03, at 167:18-25.

474. CARB also knew that WSPA would not be providing information from specific companies given the letter that they received from WSPA's antitrust counsel. [redacted]

475. [redacted]

476. [redacted]

e) CARB's Subsequent Representations about its Cost-Effectiveness Analysis Are Inaccurate

477. In its Final Statement of Reasons, CARB made several inaccurate statements about how it conducted its cost-effectiveness analysis and about the information on which its cost-effectiveness analysis is based.

478. Although CARB represented that its "staff analyzed the operating costs provided by the six refiners," RX 10 at CARB 0000357, the fact is that CARB utilized the operating cost information from only two refiners. RX 52 at 071. As stated above, the incomplete cost information from a third refiner was not utilized in CARB's cost-effectiveness analysis, the remaining three refiners did not provide information on their costs, and CARB assumed the operating costs for one of those. RX 52 at 071, notes a and b.

479. Thus, although unsupported by the facts, CARB represented that it analyzed the operating costs provided by six refiners in response to an objection from Unocal that there was no

support for the assumption that one-half of the total capital would be spent on operating expenses. RX 10 at CARB 0000357 (cmt. 156).

480. Additionally, although CARB represented that its staff used "the most current cost of compliance data received by six individual refiners," RX 10 at CARB 0000358, the fact is that only two refiners provided CARB with complete capital investment costs and operating costs of compliance. RX 52 at 071. Again, the cost of compliance for a third refiner was calculated based on operating costs that CARB assumed for that refiner. RX 52 at 071 note a.

481. The fact that CARB received complete cost data from only two refiners belies CARB's assertion that it received cost data from a diverse group of refiners. RX 10 at CARB 0000364. The failure to receive cost data from a diverse group (as it claimed it had done) impacted CARB's ability to assess the impacts of the Phase 2 RFG.

482. Moreover, when CARB presented its cost analysis based on refiners A though F, it represented that it was still in the process of completing its linear programming models. RX 52 at 071. These models were never finished. The models CARB staff were intending to use as the basis for its cost analysis were not used in any manner and formed no part of its cost-effectiveness analysis. Aguila Dep. (CARB), 7/24/03, at 81:23-83:1.

f) CARB Rejected Other Highly Cost-Effective Regulatory Options

483. Significantly, the Phase 2 RFG that CARB ultimately adopted was not the most cost-effective option available. More cost-effective options included enhanced inspection and maintenance ("I & M") programs, a vehicle scrap program, and future research on low-emission vehicles. RX 10 at CARB 0000379-80, 392-93.

484. The vehicle scrap program in particular, received an environmental award from former President Bush and was heralded as one of the most innovative and cost-effective programs of 1992. Stegemeier Dep. (Unocal), 6/5/03, at 139:3-25.

485. In defending its decision not to adopt a more cost-effective measure, such as the vehicle scrap program, CARB emphasized that, as long as the cost-effectiveness of a measure fits within a range relative to recently adopted measures, the requirement for cost-effectiveness is met. RX 10 at CARB 0000379-80, 392-93.

486. For example, CARB specifically rejected the argument that emphasized Phase 2 RFG were not cost-effective because they were more costly than enhanced I&M programs and vehicle scrapping. RX 10 at CARB 0000379-80, 392-93.

487. Rather, CARB emphasized that cost-effectiveness is relative only to the range established by recently adopted measures: "We do not agree with this statement [that reformulated gasoline beyond federal requirements is not cost-effective]. The Staff Report indicates that Phase 2 RFG is cost-effective compared to recently adopted measures. . . ." RX 10 at CARB 0000392.

g) CARB Refused to Conduct Incremental Analyses of Individual Parameters of Its Regulatory Scheme

488. Although urged by numerous refiners to do so, CARB refused to conduct an incremental cost-effectiveness analysis to determine which specifications were the most cost-effective. *See, e.g.,* [redacted]; RX 10 at CARB 0000373.

489. Specifically, in conducting its cost-effectiveness analysis, "the staff in calculating emission benefits did not look at individual parameters." RX 10 at CARB 0000339.

490. As explained in the Phase 2 Final Statement of Reasons: "[t]he staff d[id] not agree that incremental analysis on a property-by-property basis is appropriate. . . . Since individual properties affect emissions differently, and because all properties are interrelated, all properties needed to be considered together in order to optimize the overall emissions performance of the fuel." RX 10 at CARB 0000373.

491. Instead of conducting an incremental cost analysis, CARB's approach was to look at the fuel as a whole as opposed to determining the costs of the individual parameters. As CARB's Mr. Fletcher stated at the November 1991 Board meeting, CARB "look[s] at the fuel as a system." RX 60 at CARB 0001097. And likewise, CARB's chairwoman, Ms. Sharpless, stated "we're looking at the fuel properties as an integrated system." RX 60 at CARB 0001309.

492. CARB also explained its rationale in the Phase 2 Final Statement of Reasons: "Because of the emissions and cost interrelationships discussed above, staff believes that an incremental (limit-by-limit) analysis is not appropriate. Gasoline needs to be viewed as a system where emissions performance and costs can be optimized. Moreover, incremental analysis has typically not been considered in past rulemakings." RX 10 at CARB 0000373. Additionally, CARB explained that "it is inappropriate to compare incremental cost-effectiveness with the cost-effectiveness of an entire regulation. The Board has not used incremental analyses to determine cost-effectiveness, but instead looks at the costs and emission reductions associated with an entire regulation relative to the existing situation." RX 10 at CARB 0000454.

493. WSPA supported the use of an incremental cost analysis, and, in fact, conducted an analysis which looked at the cost-effectiveness of certain parameters. [redacted]

494. Incremental, as opposed to average total cost analysis, revealed that some of the parameters that CARB was considering adopting were drastically more expensive than others, yet modifications were rejected by CARB. For example, CARB rejected WSPA's suggestion that moving the T90 average from 300° to 310° F, which would have saved nearly $200 million per year. RX 10 at CARB 0000374. CARB also rejected WSPA's suggestion that moving olefins from an average of 5% to an average of 7% would achieve a $200 million annual cost saving because the proposal reflected an incremental cost analysis. RX 10 at CARB 0000374. Specifically, CARB stated, "we do not feel it is appropriate to consider the incremental cost-effectiveness of individual properties such as T90." RX 10 at CARB 0000374.

495. There were also estimates that the cost-effectiveness of the T90 and aromatics specifications was $190,000 per ton based on analysis performed by Sierra Research, Inc. *Cf.* RX 10 at CARB 0000374-75. Although this figure is 20 times the overall cost-effectiveness of the regulation as estimated by CARB in its Phase 2 Statement of Reasons, CARB still determined that its regulations were cost-effective.

h) CARB Still Would Have Concluded the Phase 2 Regulations Were More Cost-Effective than Any Alternatives, [redacted]

496. The "going rate" for cost-effectiveness "is the upper cost bound for measures recently adopted or proposed for adoption." RX 195 at CARB-FTC 0039612. "Where they are needed to attain or maintain standards, measures below the going rate are said to be cost-effective. . . ." RX 195 at CARB-FTC 0039612.

497. Under this measure, the "going rate" listed in the Technical Support Document was $32,000 per ton. Sharpless Dep. (CARB), 8/6/03, at 206:1-5; Aguila Dep. (CARB), 7/24/03, at 232:24-233:3; RX 10 at CARB 0000360, 391-92.

498. In fact, the upper bound cited by CARB at its November 21, 1991 Board hearing was $50,000 per ton. RX 60 at CARB 0001357. In connection with its adoption of the Phase 2 RFG regulations, CARB cited the following cost-effectiveness figures from prior rulemakings:

> Rule 1134 (turbines) - $12,000/ton
> Rule 1146 (Commercial boilers) - $19,000/ton
> Rule 1110 (IC engines) - $23,000/ton
> Utility boilers - $17,000/ton
> Auto assembly coatings $19,000/ton
> Flue gas desulphurization - $20,00-50,000/ton

RX 60 at CARB 0001357.

> Aromatic content for diesel fuels - $14,000/ton
> Low emission vehicles/clean fuels - $10,000-$32,000/ton
> Rule 1135 (SCAQMD Power plants - $24,000-$30,000/ton

RX 5 at CARB 0000853.

499. In response to Unocal's objection that the Phase 2 regulation would be more costly than projected by CARB, CARB stated that it believed that Unocal's objection was based on an estimate that the regulation would impose costs of 23 cents per gallon, in contrast to CARB's estimate of 12 to 17 cents per gallon. RX 10 at CARB 0000456. CARB asserted that "even if the cost-effectiveness of Phase 2 RFG is changed by 25 percent as suggested by Unocal, the Phase 2 RFG cost-effectiveness would still be comparable to recently adopted regulations." RX 10 at CARB 0000456.

500. In fact, the 23 cents per gallon figure is 35% higher than the high end of CARB's estimate and 92% higher than the low end of that estimate. Nonetheless, CARB concluded that even if the estimated costs were increased by that amount, the Phase 2 regulations would "still be comparable to recently adopted regulations." RX 10 at CARB 0000456.

501. [redacted] that CARB stated would have maintained the comparable nature of the Phase 2 regulations. RX 10 at CARB 0000456.

502. [redacted] CARB deemed acceptable. RX 10 at CARB 0000456.

503. CARB did not deem a change in the cost-effectiveness of the Phase 2 regulations from a range of $8,000 to $12,000 per ton to a range of $9,000 to $13,000 per ton to be significant. RX 60 at CARB 0001097. [redacted]

504. [redacted]

505. [redacted]

506. By CARB's own conclusions, [redacted]

been preferable to the Phase 2 regulations [redacted] RX 10 at CARB 0000456. [redacted]

22) CARB Adopts a Predictive Model

a) Unocal Continues to Advocate for a Predictive Model after the Adoption of the Phase 2 Regulations

507. After the adoption of the Phase 2 regulations, Unocal continued to advocate for a predictive model, and met with CARB several times including March 1992. RX 36; RX 37 (CARB notes of meeting with Unocal on the predictive model). Unocal urged the expeditious adoption of a predictive model before the Phase 2 regulations went into effect. RX 42 (letter from R. Stegemeier to CARB dated September 4, 1992).

508. Unocal also continued to advocate a delay in the implementation of the Phase 2 regulations until a predictive model was adopted. RX 42 at CARB 0004782. ("Unocal continues to believe that there must be linkage between the final adoption of the predictive model and the effective date for compliance.").

b) CARB Amends the Phase 2 Regulations in 1994 to Include a Predictive Model with Caps

509. Despite CARB's assurances to at the 1991 Board meeting regarding a 1992 predictive model, it did not ultimately adopt a the Phase 2 predictive model until June of 1994.

510. Specifically, CARB issued its Proposed Amendments to the California Phase 2 Reformulated Gasoline Regulations on April 22, 1994. RX 53. CARB met to consider the

regulations on June 9, 1994. RX 54 at 005. At the meeting CARB adopted resolution 94-38, approving the proposed amendments with various modifications. RX 54 at 005. CARB then issued its Final Statement of Reasons for the Amendments to the California Phase 2 Reformulated Gasoline Regulations, Including Amendments Providing for the Use of a Predictive Model, in April 1995. RX 54.

511. Under the 1994 predictive model, gasoline producers were allowed to compare, via computer model, the performance of Phase 2 RFG with the performance of an alternative gasoline formulation that has different specifications. An alternative formulation was acceptable if the predicted emissions resulting from its use were equal to or better than the predicted emissions resulting from the use of Phase 2 RFG. RX 54 at 007.

512. The 1994 predictive model was composed of three equations. In each equation, the vehicular emissions that resulted from the use of an alterative gasoline formulation were compared to emissions resulting from the use of Phase 2 RFG. One equation determined the percent change in exhaust emissions of hydrocarbons; the second determined the percent changed in exhaust emissions of oxides of nitrogen; and the third determines the percent change in the combined exhaust emissions of four toxic air contaminants. RX 54 at 007.

513. The CARB model, however, included a requirement that all gasoline still had to meet cap limitations, something which Unocal had opposed. *E.g.*, RX 54 at 008 (cap limits); RX 42 at CARB0004779-81 (Unocal's opposition to cap limits).

c) The Development of the Predictive Model

514. CARB staff engineer, Kevin Cleary began his work on the development of a predictive model for CARB in November or December of 1991. Cleary Dep. (CARB), 8/7/03, at 96:1-11.

515. CARB also hired a consultant David Rocke, Ph.D., from the University of California Davis to supervise the development of the Phase 2 predictive model. Venturini Dep. (CARB), 5/14/03, 347:9-17.

516. In order to develop the predictive model CARB assembled a mass dataset of approximately 7,724 data points. RX 53 at 150-51.

517. A CARB contractor by the name of Peggy Miller, had largely built the data base for analysis by November or December 1991. Cleary Dep. (CARB), 8/7/03, at 96:12-17.

518. The data points included in the data base were compiled from data generated by various emissions tests, including Unocal's. RX 53 at 005, 030-31, 150-51. Also included in the data set were the results from at least 19 other studies. RX 53 at 030-31, 150-51. The data from Unocal's emissions tests accounted for 744 of the 7,724 total data points, or just less than 10 percent (9.63 percent) of the total data. Cleary Dep. (CARB), 8/7/03, at 167:2-24; RX 53 at 150-51.

(i) CARB Did Not Obtain Unocal's One-Car Data for the Predictive Model

519. Cleary was not given the Unocal one-car data by Unocal. Cleary Dep. (CARB), 8/7/03, at 33:22-34:2, 35:4-7. Although Cleary read about Unocal's one-car test in a published Society of Automotive Engineers (SAE) paper, he never put that data into CARB's data base and

did not take any actions as a result of reading the SAE paper on the Unocal study. Cleary Dep. (CARB), 8/7/03, at 35:4-36:4, 40:24-41:15.

520. This was confirmed during the course of the FTC's investigation, when Cleary was asked by the FTC what data Unocal had provided CARB. Cleary told the FTC that Unocal had provided the ten-car and thirteen-car data maintained in a data base from a computer. Cleary Dep. (CARB), 8/7/03, at 31:21-32:10.

(ii) Including Unocal Data in the Predictive Model Did Not Skew or Modify the Model

521. The addition of the Unocal data into CARB's data base did not skew or modify the conclusions CARB reached in its predictive model analysis. The FTC asked Kevin Cleary from CARB to perform an analysis of the effect of the Unocal data by removing it from the data base. Cleary Dep. (CARB), 8/7/03, at 8:25-9:14.

522. He performed that analysis and believed he still had the output at the time of his deposition and that this output was between 5 and 10 pages. Cleary Dep. (CARB), 8/7/03, at 8:13-20, 11:24-12:10. That computer run was requested, Cleary Dep. (CARB), 8/7/03, at 13:20-14:7, and never produced to Unocal by the FTC or CARB.

523. Cleary's recollection was that the computer run showed that excluding the Unocal data showed it did not have a large effect on the model's final responses. Cleary Dep. (CARB), 8/7/03, at 11:17-23.

(iii) CARB Did Not Use the Unocal Equations for the Predictive Model

524. Cleary never used any Unocal equations for any CARB work. Cleary Dep. (CARB), 8/7/03, at 166:5-13.

525. This fact is evidenced by an email exchange that occurred in 1996. In 1996, Cleary was asked by a CARB lawyer if he had any notes from the meetings between Unocal and CARB or any disks, which might contain Unocal data. RX 196; Cleary Dep. (CARB), 8/7/03, at 51:2-52:3. Cleary's response was that he had two disks, one dated 10/25/91 and one dated 7/6/92 of emissions data used in the development of the predictive model. Cleary Dep. (CARB), 8/7/03, at 52:4-16.

526. The two disks produced by CARB with those dates do not have equations but simply test data on them. RX 120; RX 7.

527. Furthermore, Mr. Cleary is not aware of anyone at CARB who used the equations. Cleary Dep. (CARB), 8/7/03, at 166:20-24.

528. Additionally, there are significant differences between the Unocal equations and the CARB predictive model equations. The Unocal equations shown to CARB are linear. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 162:3-10. CARB's model, adopted in 1994, is nonlinear. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 162:3 10. Additionally, there are differences in the parameters covered and the statistical treatment. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 162:11-163:2.

d) CARB's Predictive Model Is Different from the EPA Model

529. CARB was not the only regulatory agency to adopt a predictive model. In 1993, the United States Environmental Protection Agency, developed its own predictive model the "Complex Model." RX 65 at 003. Both the EPA and CARB models used as part of their data set emissions data from Unocal. RX 53 at 150-51; Cleary Dep. (CARB), 8/7/03, at 167:2-168:2.

530. There are a number of differences between CARB's predictive model and the Complex Model. The differences exist for several reasons. First, the two models were developed subject to different legal restrictions. RX 65 at 003.

531. Second, CARB's predictive model was developed subsequent to the Complex Model. These two factors allowed CARB access to a more robust data base and more sophisticated mathematical modeling techniques. RX 65 at 003; Cleary Dep. (CARB), 8/7/03, at 104:24-105:20.

532. Additionally, CARB and EPA treated the data differently for purposes of grouping and analyzing the data. RX 65 at 005-6; Cleary Dep. (CARB), 8/7/03, at 110:25-112:23.

533. CARB additionally chose to include caps on eight different parameters. Cleary Dep. (CARB), 8/7/03, at 113:21-114:23. These caps are much more restrictive than the EPA's. RX 65 at 006; Cleary Dep. (CARB), 8/7/03, at 121:2-122:17.

534. Cleary does not even remember discussion of making a model without cap limits because that would have been tantamount to a repeal of the cap limits. Cleary Dep. (CARB), 8/7/03, at 125:22-127:4.

535. Cleary believes the CARB model to be superior to the EPA approach. Cleary Dep. (CARB), 8/7/03, at 131:15-132:9. CARB staff made the decision to use the statistical approach they used based on the recommendation of consultant David Rocke. Cleary Dep. (CARB), 8/7/03, at 132:10-18.

536. CARB rejected alternative modeling approaches offered by WSPA because CARB felt its approach was more appropriate. Cleary Dep. (CARB), 8/7/03, at 181:10-182:8.

23) CARB's Reaction to Unocal's Patent

537. Unocal issued a formal announcement of the '393 Patent in a press release dated January 31, 1995. CX 599; *see also* RPF 137 (describing Unocal's announcement of and refiners lawsuit regarding the '393 patent).

538. On February 17, 1995, CARB's Executive Officer James Boyd wrote to Unocal, inviting Unocal to meet with CARB to discuss its marketing plans and the extent of the patent's claims. RX 47.

539. Shortly thereafter, Unocal representatives met separately with CARB staff, with California Governor Pete Wilson and with CARB Chairman John Dunlap.

540. CARB staff met with Unocal on March 17, 1995. RX 50. During their meeting, CARB staff expressed concern as to whether there would be an adequate supply of gasoline, and Unocal assured CARB that Unocal would not do anything to upset CARB's plans for the Phase 2 rollout, which was scheduled for the spring of 1996. Beach IH Dep. (Unocal), 1/23/02, at 82:13-83:19.

541. CARB also raised the subject of CARB's Phase 2 test program, which was scheduled for the following summer, and which would require 600,000 gallons of summer-time Phase 2 fuel. Explaining that it was in Unocal's interest, as well as CARB's, to ensure a smooth and successful implementation of the Phase 2 regulations in 1996, CARB asked Unocal to agree not to raise any patent infringement issues regarding this summer test fuel. RX 50. Unocal agreed that it would not assert any patent infringement claims in conjunction with this test program. RX 49.

542. Unocal also met with Governor Pete Wilson. As it had with CARB, Unocal assured the Governor that Unocal would not do anything to upset the rollout of Phase 2 gasoline. Beach

Dep. (Unocal), 6/19/03, at 63:13-64:16. During this meeting, Governor Wilson spoke highly of the U.S. patent system's ability to promote innovation; Wilson wished Unocal luck; and then the Unocal representatives had their pictures taken with Wilson. *Id.*

543. Internally, CARB's Jim Ryden drafted a memorandum in March 1995 looking at the background leading up to Unocal's patent announcement and discussing the issues this announcement presented for CARB. RX 62. The memorandum does not state or even imply that Unocal ever did anything to mislead CARB. *Id.*

544. Although it notes that one option might be for Unocal to place its patented formulations in the public domain, it does not state or imply that Unocal had already done so by sending its August 27, 1991 letter to CARB. *Id.*

545. On March 16, 1995, Unocal's Terry Larson spoke with CARB Chairman John Dunlap at a reception in Dunlap's honor. RX 840.

546. Dunlap never once accused Unocal of lying to CARB. Instead, he told Larson that he was impressed that Unocal's 76 Products President had taken time to brief him on the patent issues and spoke of the hard work that Unocal had done to maintain good regulatory relationships with CARB. He did express a concern to Larson that Unocal should brief him personally first—rather than CARB staff—when significant events occur. RX 840.

547. Far from seeing any erosion of Unocal's long-standing relationship with CARB as a result of the patent announcement, Larson reported that he believed Unocal had a "golden opportunity" to provide Dunlap with further briefings and further develop the relationship. RX 840.

548. Even in the midst of the patent litigation between Unocal and the refiners in 1996, several key CARB staff and board members would not say that they were deceived by Unocal. For example, Chairwoman Jan Sharpless was asked whether Unocal's conduct misled her. She replied:

> I'm not naive. I do recognize that—that companies take positions but also hedge their futures with other plans, business plans, in the event that certain circumstances might occur. I think it was clear that the reformulated proposal was a proposal that was gaining in acceptance by many stakeholders and that the event that it would become a reality was becoming clearer and clearer. So no, I'm not necessarily surprised, even though Unocal was strongly opposed to it, that they may have taken other actions.

Sharpless 1996 Dep. (CARB), 6/20/96, 44:17-45:30. Ms. Sharpless would not say she was deceived by Unocal, only "disappointed." *Id.* at 45:4-11.

549. Likewise, Dean Simeroth, head of CARB's Criteria Pollutants division was asked if he was deceived by Unocal. He replied that he did not personally feel deceived and that deceived was not a word he would use. Simeroth 1996 Dep. (CARB), 6/21/96, 220:19-221:1. He was then asked:

> Q. Put aside the issue of whether you think it happened intentionally or not or whether they had an obligation to disclose it or not. What I want to know is: Do you think that Unocal's conduct in the course of Phase 2 served to mislead you?
>
> [Objections and attorney colloquy omitted]
>
> A. The technical data provided to us by Unocal, to my knowledge at this point in time, was correct. The comments they provided to us on the other aspects of the regulatory development, my feeling is they were consistent with what we were hearing from the other companies. As I would not use the word "deceive," I would not use the word "misled."

Id. at 222:14-223:9.

550. Simeroth also testified that while he was surprised that Unocal had received a patent, he was not surprised that Unocal had not told CARB about its pending application:

> I can't say that we were routinely informed by companies when they apply for patents. The surprise was more that they had applied and had been granted one than the fact that they . . . had not told us that they were applying.

Id. at 229:11-230:1.

24) CARB Adopts the Phase 3 Regulations

551. The CARB staff began work in early 1998 to develop amendments to provide additional flexibility in the Phase 2 Regulations. RX 55 at 015 (referring to Phase 2 regulations as "CaRFG2"). The work began at the request of the refining industry via the WSPA. Among other things, WSPA requested changes to the cap limits and the Predictive Model in the CaRFG2 regulations. RX 55 at 015. According to CARB, the refiners' purpose was to facilitate reducing their reliance on MTBE in blending gasoline. RX 55 at 015. As demonstrated below (but not referred to in the Phase 3 Staff Report or Final Statement of Reasons) the refiners also wanted increased flexibility to blend around the parameters of the Unocal patents.

a) CARB Did Not Publicly Discuss the Unocal Patents During the Phase 3 Regulatory Process

552. From February 1999 through September 1999, CARB staff held eight public workshops to discuss: (1) possible amendments to the Phase 2 regulations and (2) the elimination of MTBE. RX 55 at 016.

553. The Unocal patents, however, were not publicly discussed during any of these workshops. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 130:21-131:7.

554. According to CARB's Dean Simeroth, the patents were not discussed in these public forums due to antitrust considerations. Simeroth Dep. (CARB), 7/9/03, at 200:16-201:8.

b) CARB Staff Met with Refiners Who Urged That the Regulations Be Changed in Response to the Unocal Patent

555. Unocal's patents were discussed during private nonpublic meetings between WSPA members and CARB officials, both before and during the Phase 3 process. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 131:8-17.

556. Despite the undisputed testimony that the refiners did meet with CARB to discuss the Unocal patent, Kevin Cleary, who was a principal author of the Phase 3 Staff report, does not recall any meetings with oil refiners in which the Unocal patents were discussed. Cleary Dep. (CARB), 8/7/03, at 146:10-16.

557. The discussions between CARB and WSPA regarding the Unocal patents centered on how T50 might be modified to give refiners more flexibility in regard to the patents. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 136:18-137:12.

558. For example, in early 1998, [redacted]

559. [redacted]

560. [redacted] *see also* Simeroth Dep. (CARB), 7/9/03, 185:18-186:14.

561. [redacted]

562. [redacted]

c) CARB Staff's Goal for Phase 3 Was to Maintain and Even Further Reduce Emissions from Phase 2 Levels

563. During the development of the Phase 3 regulations, CARB staff was working on the assumption that whatever it did it could not lose any of the benefits that it had obtained under the Phase 2 regulations. Chan Dep. (CARB), 8/29/03, at 73:11-75:7. CARB was actually trying to further emissions reductions. *See id.* at 75:8-16.

d) Phase 3 Staff Report: Initial Statement of Reasons

564. CARB staff released its Staff Report: Initial Statement of Reasons for the Proposed California Phase 3 Reformulated Gasoline Regulations on October 22, 1999. RX 55.

(i) No Consideration of the Unocal Patents

565. Despite CARB staff's numerous meetings with the refiners regarding amendments to the regulations to assist refiners in avoiding the Unocal patent, the Staff Report did not even mention the patent or any costs associated with patents. Instead, CARB staff explained that the "amendments [we]re being proposed in response to Governor Davis' March 25, 1999 Executive Order D-5-99 regarding the phase-out of the use of methyl-tertiary-butyl-ether (MTBE) in California gasoline." RX 55 at 010.

566. In developing their proposed amendments, the staff's objectives were to "provide flexibility to refiners to make or import CaRFG3 without MTBE, to preserve the significant emission benefits realized from the current CaRFG2 regulations, and to obtain additional emission reductions where technically feasible and economically reasonable." RX 55 at 010; *see also id.* at 015 (listing key objectives in developing the proposed regulations).

567. Further, when explaining the "Rationale for the Staff's Proposed Amendments" and listing the "Other Factors . . . Considered in Developing the Proposed Amendments," the Staff Report fails to refer to Unocal, its patents, or avoiding the patent claims. RX 55 at 017-23.

568. The reason why the Staff Report did not mention the Unocal patent or patent costs is explained by CARB Staff member Peter Venturini. Mr. Venturini specifically testified on behalf of CARB, that CARB did not even consider Unocal's patent in its Phase 3 regulations because the patent was still "in flux:"

> Q. September 29, 2000, it's five years after you heard about the Unocal patent and in fact the jury has already come back and awarded Unocal a royalty and found infringement; right?
> A. Correct.
> Q. You didn't consider the Unocal patent as part of these regulations; did you, sir?
> A. Well at that—that time it was my—
> Q. Did you consider the Unocal patent as part of the Phase 3 regulations?
> A. No.
> Q. Okay.
> A. Can I explain—
> Q. With the—with the finding of infringement and a royalty amount, you didn't consider it. Why?
> A. Basically because it was still in our view in a state of flux; there was continuing litigation and—and issues.
> Q. When you said it's in a state of flux, in fact CARB took the position that the patent was not valid; didn't they?
> A. Yeah, we—we believed that there were concerns with the validity of the patent.

Venturini Dep. (CARB), 5/14/03, at 402:17-403:15.

(ii) Driveability Index

569. One addition CARB did make to its proposed Phase 3 regulations was a Driveability Index. During the Phase 3 regulatory process, CARB staff was looking at whether to increase flat

limits for T50 and T90, which are the basic limits, and were also looking at whether to increase the caps for T50 and T90. Simeroth Dep. (CARB), 7/9/03, 153:10-154:1.

570. [redacted]

571. [redacted] CARB staff decided to include a Driveability Index in the proposed Phase 3 regulations in order to address the emissions issues associated with having too high a Driveability Index from increasing the limits. Simeroth Dep. (CARB), 7/9/03, 153:10-154:1; *see also, e.g.*, RX 55 at 020 (explaining D.I. proposal of 1225).

e) Adoption of the Phase 3 regulations

572. The Phase 3 Reformulated Gasoline regulations were adopted on June 16, 2000 following a December 9, 1999 hearing by CARB. The Phase 3 regulations prohibited the production of California gasoline, after December 31, 2002, with the use of MTBE, established Phase 3 standards, and established the Phase 3 Predictive Model. RX 51 at 007.

(i) CARB Did Not Consider the Unocal Patents

573. At the December 9, 1999 hearing, the Board received numerous written and oral comments. RX 64 at 005. Notably, the Unocal patents were not publicly discussed at the hearing. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 130:21-131:7.

574. At the conclusion of the hearing, the Board adopted Resolution 99-39, in which it approved the originally proposed amendments with several modifications.

(ii) Driveability Index

575. One particular modification dealt with the inclusion of a Driveability Index among the regulated parameters. Simeroth Dep. (CARB), 7/9/03, 153:10-154:1; *see also, e.g.*, RX 55 at 020 (explaining D.I. proposal of 1225).

576. In fact, CARB staff ended up dropping Driveability Index from their proposal. Simeroth Dep. (CARB), 7/9/03, 154:2-14.

577. First, the oil industry agreed to not push for an increase in the T50 and T90 caps. And with no increase in the caps, the automobile industry agreed that they would not push for a Driveability Index to be proposed as well. Simeroth Dep. (CARB), 7/9/03, 154:2-14.

578. Second, the scientific peer group overseeing CARB's work criticized D.I. as a subjective measure not directly related to emissions reductions. Cleary Dep. (CARB), 8/7/03, at 198:8-199:1; *see also* Simeroth Dep. (CARB), 7/9/03, at 154:15-155:13; RX 64 at 092-93 (Appendix B-2); Venturini Dep. (CARB), 5/15/03, at 600:13-601:11.

(iii) A Partial Increase in T50 Levels Was the Result of the MTBE Phaseout

579. As adopted, the Phase 3 regulations increased the flat T50 limits by two degrees Fahrenheit from 211° to 213° F and the averaging limits from 201° to 203° F. RX 64 at 018. The Final Statement of Reasons explains the increase in terms of providing refiners flexibility due to the removal of MTBE and the consequent removal of MTBE's depressing effect on T50: "Particularly since removing MTBE from CaRFG raises T50 substantially, the modified T50 specifications provide significantly greater leeway in producing complying CaRFG3 without MTBE." *Id.* at 019.

580. The staff proposal included T50 and T90 cap limits that were each higher than the cap limits for the Phase 2 regulations, in order to provide the refiners with additional flexibility in meeting the Phase 3 standard without MTBE. RX 64 at 021. The Board, however, modified this proposal and returned the cap limits for T50 and T90 back to the cap limits that applied under Phase 2. *Id.*

(iv) CARB Rejected Further Reductions in RVP and T50

581. CARB staff rejected the suggestion by WSPA to further raise the level of T50, RVP, and T90. Cleary Dep. (CARB), 8/7/03, at 195:6-16; RX 64 at 038. WSPA specifically recommended an increase in RVP from 6.9 to 7.0 psi, in T50 from 213° to 214° F, and in T90 from 305° to 310° F. RX 64 at 038 (cmt. 10).

f) Even after the Phase 3 Regulations Were Adopted, Refiners Continued to Meet with CARB Regarding the Unocal Patents

582. Even after the Phase 3 regulations were adopted, refiners continued to ask CARB to make changes in the new Phase 3 regulations to make it easier for refiners to avoid the numerical claim limitations in the Unocal patents. [redacted]

583. [redacted]

[redacted]

584. Although CARB did make certain changes in its Phase 3 regulations and in the Phase 3 predictive model, [redacted]

25) Unocal Had No Duty to Disclose its Pending Patent Rights, CARB Had No Expectation of Such Disclosure, and CARB Did Not Rely on the Absence of Patent Rights

a) CARB Rules and Regulations Do Not Require Disclosure of Patent Applications or Issued Patents

585. Unlike some private standard-setting bodies, CARB has no written or formal policy requiring those parties communicating with CARB during a rulemaking to disclose patents or patent applications.

586. By law, CARB cannot have or attempt to enforce any unwritten policies. Boyd Dep. (CARB), 8/22/03, at 251:6-16; RX 332 at 006 (§ 11347.5(a)).

587. There is no official regulation that requires those persons or entities interested in communicating with CARB during a rulemaking to disclose patents or patent applications to CARB. Boyd Dep. (CARB), 8/22/03, at 251:17-252:1.

588. Furthermore, during the tenure of Jim Boyd as CARB's Executive Officer, during the years 1982-1996, the State of California never gave any directive that patented technologies could not be used in CARB's regulations. Boyd Dep. (CARB), 8/22/03, at 252:18-21.

b) CARB's Requests to Refiners in the Phase 2 Process Did Not Require or Ask for the Disclosure of Pending Patent Applications

589. CARB has never asked interested parties or industry groups in any rulemaking to disclose the existence of patents or patent applications. Complaint Counsel's Responses and Objections to Respondent's Second Set of Requests for Admissions ("2d RFA Responses" at Resp. 11); *see, e.g.*, [redacted]; *see also* Venturini Dep. (CARB), 5/13/03, at 108:24-109:9.

590. During the Phase 2 rulemaking process, CARB did not request that interested parties disclose their patent applications or issued patents to CARB. 2d RFA Responses at Resps. 8, 12; Sharpless Dep. (CARB), 8/6/03, at 168:1-6; Boyd Dep. (CARB), 8/22/03, at 114:18-115:02; Fletcher Dep. (CARB), 7/8/03, at 19:4-20:21.

591. Additionally, CARB never asked Unocal to disclose patents or pending patents from 1990 through 1995. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 120:15-121:17.

592. CARB knew that it was standard practice within the oil industry to have secrecy agreements on pending patent applications. Simeroth Dep. (CARB), 7/9/03, at 45:18-21.

593. CARB never asked about any patents even though CARB's Dean Simeroth, who participated in the EPA's negotiated rulemaking with respect to clean fuels, recalls general discussions regarding exclusivity, confidentiality, and potential patent rights during the EPA process. Simeroth Dep. (CARB), 7/9/03, at 224:23-225:17.

594. Further, James Boyd was generally aware of provisions of the Clean Air Act ensuring reasonable royalties to be granted to an owner of patent rights in case the owner refuses to license where patented technologies are required to be used. Boyd Dep. (CARB), 8/22/03, at 252:8-23.

595. Additionally, no one at CARB ever asked about patents despite the fact that a California statute governing what must be treated as public records exempts trade secrets. It exempts from the definition of trade secret something which is patented. *See* Venturini Dep. (CARB), 5/13/03, 108:1-23; RX 9.

596. Patent strategy was not a topic of discussion between CARB and any company during Phase 1 or Phase 2 regulations for gasoline. Simeroth Dep. (CARB), 7/9/03, at 45:22-46:10.

597. One witness from CARB indicated that he became aware of a patent held by Mr. Talbert and that he had another staff person, John Courtis, analyze the patent. Simeroth Dep. (CARB), 7/9/03, at 220:21-224:22.

598. Courtis, however, denied any knowledge of this; Courtis testified that he did not evaluate Mr. Talbert's patent because "there was no issue of patent at the time" and because "he never considered this a serious thing." Courtis Dep. (CARB), 8/28/03, at 27:15-29:6.

599. CARB did not conduct an analysis of the patent nor request any further information, including cost information, from Talbert in connection with its patent. Courtis Dep. (CARB), 8/28/03, at 28:2-29:11.

600. No one within CARB was responsible for determining whether regulations were impacted by existing or potential patents. Venturini Dep. (CARB), 5/13/03, at 140:25-141:8.

601. There were no written communications from CARB that informed refiners of CARB's desire for the refiners to inform it of anything that might affect CARB's decisionmaking. Venturini Dep. (CARB), 5/13/03, at 141:9-15.

602. Individuals from CARB have testified that they would not have expected individual companies to come forward with such information.

603. For example, in his 1996 deposition, Dean Simeroth acknowledged: "I wouldn't have necessarily expected them to bring that to us. It's a decision the companies have to make, what information they want to share with us." Simeroth Dep. (CARB), 7/9/03, at 233:15-234:5; *see also* Boyd Dep. (CARB), 8/22/03, at 199:12-15 ("Q. You don't know if you would have expected a patent application to have been brought to CARB's attention, that would have been conjecture; correct? A. Yeah. That would be conjecture, yes.").

604. CARB Chairwoman Sharpless's 1996 testimony was that "[i]t's been my experience that those who go through a regu—regulated proceeding don't—are not always forthcoming with all of the information that affects their industry, bar none." Sharpless Dep. (CARB), 6/20/96, at 32:7-22. Ms. Sharpless testified that CARB understood that refiners participating in its rulemaking would not share with it information that "they did not want [CARB] to have," and would only provide CARB with "information that best represents their interests." Sharpless Dep. (CARB), 8/6/03, at 167:18-25.

605. Even today, CARB does not ask parties interested in a particular rulemaking to disclose their patents or pending patent applications. Venturini Dep. (CARB), 5/13/03, at 145:23-148:22.

c) The Refiners' Practices During the Phase 2 and Phase 3 Regulatory Process Show That Disclosure of Patent Applications Was Not Required or Expected

606. Refiners' actual disclosures to CARB are further evidence that the refining industry bore no obligation to disclose patent applications.

607. During Phases 2 and 3 of the regulatory process, a number of other refiners had patent applications pending related to gasoline for sale in California:

a. [redacted]

b. [redacted]

c. [redacted]

608. None of these refiners disclosed its applications to CARB: [redacted]

609. Several refiners had [redacted]

610. [redacted]

611. [redacted]

612. [redacted]

[redacted]

613. [redacted]

614. [redacted]

615. [redacted]

616. [redacted]

617. [redacted]

618. [redacted]

619. [redacted]

620. [redacted]

621. [redacted] the policies and practices of the industry standard-setting organizations ("SSO's") in which members of the refining industry participated. The relevant SSO's also did not require participants in standard-setting activities to disclose patents (much less patent applications). *See* RX 849 (SAE Intl. response to Unocal subpoena); RX 850 (ASTM Intl. response to Unocal subpoena); RX 851 (American Petroleum Institute response to Unocal subpoena).

622. The fact that the refiners did not disclose their own patent applications to CARB—either before or after asserting that Unocal should have disclosed its applications—shows plainly that there was no expectation by CARB or the industry of any such disclosure obligation.

d) The Refiners Did Not Even Disclose Unocal's Patent to CARB Upon Learning of its Issuance

623. Even after the majority of refiners found out about the '393 patent in 1994, they did not disclose it to CARB. [redacted]

624. This fact is evidence that the refiners thought the patent was not relevant, and there was no expectation of required patent disclosure.

625. [redacted]

626. [redacted]

627. [redacted]

628. Similarly, Chevron knew no later than April 1994 about the '393 patent. [redacted] RX 295 (April 14 letter from Chevron to PTO seeking patent history.) [redacted]

629. [redacted]

630. [redacted]

631. [redacted]

632. [redacted]

633. [redacted]

634. The refiners' failure to disclose the '393 Patent to CARB after its issuance is additional confirmation that there was no duty or expectation to disclose patent applications or patents to CARB as part of the Phase 2 regulatory process.

e) CARB Did Not Rely on the Absence of Patent Protection for Technologies Affecting the Production of RFG

635. The Complaint alleges that CARB would have acted differently had it known of Unocal's pending patent rights before it actually did. *E.g.*, Complaint ¶¶ 5, 45, 80. The evidence does not support this allegation.

636. Numerous considerations were made by CARB staff and CARB in the promulgation of the Phase 2 RFG regulations. Despite all of the factors considered by CARB in developing its Phase 2 regulations, CARB officials did not consider patent protection, licensing fees, or the absence thereof, in the proposal or adoption of the regulations.

637. Professor James M. Griffin, Ph.D., is an expert in energy economics who will be called to testify in this matter. Professor Griffin described in his Report and in his deposition the usefulness of applying revealed preference analysis to determine what regulations CARB would have adopted if the alleged Unocal deception had not occurred. Griffin Rpt. at 14-17, 33-44; Griffin Dep. (Expert), 10/13/03, at 130:15-131:16, 152:17-154:12.

638. As explained by Professor Griffin, revealed preference analysis essentially permits an economist to draw inferences about how an individual or organization would behave in given circumstances compared to their observed behavior in other circumstances. Griffin Rpt. at 14-17.

639. In this case, revealed preference analysis of CARB's behavior during the development of California diesel regulations as well as Phase 1, Phase 2, and Phase 3 reformulated gasoline regulations shows that CARB did not rely on the absence of patent protection in promulgating the Phase 2 regulations. Griffin Rpt. at 43-44.

640. Phase 1 of the reformulated gasoline regulations, for example, required all gasolines to have a detergent additive. Jessup Dep. (Unocal), 4/23/03, at 47:9-18.

641. S. Kess Alley, J. Wayne Miller, Bill Mallett, and Michael Croudace from Unocal met with CARB Staff on July 28, 1989, to advise CARB of Unocal's plan for compliance with the Phase 1 regulations. CX 131. Dr. Croudace made a presentation on behalf of Unocal. Croudace Dep. (Unocal), 6/12/03, at 19:25-20:2; RX 165.

642. Unocal's presentation to CARB disclosed Unocal's specific detergent additive technology, sought CARB's approval, and referred to the detergent technology as "A Unique Unocal Patent Pending Development." RX 165 at CARB-FTC 0060533.

643. CARB did not ask anything further about Unocal's patent application, did not incorporate any potential, associated cost into its cost-effectiveness analysis, and did not delay its additive rulemaking to consider the "patent pending development." Resp. 10 of 2d RFA Responses; Simeroth Dep. (CARB), 7/9/03, at 20:25-21:16, 21:20-22:21, 25:4-16.

644. CARB completed its gasoline additive rulemaking by issuing a regulation without regard for Unocal's "patent pending development" or any associated, potential cost. Resp. 10 of 2d RFA Responses; Simeroth Dep. (CARB), 7/9/03, at 21:20-22:21.

645. CARB demonstrated a similar indifference to patents and licensing fees in connection with its diesel regulations.

646. [redacted]

647. [redacted]

[redacted]

648. [redacted]

[redacted]

649. [redacted]

[redacted]

650. [redacted]

651. [redacted]

[redacted]

652. [redacted]

[redacted]

653. There is no evidence that CARB ever expressed any concern over patents, pending patents or licensing fees associated with complying with regulations.

654. The testimony of CARB staff and Board members establishes that CARB did not consider the possibility of patents during the Phase 2 regulatory process. Boyd Dep. (CARB), 8/22/03, at 115:3-14.

655. CARB did not ask ARCO about its market position or patents on MTBE even though ARCO was the largest producer of MTBE in 1991 and the proponent of an oxygenate requirement in the Phase 2 regulations, and even though MTBE was the "oxygenate of choice by the refining industry." Boyd Dep. (CARB), 8/22/03, at 220:9-221:7; Courtis Dep. (CARB), 8/28/03, at 134:11-25.

656. Nor did CARB consider whether ARCO—the leading proponent of the strict specifications for Phase 2—had any patents or pending patents related to reformulated gasoline generally. Venturini Dep. (CARB), 5/13/03, at 159:1-160:13.

657. CARB did not inquire about patent rights associated with ASTM standards that were incorporated in the Phase 2 regulations, even though the ASTM standards specifically advised that patent rights associated with the ASTM standards had not been determined and that "the risk of infringement of such rights, are entirely [the users'] own responsibility." Venturini Dep. (CARB), 5/13/03, at 150:12-25; RX 13 at CARB 0004968.

658. CARB did not ask any participant in the process about patents or pending patent applications. *See, e.g.*, Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 120:15-121:3, 121:11-17; Courtis Dep. (CARB), 8/28/03, at 22:1-20; Bea Dep. (Chevron), 9/3/03, at 36:7-11.

659. CARB staff consistently testified that they were not thinking in terms of gasoline formulations being patented. *See* Boyd Dep. (CARB), 8/22/03, at 198:2-199:4; Simeroth Dep. (CARB), 7/9/03, at 228:19-230:1 (stating that he was more surprised that the patent had been granted than that Unocal had applied for a patent but not told CARB); *see also* [redacted]

660. CARB became aware of one patent related to reformulated gasoline—the Talbert patent—but CARB never investigated the patent because staff never considered it "a serious thing." Courtis Dep. (CARB), 8/28/03, at 28:2-22.

661. In the same vein, however, CARB staff did not take the Unocal patent seriously even when the patent issued. [redacted] James Boyd testified that his reaction when receiving the news of Unocal's patent was "humor." Boyd Dep. (CARB), 8/22/03, 198:2-23. According to Mr. Courtis, "nobody really believed that the patent will stand [sic] court situation." Courtis Dep. (CARB), 8/28/03, at 12:7-15:6 (explaining why he did not incorporate the '393 Patent into cost estimates prepared at CARB in 1996).

662. Mr. Boyd testified that when he learned of the issuance of a reformulated gasoline patent to Unocal, he was surprised but not dismayed by the development. Boyd Dep. (CARB), 8/22/03, at 198:2-199:11. Likewise, when Dean Simeroth learned of the patent, he was not concerned. Simeroth Dep. (CARB), 7/9/03, at 230:2-15.

663. Even in Phase 3 of the reformulated gasoline regulations—five years after CARB learned of the '393 Patent; after the U.S. District Court and jury had found that the patent was not

invalid, not unenforceable, and that it was infringed by refiners; and after the jury had returned a damages verdict of 5.75 cents per gallon of infringing gasoline—CARB did not consider the '393 Patent in connection with its regulations "[b]asically because it was still in our view in a state of flux; there was continuing litigation and—and issues." Venturini Dep. (CARB), 5/14/03, at 402:17-403:10.

664. In sum, the evidence does not show that Unocal had any duty to disclose its patent to CARB. Furthermore, there is no evidence that CARB would have acted differently had Unocal disclosed its pending patent application earlier in the Phase 2 regulatory process than it did. The evidence therefore shows that Unocal's disclosures regarding T50 and its silence with respect to its patent application were neither material to nor misleading to CARB staff. *See* Boyd Dep. (CARB), 8/22/03, at 208:18-209:18.

B. Unocal Did Not Defraud Auto/Oil

1) Unocal's Disclosure of Information to Auto/Oil

665. On September 16, 1991, Dr. Peter Jessup of Unocal made a presentation to the Auto/Oil Research Program group that was similar to the presentation Unocal had previously made to CARB regarding Unocal's emissions research. Jessup IH Dep. (Unocal), 1/25/02, at 124:17-125:3.

666. The presentation to Auto/Oil showed the fuel compositions used by Unocal in its one-car test to assess emissions effects. It also showed the equations (with coefficients) and fuels from the ten-car test. RX 230; Jessup IH Dep. (Unocal), 1/25/02, at 124:17-125:3.

667. Dr. Jessup indicated that Unocal had made its data available to CARB and that the data was publicly available. RX 231 at RPC 00036.

668. Unocal's understanding, when it shared its data with CARB, Auto/Oil and WSPA, was that those organizations "[could] do whatever they want with it and they could do the same analysis [done by Dr. Jessup] or they could do their own analysis." Jessup IH Dep. (Unocal), 1/25/02, at 125:25-126:13.

669. Dr. Jessup testified:

> A: They could take data out of it, they could add data to it, use it for an entirely different purpose. I had no real expectations that any of them would really use the data. I thought that perhaps it would make them broaden their experiment, go look at some things they didn't want to look at before. That would have been a good outcome from my point of view.
>
> Q: In making this presentation to Auto/Oil, was it your understanding that you were disclosing to Auto/Oil the totality of your invention?
>
> A. The totality? You mean everything that was in the patent?
>
> Q. Right.
>
> A. No. We didn't talk about the patent. We didn't talk about compositions. We didn't talk about patent claims. No, we had no intention of disclosing that. We didn't even know what the claims were going to be, if ever. We were trying to get Auto/Oil to get off their duff and do a good experiment. Pardon the language.

Jessup IH Dep. (Unocal), 1/25/02, at 126:7-127:1.

670. The minutes from the Auto/Oil meeting state, "Mr. Jessup explained that the data from Unocal's research has been provided to CARB and is in the public domain." RX 231 at RPC 00036. David Meyer, the antitrust lawyer for the Auto/Oil group who authored the minutes, has testified that [redacted]

671. Dr. Jessup testified that he does not believe he used the words "public domain" in his presentation. Jessup IH Dep. (Unocal), 1/25/02, at 125:4-12. In any event, [redacted]

672. At no time did Unocal disclose to CARB the ranges of compositions that it identified as novel and unique compositions of cleaner-burning gasolines or the methods of making or using these compositions to reduce emissions, which are the inventions claimed in the five Unocal RFG patents. Jessup IH Dep. (Unocal), 1/25/02, at 110:4-111:6.

673. At no time did Dr. Jessup state or suggest that Unocal was relinquishing its rights to the inventions that it derived from the research data and equations presented to Auto/Oil. Jessup IH Dep. (Unocal), 1/25/02, 125:4-127:6.

2) Auto/Oil's Members Were Competitors Who Did Not Owe Each Other Fiduciary Duties

674. Auto/Oil members were competitors within the automotive and oil industries, who were organized together for research purposes under the National Cooperative Research and Production Act, 15 U.S.C. § 4301, *et seq.*

675. The obligations of the Auto/Oil members were set forth in a founding membership agreement ("Auto/Oil Agreement"). RX 226 (dated Oct. 14, 1989).

676. All members signed the Auto/Oil Agreement, stating that it embodied "the entire agreement of the Members" which "supersed[ed] any other agreements or understandings among the Members." RX 226 at U 0003050.

677. There is nothing in the contractual relationship between Unocal and the other Auto/Oil members from which one can infer any sort of duty to disclose to others the existence of its pending patent application, the contents of such an application or any internal discussions Unocal may have had regarding royalties. RX 226.

678. To the contrary, as required by the NCRA and stated expressly in the Auto/Oil Agreement, members of Auto/Oil agreed that "[n]o member will utilize the Program for any . . . [e]xchanging of information among competitors relating to cost, sales, profitability, prices, marketing, or distribution of any product, process or service that is not reasonably required to conduct the research and development that is the purpose of such venture. . . ." RX 226 at U0003034 (¶ 3(A)).

679. The Auto/Oil members understood that antitrust laws prevented them from discussing or disclosing business plans, marketing plans, or price or cost information such as potential license royalty terms. Meyer Dep. (Auto/Oil), 7/14/03, at 50:19-51:2. The Auto/Oil Agreement itself also prohibited members from, among other things, "[e]ntering into any agreement or engaging in any other conduct ... to restrict or require the sale, licensing, or sharing of inventions or developments not developed through [the Auto/Oil program]." RX 226 at U0003035 (¶ 3(c)(i)).

680. [redacted]

3) Unocal's Research Was Independent Research—not the "Work of the Program"

a) The "Work of the Program" Versus "Independent Research" under the Auto/Oil Agreement

681. The Complaint alleges that, by presenting its research data and equations to Auto/Oil, Unocal donated its interest in its now-patented inventions to the "work of the Program." The evidence does not support this allegation.

682. The Auto/Oil Agreement distinguishes sharply between the "work of the Program" and "Independent Research." RX 226 at U0003033 ¶ 2(E ("work of the Program"); *id.* at U0003040-41 ¶ 6(B) ("Independent Research"). The former was work that was conducted, paid for, and published by the Program. *See* RX 226 at U0003035 ¶ 4(A) ("The Program will be managed by the Research Planning Task Force. . . ."); U0003037 ¶ 4(C) ("No Member of the Program shall enter into any contract on behalf of the Program . . . except with the approval of the Research Planning Task Force."); U0003038 ¶ 5(A) (describing members' obligations "to contribute such funds as may be necessary to develop and complete all research approved by the Research Planning Task Force. . . ."); U0003040 ¶ 6(A) (". . . all of the research and testing to be carried out in the Phase I Program will be disclosed in the final report. . . ."). The latter was work that was conducted, paid for, and published (if at all) by the individual member(s). RX 226 at U0003040-41 ¶ 6(B).

683. The work of the Program was the property of the Program to be donated to the public. RX 226 at U0003033 ¶ 2(E). In contrast, the independent research of an individual member was the property of that member. RX 226 at U0003040-41 ¶ 6(B).

684. The Auto/Oil Agreement gave each member the right to pursue independent research "on any matter, including reformulated gasoline." RX 226 at U0003040 ¶ 6(B). If a member would

choose to engage in independent research "the project shall not be deemed to be undertaken by the Program." *Id.* at U0003041 ¶ 6(B).

685. Under the Agreement, "neither the Program nor the other Members shall have any rights or obligations . . . by reason of this Agreement . . . [and] the other Members shall not have any rights to participate in such project by reason of this Agreement." RX 226 at U0003041 ¶ 6(B).

686. Moreover, "[a] Member who has undertaken . . . an independent research project shall not be obligated . . . [to] disclose . . . the fact that such independent research has been or is being undertaken . . . ." RX 226 at U0003040 ¶ 6(B).

687. Significantly, the Agreement also provides "[n]othing in this Agreement shall be deemed to constitute a waiver of existing or future proprietary rights that a Member may otherwise possess." RX 226 at U0003041 ¶ 6(B).

688. According to the program's antitrust counsel, [redacted]

b) Unocal's Work Did Not Become the "Work of the Program"

689. Auto/Oil was organized in anticipation of the EPA and CARB soon-thereafter enacting regulations for reformulated gasoline.

690. Members were interested in [redacted]

691. An extensive literature search was conducted, and participating companies also "donated" information—

692.

693. Patents and technical papers were a part Auto/Oil's search of the literature.

694. The information retrieved in the literature search and any information contributed by member companies helped to guide the Auto/Oil Program in conducting its own experiments. Auto/Oil considered the prior studies

695. Members recognized, however, that patents rights associated with the work retrieved through these processes were not extinguished by virtue of them being considered or discussed by Auto/Oil.

[redacted]

696. The Unocal RFG work was "independent research" belonging to Unocal.

697. It was designed, conducted, and paid for by Unocal.

698. No Auto/Oil funds were used, no direction was provided by Auto/Oil, and none of Unocal's work was published in the final reports of Phases 1 and 2 of the Auto/Oil program. RX 424; [redacted]

699. Even though Unocal's first patent issued in 1994, no participant in Auto/Oil has ever alleged to Unocal that Unocal's intellectual property was the "work" of the Auto/Oil program. The first time that such an allegation was ever made was in the Complaint in this action in 2003.

700. Unocal's research data contributed to the Auto/Oil Program just like the other published information that was retrieved through the literature search and any other information shared by Auto/Oil Program members. Jessup IH Dep. (Unocal), 1/25/02, at 125:25-126:13. (explaining Unocal's understanding, when it shared its data with Auto/Oil, was that Auto/Oil "[could] do whatever they want with it and they could do the same analysis [done by Dr. Jessup] or they could do their own analysis"). Unocal did not relinquish its rights in its inventions by presenting its data and equations.

701. Contrary to the allegations in the Complaint, there is no reason to believe that Unocal's work should be treated any differently than other patents or published information. That

is, there is no reason to believe that Unocal ceased to own its patent rights in its work simply because it presented its data and equations to Auto/Oil.

C. Unocal Did Not Defraud WSPA

702. Unocal was a member of the WSPA during the Phase 2 rulemaking process.

703. WSPA had numerous conversations with CARB. [redacted] commissioned a cost study, [redacted] and provided comments on the proposed Phase 2 regulations. *E.g.*, RX 10 (Final Statement of Reasons) at CARB0000292-94.

704. The Complaint alleges that WSPA members were harmed by "a materially false and misleading impression" created by Unocal that Unocal did not have any intellectual property rights associated with its emissions research results. Complaint ¶ 86.

705. The allegations regarding WSPA focus on two things: (1) Unocal's disclosure of its data to WSPA in connection with WSPA forming its position on the proposed regulations; (2) Unocal's failure to disclose its pending patent application or potential royalties in connection with WSPA's cost analysis for Phase 2. Complaint ¶¶ 85-90.

706. The allegations of harm to WSPA are unsupported by the evidence.

1) Unocal's Disclosure of Information to WSPA

707. On or about September 10, 1991, Unocal made a presentation to the Emissions Working Group Subcommittee of the Gasoline Issues Group of WSPA. CX 271.

708. Drs. Peter Jessup and Michael Croudace represented Unocal at this meeting. CX 271 at WSPA_FTC0009744.

709. In addition to making a presentation to WSPA, Unocal provided the same data to WSPA that it had previously provided to CARB. [redacted]

710. Unocal did not disclose to WSPA that it had a pending patent application. Jessup IH Dep. (Unocal), 1/25/02, at 84:2-85:10. Nor did Unocal provide information regarding potential royalties from any patent that might issue from the application.

2) Unocal Had No Duty to Disclose its Patent Application to WSPA

a) Unocal Had No Fiduciary Duty to WSPA Members

711. WSPA members, like the Auto/Oil members, were competitors. *See* RX 672 at UFTC 071350 (describing WSPA was an association of oil companies who made, used and sold petroleum products (including gasoline) for the western United States). As such, WSPA members had no fiduciary duties to disclose information to the other members.

712. WSPA has specifically denied ever having documents evidencing a fiduciary duty between the members. RX 673 ¶ 4 ("WSPA does not possess or have custody or control of any documents evidencing any fiduciary relationship between or among WSPA members. Nor has it possessed or had custody or control of any such documents in the past."); [redacted] *see also* RX 674 at 006.

713. In fact, WSPA's guidelines, like the Auto/Oil Agreement, prohibited the disclosure of sensitive information between the members.

b) WSPA Members' Status as Competitors Restricted Them from Disclosing Potential Royalty or Other Pricing/Cost Information

714. WSPA's antitrust guidelines specifically prohibited members from exchanging or disclosing information relating to pricing, supply, cost, business strategies, or any other

competitively sensitive information—including patents. [redacted]

[redacted] RX 670 at WSPA00007 (WSPA antitrust policies prohibited discussion of "past, present or future prices or any aspect of such prices . . . information relating to the costs that members have incurred or expect to incur or any aspect of those costs . . . Discussion or exchange of other information that may be competitively sensitive should be scrupulously avoided"); *id.* at WSPA 0009 ("Do not discuss . . . members' or competitors' business plans or marketing strategies [and] [o]ther competitively sensitive types of information."); *see also* RX 166 (reminding CARB of inability as a trade association to provide cost information).

715. WSPA members followed this guidance. [redacted]

716. Unocal, like many other companies, considered its pending patent application to be competitively sensitive and had a policy of not disclosing such information. Beach IH Dep. (Unocal), 1/23/02, at 54:8-13, 59:16-22; Jessup IH Dep. (Unocal), 1/25/02, at 150:3-14; Wirzbicki IH Dep. (Unocal), 8/7/02, at 209:1-210:19; [redacted]

[redacted]

717. Any plans relating to potentially charging royalties would have been (at that time) a future business plan relating to pricing—the very sort of information that WSPA's policies said members should not discuss.

718. Given the undisputed evidence that there is no fiduciary duty between members of a trade association such as WSPA, as well as the undisputed evidence that WSPA members were directed not to discuss with one another competitively sensitive business plans or any aspect of pricing or costs, there is no basis upon which to find that Unocal had any duty to disclose anything related to its pending patent application.

c) Unocal Did Not Violate Any WSPA Processes or Procedures

719. There no evidence that Unocal violated any processes or procedures of WSPA. WSPA's corporate representative has testified that other than a dues dispute in 1997 (which has since been resolved) [redacted]

720. WSPA never asked Unocal to disclose patents or pending patents from 1990 to 1995. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 120:15-121:6.

721. [redacted]

722. The only specific WSPA procedures that the Complaint alleges were violated by Unocal relate to a cost study that WSPA commissioned in 1991. *See* Complaint ¶¶ 56, 57, 87. According to the Complaint, this cost study, which estimated the costs of the proposed regulations

on a cents-per-gallon basis, "could have incorporated costs associated with potential royalties flowing from Unocal's pending patent rights." Complaint ¶ 57.

723. Complaint Counsel's allegations are based on the affidavit that Turner Mason's Robert Cunningham sent to the FTC in 2001, [redacted]

724. [redacted] there is no basis upon which to infer that Unocal had any duty to inform Cunningham of potential royalties from an unknown, potential future license agreement on a patent (or patents) which had not yet issued. [redacted]

725. [redacted]

726. [redacted]

727. [redacted]

728. In this 1990 Auto/Oil study, Turner Mason gave a number of significant caveats about its work, noting that "this bulletin does not purport to present estimates of costs of producing what has come to be referred to as 'reformulated gasoline.'" RX 342 at U 0095381; [redacted]

729. This report warned that "[c]ost estimates were based on the use of presently available refinery technology and therefore do not include provisions for potential technological improvements." RX 342 at U 0095385.

730. [redacted]

731. [redacted]

732. There is no evidence that Turner Mason ever sought from Unocal (or any other company) any estimates of what potential licensing fees could someday be in the future on potential patented technology. Nor would this information have been of any use to Turner Mason, [redacted]

d) The Turner Mason Analysis Done for WSPA Did Not Use Individual Refinery Costs Because of WSPA Antitrust Guidelines

733. CARB gave no guidance as to how one was to conduct a cost-effectiveness analysis. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 159:25-160:3.

734. Mr. Cunningham did not survey individual companies on their individual understandings relating to gasoline prices and costs, and he underscored this point in his comments to CARB at the hearing: "There was no survey made, because of antitrust considerations on individual companies' data." RX 60 at CARB0001261-62.

735. WSPA antitrust guidelines, in fact, precluded refiners from sharing individual costs among themselves or with a consultant doing work for the association. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 151:3-9.

736. The WSPA antitrust guidelines also prohibit exchanging strategy information. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 152:7-10.

737. Mike Kulakowski from Unocal did not understand the Turner Mason economic analysis to contain individual refinery costs. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 144:11-16.

738. He does not recall whether he gave Turner Mason any actual royalty information. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 145:8-10.

739. Kulakowski was told that Turner Mason had used information from Unocal based upon a previous study Turner Mason had done. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 145:17-146:8.

740. Kulakowski was not asked whether such information could be used in the analysis then being performed. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 146:14-17.

741. Based on all of the evidence, this Court cannot conclude that Unocal intentionally defrauded WSPA or otherwise breached any duty to WSPA to disclose its pending patent application or potential royalties associated therewith.

3) The Refiners Did Not Rely on Unocal's Alleged Misrepresentation

742. The Complaint alleges three ways in which the members of Auto/Oil and WSPA purportedly relied upon Unocal's alleged fraud.

743. First, the Complaint alleges that but-for Unocal's fraud, WSPA and Auto/Oil participants would have advocated that CARB adopt regulations that minimized or avoid infringement. Complaint ¶ 90(a).

744. Second, the Complaint alleges that refiners would have advocated that CARB negotiate license terms substantially different than what Unocal was later able to obtain. *Id.* ¶ 90(b).

745. Finally, the Complaint alleges that but-for Unocal's fraud, refiners would have been able to incorporate knowledge of Unocal's pending patent rights in their capital investment and refinery reconfiguration decisions to avoid and/or minimize potential infringement. *Id.* ¶ 90(c).

a) There Is No Evidence That WSPA or Auto/Oil Participants Would Have Lobbied CARB Differently

746. During the Phase 2 regulatory process, ARCO was the only major refiner who lobbied in favor of the stringent specifications that CARB adopted. *E.g.*, RPF 340. The other refiners lobbied against stringent specifications. *E.g.*, RPF 361.

747. When the '393 patent issued, the refiners took the position that the patent was invalid. Nothing about the refiners' conduct after they learned of the '393 patent demonstrates that they would have adopted different regulatory strategies had they known about Unocal's patent application during the Phase 2 rulemaking.

748. Several California refiners became aware of the '393 patent nearly a year before Unocal's press release regarding the patent. Not one of those refiners brought the patent to CARB's attention even though CARB was in the midst of developing its predictive model regulation at the time. [redacted]

749. After Unocal's January 31, 1995, announcement, the refiners told CARB that they believed the patent was invalid. [redacted]

750. CARB agreed with the refiners' determination of invalidity: John Courtis of CARB testified, "Nobody really believed the patent will stand a court situation." Courtis Dep. (CARB), 8/28/03, at 13:10-14:24.

751. In 1994, the refiners, through WSPA, publicly advocated a predictive model for its cost-effectiveness and flexibility. [redacted]

b) Complaint Counsel Have Failed to Prove That Refiners Would Have Advocated That CARB Negotiate License Terms

752. There is no evidence that the refiners would ever have advocated that CARB negotiate license terms, much less that CARB would ever have attempted such a negotiation.

753. In the ten years since Unocal's first patent issued, [redacted]

754. When asked in their depositions what they would have done had they learned of Unocal's patent before 1994, [redacted]

755. And when the refiners all learned of the patent in 1994, [redacted] Rather, once Unocal announced that it was putting together a licensing program, all the major refiners in California sued Unocal, declaring that the patent was invalid. *Union Oil Co. of Cal. v. Chevron USA, Inc.*, 34 F. Supp. 2d 1222, 1224 (C.D. Cal. 1998).

c) Complaint Counsel Have Failed to Prove That Refiners Would Have Modified Their Investment Strategies

i) Refiners Believed the Unocal Patent Was Invalid

756. The refiners have consistently testified that after learning that they believe the '393 patent is invalid and unenforceable.

757. [redacted]

758. [redacted]

759. All of the California refiners adopted the position that the '393 patent was invalid and/or unenforceable. [redacted]

760. [redacted]

[redacted]

761. [redacted]

[redacted]

ii) Refiners Would Not Have Had Enough Information Based on Disclosure of a Patent Application to Make Modifications

762. Even if Unocal had disclosed the existence of its patent application, refiners could not have done anything to change the configuration of their refineries with out knowing the specific claims of the patent.

763. [redacted]

[redacted]

[redacted]

764. Because refiners would not have known the scope of the claims as subsequently allowed or even the scope of the pending claims, refiners would not have done anything differently even if they had known of Unocal's pending patent application.

iii) There Is No Evidence That Refiners Would Have Changed Their Investment Strategies

765. After the refiners found out about the '393 patent, they took the position that it was invalid and unenforceable. *See* RPF 756-761. They continue to maintain that the remainder of the Unocal RFG patents are invalid and unenforceable.

766. Having concluded that the '393 patent was invalid, [redacted]

767. [redacted]

768. [redacted]

769. [redacted]

770. [redacted]

771. [redacted]

772. [redacted]

773. [redacted]

774. [redacted]

775. [redacted]

776. [redacted]

777. [redacted]

778. The refiners' conduct was based on their confidence in the invalidity of the patent.

779. The refiners' conduct was based also on the belief that any uncertainty created by the '393 patent would be mitigated in court by a successful legal challenge.

780.

781.

782. There is no evidence that the refiners' opinion of invalidity would have been different had the refiners completed their evaluations based on the patent application as opposed to the actual patent.

783.

784. [redacted]

785. Because a change in the timing of the refiners' evaluations of the '393 patent would not have affected their opinions of invalidity, there is no evidence that the refiners' investment strategies would have differed based on news of a patent application.

786. [redacted]

787. [redacted]

788. [redacted]

789. [redacted]

790. [redacted]

791. [redacted]

792. [redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]

793. [redacted]

794. [redacted]

795. [redacted]

[redacted]

796. [redacted]

797. [redacted]

798. [redacted]

799. [redacted]

800. [redacted]

iv) California Refiners Could Not [redacted]

801. Unocal's expert, Professor Griffin, explained there is [redacted]

802. [redacted]

V. NEITHER CARB NOR THE REFINERS ARE LOCKED-IN

A. Complaint Counsel Cannot Establish the Existence of Competitively Superior Options That Are No Longer Available to CARB and the Refiners

803. [redacted]

804. Complaint Counsel cannot demonstrate the existence of forgone options that are competitively superior to those that exist today.

1) Complaint Counsel Cannot Prove That CARB Would Have Adopted Regulations That Would Have Provided More Cost-Effective Emissions Abatement than the Current Regulations, Taking Unocal's Royalties into Account, and That It Cannot Adopt Such Regulations Today

805. Complaint Counsel disclaim the necessity of offering proof that CARB's or the refiners' options became "reduced or less attractive" as a result of Unocal's alleged fraud.

806. Professor Shapiro did not [redacted]

807. Unocal's economic experts did examine this question and offer unrebutted testimony that [redacted]

808. Options that do not exist today also did not exist at the time of the rulemaking; options that existed at the time of the rulemaking remain available today. This is fatal to the lock-in claim.

809. Professor Shapiro also did not [redacted]

810. When Professor Shapiro was asked [redacted]

[redacted]

811. [redacted]

812. Professor Shapiro did not [redacted]

813. Consumers would have been, and would remain today, considerably worse off if this path had been chosen by CARB.

814. As explained by William Pedersen, Unocal's expert on environmental enforcement, adoption of the Phase 2 regulations was essential in order to satisfy California's obligations under the State Implementation Plan (SIP) with which it was required to comply under the federal Clean Air Act. *See* Pedersen Rpt. *passim*; Pedersen Dep. (Expert), 10/15/03, at 88:17-89:22; *see* generally RPF 926-985.

815. CARB officials have also admitted the essentiality of the Phase 2 regulations to the SIP. *See, e.g.*, Kenny Dep. (CARB), 5/15/03, at 53:5-15 (Phase 2 regulations represented a "huge"

part of the SIP in terms of predicted emissions reductions, accounting for 300 tons of avoided emissions per day).

816. Absent compliance with the SIP, the EPA would have been required to impose on California a costly and burdensome Federal Implementation Plan (FIP), which then-Governor Pete Wilson had described as "irresponsible and devastating." RX 201 at 001; Pedersen Rpt. at 13-15.

817. A study by the California Governor's Office of Planning and Research determined that the FIP would have imposed costs of more than $24 billion on the Los Angeles area alone. RX 334 at 001; Griffin Rpt. at 28. The measure was projected to lead to the loss of 165,000 jobs and increase the unemployment rate by 0.5 to 1.7%. RX 334 at 001. In contrast, even if 100% of CARB summer-time RFG were to infringe Unocal's patents, royalties paid by the refiners statewide would be approximately $100 million. Griffin Rpt. at 28, n.62.

818. As Unocal's expert, Professor James Griffin, observed,

[redacted]

819. CARB's Final Statement of Reasons for the Phase 2 rulemaking dismissed as "not realistic" the proposal that the State simply adopt the EPA reformulated gasoline requirements. RX 10 at CARB0000363. CARB concluded:

> Implementation of only the federal gasoline standards would leave the state far short of obtaining the emissions reductions needed to meet the [sic] either the federal or state ambient air quality standards. The result would be a far greater likelihood of sanctions on transportation funds and new source growth, and an imposition of a greater burden onto other California industries to reduce emissions.

Id. at CARB0000449.

820. CARB's options today are neither [redacted] as compared to the so-called EPA option. The options have not been reduced because the EPA option could not realistically have been adopted by CARB. CARB's options have not been made less attractive because the EPA option would have imposed considerably greater costs on California consumers than the current regulations with Unocal's patents.

821. [redacted]

822. [redacted]

2) [redacted]

823. [redacted]

824. [redacted]

[redacted]

825. [redacted]

826. [redacted]

827. [redacted]

828. [redacted]

[redacted]

829. [redacted]

[redacted]

830. [redacted]

[redacted]

831. [redacted]

[redacted]

B. Complaint Counsel Cannot Establish a Lock-in Because There Is No Evidence of Switching Costs That Create a Lock-in

832. For lock-in to exist, switching costs must prevent the affected party from changing to another product or technology. *In re Rambus, Inc.*, No. 9302, slip op. at 326 (FTC February 23, 2004).

833. As Professor Shapiro observed in his book INFORMATION RULES, "[s]witching costs measure the extent of a customer's lock-in to a given supplier." CARL SHAPIRO AND HAL R. VARIAN, INFORMATION RULES 111 (1999); *see also id.* at 104 ("When the costs of switching from one brand of technology to another are substantial, users face lock-in.").

834. Complaint Counsel's economic expert, however, did not examine switching costs to support his lock-in analysis. [redacted]

835. [redacted]

836. The critical issue for purposes of lock-in is what switching costs must be incurred—what must be spent prospectively—to avoid the patent. *In re Rambus, Inc.*, No. 9302, slip op. at 327-28 (FTC Feb. 23, 2004).

837. If a regulatory change can take place, for example, at little or no cost, it is sensible to adopt regardless of what sunk costs were incurred.

838. Complaint Counsel failed to present any comparison of the costs associated with regulatory amendments to facilitate greater avoidance of Unocal's patents with the refiner benefits from such regulations.

839. Complaint Counsel failed to present any evidence that compares the cost of refinery modifications to avoid the patents within the current regulatory scheme to the refiner benefits from making such modifications.

840. Complaint Counsel cannot show that switching costs create a lock-in.

C. Complaint Counsel Cannot Establish Regulatory Lock-In Because CARB Never Tried to Assist Refiners in Avoiding Unocal's Patents

841. Complaint Counsel failed to establish the existence of a regulatory lock-in because there is no evidence that CARB ever seriously considered any regulatory options to facilitate patent avoidance even though such options existed.

842. The refiners did not consider themselves "locked-in" to the Phase 2 regulations, but rather presented to CARB a number of potential changes to the regulations that they claim would have provided them with additional flexibility to avoid Unocal's patents. [redacted]

843. Refiners took note of CARB's indifference to the Unocal patents in spite of their professed concern about the patents. [redacted] Accordingly, in spite of refiners' pleas to CARB to modify the regulations to ease the avoidance of Unocal's patents, and proposals for doing so without increasing pollution, CARB refused to amend its regulations in response to the patents. *See generally, e.g.*, RPF 572-581.

844. One reason that CARB refused to act is that it believed that the Unocal royalty was [redacted]

845. Even after the '393 trial, but before refiners exhausted all appeals, CARB did not consider the Unocal patent in its Phase 3 regulations because CARB viewed the '393 patent as being "still . . . in a state of flux" and "believed that there were concerns with the validity of the patent." Venturini Dep. (CARB), 5/14/03, at 402:25-403:15.

846. Even the denial of the refiners' motion for judgment as a matter of law following a jury verdict in favor of Unocal did not persuade CARB to take Unocal's patents seriously.

847. CARB's failure to act cannot be explained by an alleged inability to make regulatory changes by reason of a lock-in.

848. CARB did not seriously attempt to amend its regulations to ease patent avoidance. Complaint Counsel cannot present a single CARB witness to identify specific switching costs that prevent CARB from adopting alternative regulations.

D. The State of California's Adoption of the Sher Bill Fails to Establish Lock-in

849. Complaint Counsel argue that CARB could not change its regulations in a manner which would increase emissions because a California law (the Sher Bill) enacted in 1999 forbids CARB from doing so. *See, e.g.*, Complaint Counsel Proposed Pre-Trial Findings of Fact ¶ 211.

850. But by the time this legislation was enacted, the public (including, of course, the California legislature) was well aware that Unocal had been granted a number of patents, and that a jury and federal judge had already upheld the first patent as being valid and had awarded substantial infringement damages to Unocal.

851. California thus made a clear legislative choice to enact a law mandating that there be no change in emissions reductions regardless of whatever impact this might have on the royalties that might someday be paid by the refiners to Unocal.

852. Furthermore, well before the Sher Bill, CARB had determined that it did not want to change the regulations in a way that would in any way lessen the substantial emissions reductions achieved by Phase 2 gasoline. *See, e.g.*, RX 62 (memorandum from 1995 stating that rescinding the regulations "would result in California not achieving our clean air goals and cause renewed legal challenges from U.S. EPA for failing to abide by our State Implementation Plan"); [redacted]

VI. COMPLAINT COUNSEL CANNOT PROVE THAT UNOCAL HAS, OR IS DANGEROUSLY LIKELY TO ATTAIN MONOPOLY POWER

A. The Alleged Relevant Gasoline Market

1) The Alleged Market Is Not Relevant Because Unocal Is Not a Participant

853. Complaint Counsel have proposed a relevant market of "CARB-compliant 'summer-time' RFG produced and supplied for sale in California. The relevant geographic market is California." Complaint ¶ 75.

854. Unocal, however, is not a participant in the alleged market.

855. Unocal has not participated in the market since it sold its California refinery and marketing operations to Tosco in March 1997. Complaint ¶ 13.

856. Because it is not a participant, Unocal cannot have market power in the California gasoline market. Nor can it possess monopoly power or a "dangerous probability" of obtaining monopoly power in that market. Teece Rpt. ¶ 170. It is not a proper "relevant" market.

2) Unocal Does Not Have Monopoly Power in the Alleged Gasoline Market

857. Complaint Counsel failed to present evidence supporting the existence of any market power in the alleged gasoline market.

858. [redacted]

859. Unocal does not now have, and is not likely to attain in the future, monopoly power in the relevant gasoline market.

860. Even when Unocal was a participant in the California gasoline market many years ago, it had a relatively small share—an approximately 15 percent of the market. Teece Rpt. ¶ 172. This market share is too small for "monopoly power" or for showing a "dangerous probability of success" of achieving such power.

861. Unocal does not have market power (far less monopoly power) in the gasoline market, nor a "dangerous probability" of obtaining monopoly power, and could not given its exit from the market. [redacted]

B. The Alleged Relevant Technology Market

1) Complaint Counsel Cannot Prove That Unocal Has Monopoly Power or Has a Dangerous Probability of Achieving Such Power Even in the Technology Market Described by Their Expert

a) Complaint Counsel's Attempt to Prove Monopoly Power Based on an Assumption of Wrongful Conduct Fails

862. Complaint Counsel's showing of monopoly power is based on the claim that [redacted]

863. [redacted]

864. [redacted]

865. Professor Shapiro simply assumed that [redacted] There is no evidentiary support for the assumption on which this analysis is grounded.

866. [redacted]

(i) Complaint Counsel Cannot Establish [redacted]

867. Even if Unocal had promised to license its intellectual property for nothing, this fact does not prove that Unocal has the ability to charge a price above the competitive level.

868. [redacted]

869. [redacted]

870. [redacted]

871. [redacted]

872. These rates are [redacted]

(ii) Complaint Counsel Cannot Establish That Unocal Agreed to Give Away Its Intellectual Property on a Royalty-Free Basis

873. [redacted]

874. Professor Shapiro's determination [redacted]

875. Complaint Counsel cannot prove [redacted]

876. Unocal's August 27, 1991 letter to CARB says nothing about patents, inventions, or "technology." Instead, it refers expressly to a data base of emissions data on a computer disk that Unocal had previously provided to CARB on a confidential basis. RX 3.

877. The evidence in the record shows that by this letter, Unocal intended to lift the confidentiality of the data, so that CARB could incorporate the data on the disk into the larger data base it was developing to support a predictive model. RPF 286-293.

878. CARB's Rule 3.33(c) witness, Peter Venturini, testified that when he received Unocal's letter in 1991, it did not occur to him that the letter had anything to do with patent rights. RPF 300.

879. The claim that Unocal possesses monopoly power based on [redacted]

b) [redacted]

880. Complaint Counsel's experts rely on [redacted]

881. Professor Shapiro opines that [redacted]

882. Professor Shapiro used this [redacted]

883. The use of [redacted]

884. This method is not reliable because [redacted]

885. It is also unreliable because [redacted]

886. [redacted]

(i) Complaint Counsel Have No Evidence of Infringement

887. Unocal owns five patents related to reformulated gasoline. Complaint ¶ 15, Answer ¶ 15; Stellman Rpt. at 10.

888. Each of the patents claims certain gasoline compositions based on the numerical values of specific gasoline properties. Stellman Rpt. at 10.

889. The claims limitations in these patents, however, require more to prove infringement than simply matching numerical property limitations of specific patent claims.

890. Many claims require the use of particular processes or methods. Stellman Rpt. at 11.

891. Although each of Unocal's method and process claims is directed to a specific composition of gasoline, simply making, using or selling gasolines that meet the numerical property limitations of these claims does not constitute infringement. Stellman Rpt. at 11.

892. Unocal's "right to exclude" under the patents extends only to those compositions, methods, and processes that are proved to actually infringe.

893. Complaint Counsel have made no attempt to prove that any of the gasoline made or sold in California infringes Unocal's patents.

894. [redacted]

895. Mr. Eskew admitted [redacted]

896. Professor Shapiro relied [redacted]

897. Each of the witnesses representing the major California refiners was asked questions relating to the amount of gasoline produced by his company that infringes Unocal's patents; [redacted]

898. [redacted]

[redacted]

899. Professor Shapiro admitted [redacted]

900. Complaint Counsel argue [redacted]

901. [redacted]

902. [redacted]

903. [redacted]

904. [redacted]

905. [redacted]

(ii) Counsel's "Matching" Percent Is Meaningless [redacted]

906. [redacted]

907. [redacted]

908. [redacted]

909. It is an elementary economic principle that demand has an inverse relationship to price, and demand at a price of zero is not representative of what demand would be at a positive price.

910. In the case of Unocal's '393 patent, [redacted]

911. [redacted]

[redacted]

912. [redacted]

2) CARB Is Not "Locked In" to the Current CARB Regulations

913. Complaint Counsel claim that a "regulatory lock-in" reinforces Unocal's alleged monopoly power by preventing CARB from changing its regulations to enable refiners to avoid Unocal's patents. Recognizing that no meaningful monopoly power may exist if it may be defeated readily by a CARB regulatory change or by refiner actions, the Complaint alleges that CARB is locked into its regulations. Complaint ¶¶ 6, 94. [redacted]

914. Because Complaint Counsel cannot prove the existence of monopoly power even without reference to the lock-in issue, the existence of a lock-in ultimately irrelevant to the determination of monopoly power in this case.

915. The evidence, however, also demonstrates that there is no CARB lock-in.

916. There is no evidence that CARB is unable to change its regulations to allow refiners to avoid the numerical properties of Unocal's patents.

917. As discussed in RPF 572 through 584, CARB has never cared enough about Unocal's patents to take any actions to avoid them.

918. [redacted]

919. [redacted]

920. Because the evidence demonstrates that there is no CARB lock-in, [redacted]

VII. COMPLAINT COUNSEL HAVE FAILED TO PROVE ANY ANTICOMPETITIVE EFFECT OF UNOCAL'S ALLEGED MISREPRESENTATIONS

A. Complaint Counsel Have Not Offered Evidence of Their Alleged "But-for" Worlds with Regard to CARB Which Would Support a Finding of Harm to Competition

921. Complaint Counsel have asserted that "within the circumscribed bounds of its limited and delegated authority, CARB had available to it multiple alternatives to the CARB Phase 2 RFG regulations." Complaint Counsel's Response and Objections to Respondent's First Set of Interrogatories at 3.

922. Among the asserted alternatives are the following:

a. CARB could have incorporated information about Unocal's proprietary rights into its cost-effectiveness analysis, possibly to the point that the regulations would no longer be cost-effective. CARB could have then decided whether to postpone, delay or possibly reconsider its RFG regulations. Complaint Counsel's Response and Objections to Respondent's First Set of Interrogatories at 3-4.

b. CARB could have regulated gasoline composition, but without including T50. Complaint Counsel's Response and Objections to Respondent's First Set of Interrogatories at 4.

c. CARB could have adopted regulations with higher flat limits and caps for T50 and/or other parameters. Complaint Counsel's Response and Objections to Respondent's First Set of Interrogatories at 4. Potential modifications would have been to raise the T50 flat limit and/or raise the olefin flat and cap limit. In addition, given the relationship between T50 and T90, CARB may have also relaxed the caps and flat

limits for T90. Other parameters, such as sulfur, could have been more tightly regulated as well in order to achieve equivalent or similar emissions reductions. Complaint Counsel's Response and Objections To Respondent's Second Set of Interrogatories at 3.

d. CARB could have adopted regulations similar to those adopted by the U.S. EPA. Complaint Counsel's Response and Objections to Respondent's First Set of Interrogatories at 4.

e. CARB could have adopted similar regulations, but could have taken steps to reduce the impact of the patent. Complaint Counsel's Response and Objections to Respondent's First Set of Interrogatories at 7-8.

f. CARB would have modified the Reid Vapor Pressure parameters to allow refiners to increase these levels above 7.5 psi. Complaint Counsel's Response and Objections To Respondents' Second Set of Interrogatories at 3.

g. CARB would have adopted the same or similar regulations that it ended up adopting, if Unocal had dedicated its technology to the public as it stated in its August 27, 1991 letter. Complaint Counsel's Response and Objections To Respondents' Second Set of Interrogatories at 3.

923. Despite the various alternatives identified by Complaint Counsel, Peter Venturini, testifying on behalf of CARB, identified what he characterized as the sole alternative—no regulation. As stated by Mr. Venturini, "we can go through all sorts of if's and it's all speculation. The one thing that I can say on behalf of the Air Resources Board with great confidence is that if Unocal had

told us about the pending patent, there would not have been a regulation in 1991, and beyond that would be pure speculation on my part." Venturini Dep. (CARB), 5/14/03, at 520:3-19.

924. Finally, in addition to the "but-for" worlds alleged in their interrogatory responses and identified by Mr. Venturini, Complaint Counsel have also alleged that but-for Unocal's alleged misconduct, CARB would have remained "blissfully ignorant" of T50. Complaint Counsel's Opposition to Unocal's Motion to Compel Amended Interrogatory Responses at 2.

925. As discussed below, each of these but-for worlds is without support in the evidence.

1) Mr. Venturini's Testimony That There Would Have Been No Regulation Is Not Credible Given Then-Existing Regulatory Structure

a) CARB Did Not Have the Flexibility to Adopt RFG Regulations with Lower Emissions Reductions than Reflected in the Phase 2 Regulations

(i) The Federal Clean Air Act

926. As early as 1970, Congress passed the core provisions of the federal Clean Air Act ("CAA"). Since its adoption, the 1970 federal Clean Air Act has required the EPA to set "National Ambient Air Quality Standards" to specify maximum allowable levels of various air pollutants. Once the EPA sets standards for certain pollutants, then all states with pollution levels exceeding those requirements must adopt State Implementation Plans ("SIPs") on a prescribed schedule. Pedersen Rpt. at 5-6.

927. EPA first set national ambient air quality standards for ozone in 1972. Generally, ozone is created in the atmosphere through complex chemical reactions of volatile organic compounds ("VOCs"), or hydrocarbons, and nitrogen oxides ("NOx") in the presence of sunlight.

Gasoline creates VOC emissions both through evaporation and through combustion, and creates NOx emissions through combustion. Pedersen Rpt. at 5.

928. Ozone is the pollutant of the greatest concern in California. In fact, Los Angeles has traditionally had the country's worst ozone pollution problem. Pedersen Rpt. at 5.

929. 1977 Amendments to the federal Clean Air Act required states to file SIPs to provide for attaining the National Ambient Air Quality Standards not later than 1987. Pedersen Rpt. at 5-6.

930. If a state did not timely adopt an adequate SIP, the law required the EPA to promulgate and implement a Federal Implementation Plan ("FIP") to correct the deficiencies. Pedersen Rpt. at 6.

(ii) Interplay Between FIP and California's SIPS.

931. A portion of California's SIP, filed in 1982, for California's largest air quality management districts failed to provide for achieving or attaining the requisite EPA ozone levels by 1987. Pedersen Rpt. at 6-7.

932. The EPA was thus obligated to propose a FIP to attain the mandated ozone levels "as soon as possible," and a final FIP was to have been promulgated no later than February 1991. Pedersen Rpt. at 7, n.5; 9.

933. In September 1990, the EPA proposed a FIP for the South Coast Air Quality Management District of California. Pedersen Rpt. at 7.

934. Among other things, the proposed 1990 FIP would have required: (1) limits on the RVP of all summer gasoline; (2) unspecified limits on other gasoline composition; (3) greatly tightened emissions standards for new motor vehicles; and (4) "caps" on total emissions from various types of economic activities. Pedersen Rpt. at 7-8.

935. In November of 1990, Congress amended the Clean Air Act. Among the 1990 changes, the Clean Air Act divided areas that did not attain the required ozone standards ("nonattainment areas") into five classifications depending on their respective pollution level and set different attainment dates and SIP requirements for each. Pedersen Rpt. at 8-9; CAA §§ 181 and 182.

936. The five nonattainment area classifications ranged from Marginal, with an attainment deadline of 1993, to Moderate, Serious, and Severe, to Extreme with an attainment deadline of 2010. Pedersen Rpt. at 9.

937. Significantly, several of the cities in the California South Coast were either Serious or Severe. Pedersen Rpt. at 15-16.

938. The 1990 Clean Air Act Amendments required states to adopt new SIP provisions beginning in 1992 to achieve the National Ambient Air Quality Standards by these new deadlines. Pedersen Rpt. at 9.

939. Because of this new SIP requirement and new deadline(s), the EPA claimed it should not be required to (and thus did not) promulgate the South Coast FIP by the February 1991 deadline. Pedersen Rpt. at 9.

940. Ultimately, the courts rejected the EPA's argument and ordered the EPA to promulgate a FIP "unless the State corrects the deficiency . . . before the [EPA] promulgates such [FIP]." Pedersen Rpt. at 10; CAA § 110(c)(1) (quoted in *Coalition for Clear Air v. EPA*, 971 F.2d 219, 222-23 (9th Cir. 1994)).

(iii) Pressure in California to Adopt Regulations Governing Clean Air

941. Since the creation of ozone "non-attainment" classifications, California cities have been included in each of these classifications. Pedersen Rpt. at 15-16; The EPA's first notice on area classification, classified the South Coast of California as "Extreme" (the only "Extreme" area in the country), and several other areas as "Severe" and "Serious." Pedersen Rpt. at 15-16. In fact, California had cities in all these categories.

942. During the CARB Phase 2 RFG rulemakings, California was subject to several legal requirements imposed by the federal Clean Air Act. *See* Pedersen Rpt. at 16. For example, by the end of 1993, states were required to submit (for any areas classified as "Moderate" or above) a SIP revision to reduce VOC emissions by 15% between 1991 and 1996. *Id.*; CAA § 182 (b)(1)(A). Since the reduction was to be measured from 1990 levels, any post-1990 growth in emissions would have to have been offset before reductions would even begin to count against the 15%. Pedersen Rpt. at 16.

943. Additionally, by the end of 1994, states were required to submit (for any areas classified as "Serious" or above) a SIP revision to reduce emissions of VOC by an annual average of 3% from the end of 1996 until the attainment of the NAAQS. Pedersen Rpt. at 17.

944. Failure to promulgate an adequate SIP would have triggered immediate FIP promulgation. *See* Pedersen Rpt. at 19. In addition, three different types of consequences under the Clean Air Act would be triggered: (1) sanctions; (2) a continuing FIP obligation, and a (3) "bump up," which would tighten further the control requirements on those areas. (A "bump up" would move an area from less severe to more severe regulatory regimes). *Id.* at 19-21.

945. In California, the responsibility for developing a SIP is divided between CARB and local air districts. Pedersen Rpt. at 22.

946. The evidence shows that the requirements of the proposed FIP were wholly undesirable and unacceptable to California in a number of respects. Pedersen Rpt. at 39. For example, then-Governor Pete Wilson told CARB that the implementation of the FIP would be "irresponsible and devastating." RX 201. A study performed by the Governor's office called the FIP "infeasible and unaffordable" and found that it would cost the state at least $8.4 billion in direct costs, $17.2 billion in output and 165,000 jobs. RX 334 at 001. CARB staff member Dean Simeroth recalled that the FIP called for "highly unpopular measures that went way beyond any that had been in our consideration for both stationary, transportation, planning, and other categories...." Simeroth Dep. (CARB), 7/9/03, at 163:7-164:9. And CARB's Reza Mahdavi, who worked on the Governor's economic study, recalled that the FIP was twice as expensive as the SIP. Mahdavi Dep. (CARB), 7/25/03, 59:14-60:23.

947. In addition to creating concerns regarding promulgation of an adequate SIP, the 1990 amendments to the federal Clean Air Act also required the EPA to issue regulations for "reformulation" of gasoline. In general, the federal RFG program was to pre-empt all inconsistent state regulations. Because California was a pioneer in attempted control of automotive air pollution, however, the Clean Air Act allowed that state to have its own fuels regulations, so long as those regulations were more stringent than the federal minimum. Pedersen Rpt. at 37; CAA § 211(a)(4).

(iv) The Federal Clean Air Act Constraints Effectively Foreclosed CARB from Adopting Any RFG Regulations That Would Have Provided for Meaningfully less Substantial Air Quality Benefits than the Phase 2 RFG Regulations That It Actually Adopted

948. As more fully explained earlier in these Findings, the EPA was obligated to promulgate a FIP to reduce levels of harmful emissions. However, the imposition of the FIP was widely viewed as totally unacceptable in California due to the dire state of air pollution levels in that state. CARB could only avoid this undesirable, less-effective, FIP by submitting its own SIP in compliance with the Clean Air Act.

949. The SIP which California submitted (and the EPA approved) ultimately relied heavily on the Phase 2 RFG regulations. Even so, the emissions reductions in the 1994 SIP were barely adequate to support EPA approval. Pedersen Rpt. 4-5.

950. If California had adopted different regulations with meaningfully less substantial emissions abatement than those in the 1994 SIP (and the Phase 2 RFG rules), chances of EPA approval of that SIP would have been "significantly reduced." Pedersen Rpt. at 5.

951. Expert Pedersen explained that an EPA denial of approval of the SIP, would trigger the obligation to promulgate the unacceptable FIPs. Pedersen Rpt. at 5.

952. Expert Pedersen opined that "no responsible California official would have taken that risk." Pedersen Rpt. at 5.

953. Thus, the evidence shows that, while California could have theoretically reduced its SIP's reliance on Phase 2 RFG (through adopting other measures), no one has articulated what such other measures would have been or their costs, or how such other measures would have been equivalent to the benefits of Phase 2 RFG.

b) Given the Dire State of Air Pollution in California, CARB Was in No Position to Delay the Adoption of the 1991 Phase 2 Regulations

954. CARB operated under a legislative mandate that compelled it to enact rules for reducing emissions from mobile and vehicular sources no later than January 1, 1992. CAL. HEALTH AND SAFETY CODE § 43018(b); RX 189 (Resolution 91-54). CARB completed its Phase 2 RFG rulemaking on November 22, 1991, only 40 days ahead of the legislative deadline. RX 189 at CARB0000248.

955. Air quality in California in 1991 was in a dire state and cleaning up the air as quickly as possible was a priority. CARB's Phase 2 Statement of Reasons states that "California has the worst air pollution problem in the U.S." RX 10 at CARB0000449.

956. "During the first decade of the California Clean Air Act, we [CARB] understood that meeting the ambitious goal of achieving the State ozone standard required an all out effort." RX 336 at 018 (CARB 2001 Strategic Plan). CARB's "plans stressed adoption of all feasible control measures as quickly as possible." RX 336 at 018; Boyd Dep. (CARB), 8/22/03, at 265:12-266:8.

957. According to information on CARB's web site, a 1989 study funded by AQMD and conducted by Dr. Jane Hall of Cal State Fullerton found that 98% of the South Coast region's population of 13 million was exposed to unhealthful air, with children being especially vulnerable. It found that 1,600 people died prematurely as a result of exposure to air pollution, according to the study. *See* CARB, "Smog and Health," available at http://www.aqmd.gov/smog/inhealth.html#effect.

958. Other information on CARB's web site includes a study by Dr. David Abbey, which concluded that California residents living in areas that exceeded state and federal levels for suspended particulates on 42 days or more per year had higher risks of respiratory diseases, including

a 33% greater bronchitis risk and 74% greater asthma risk. In addition, women living in those high particulate areas had a 37% higher risk of developing some form of cancer. *See* CARB, "Smog and Health," available at http://www.aqmd.gov/smog/inhealth.html#effect.

959. Similarly, the October 1, 1989 Report to the California Legislature published by the AB 234 study panel (the California Advisory Board on Air Quality and Fuels), found that "Los Angeles has the worst air quality in the nation, exceeding air quality standards on two of every three days." RX 110 at CARB-FTC 00522237.

960. A 1996 CARB "Backgrounder Paper" entitled "Clean-Air Benefits" states that, although California has been the world leader in requiring stringent emission controls, "five of the seven cities in the United States with the worst air-quality problems are in California, and 90 percent of Californians still breathe polluted air." RX 202.

961. Even after making great strides to reduce air pollution between 1988 and 2000, CARB concluded that "California still has a long way to go to achieve its clean air goals" and that "nearly all Californians still breathe unhealthy air at times." RX 336 at 002. Even in 2001, CARB recognized the need for it to "[d]evelop and implement new strategies to effectively reduce air pollution." RX 336 at 003.

962. As of 2001, the South Coast Basin did not meet federal PM10 and ozone levels. RX 336 at 010. Parts of the South Coast Basin also exceeded federal carbon monoxide levels in 2001. *Id.*

963. The San Francisco Bay Areas did not meet the federal ozone levels in 2000. RX 336 at 009. Additional emission reductions are needed to attain federal standards by 2006. *Id.*

964. The San Joaquin Valley did not meet federal ozone standards in 1999, which was the deadline for attainment. RX 336 at 010 ("[S]ignificant new local, state, and federal measures" are required to achieve attainment.).

965. CARB's Board resolution enacting the Phase 2 regulations states:

> The state and federal health-based ambient air quality standards for ozone, CO, and PM10 are regularly and significantly exceeded in many areas of California, and the state and federal nitrogen dioxide (NO2) standards are exceeded in the South Coast Air Basin, and the state standards for sulfates are exceeded in the South Coast Air Basin.

RX 189 at CARB0000251.

966. CARB also found: "In several areas of the state it is likely that the state ozone and PM10 standards will not be achieved until some time after 2000." RX 189 at CARB0000251; *see also* RX 785 (American Lung Association Report giving most California counties a failing grade for clean air).

967. In conclusion, the CARB Board's resolution enacting the 1991 Phase 2 regulations stated that the regulations were essential:

> The emission reductions resulting from the Phase 2 reformulated gasoline regulations approved herein are a necessary component in the attainment of the state ozone, PM10, CO, NO2, and sulfate standards in the nonattainment areas of the state, and in the maintenance of the standards in the remainder of the state.

RX 189 at CARB0000251; CARB0000252 ("The [Phase 2] regulations approved herein are necessary and appropriate to attain and maintain the state and national ambient air quality standards identified above and to reduce exposure to toxic air contaminants.").

968. CARB's Board resolution for the Phase 2 regulations accurately captured the views of the Board members. Sharpless Dep. (CARB), 8/6/03, at 172:5-14.

969. In fact, in adopting the Phase 2 regulations, CARB believed that no other measure could provide the emissions benefits of Phase 2 RFG. RX 10 at CARB0000380; *see also* Boyd Dep. (CARB), 8/22/03, at 267:19-268:9.

970. CARB concluded in its Phase 2 rulemaking that "[i]n the early years of implementation, the Phase 2 RFG regulations will reduce motor vehicle emissions more than any measure recently adopted by the ARB." RX 10 at CARB0000361. Abandoning this measure would have required CARB quickly to find substitute sources for the greatest source of motor vehicle emission reductions.

971. CARB also stated that alternative emission reduction measures, such as enhanced inspection and maintenance programs and vehicle scrapping programs, should not be "viewed as alternatives to the need for Phase 2 RFG, since all measures are needed to address California's severe air pollution problem." RX 10 at CARB0000380; CARB0000389 ("In order to meet the state and federal ambient air quality standards, all feasible controls need to be adopted, including both Phase 2 RFG specifications and the low emissions vehicle program.").

972. CARB did not have alternatives to the Phase 2 regulations that would have enabled it to obtain equivalent emission reductions from other sources. At the November 21, 1991 CARB Board hearing, Chairwoman Sharpless stated that "it's not as though we're talking about, you know, having a lot of options out there that we can consider." RX 60 at CARB0001240.

973. In the Phase 2 rulemaking, CARB recognized the dire situation in California and the need for swift action. In the Phase 2 Final Statement of Reasons, CARB said that the "suggestion of adopting the Phase 1 federal reformulated gasoline requirements in lieu of the staff proposal is not realistic because the California Clean Air Act mandates very substantial reductions in ozone

forming compounds at the earliest practicable date. The emissions reductions resulting from federal reformulated gasoline do not achieve the same emission reductions as staff's proposals." RX 10 at CARB0000363.

974. CARB rejected proposals for delay in the completion of the Phase 2 rulemaking to permit the completion of cost studies. Boyd Dep. (CARB), 8/22/03, at 170:20-171:21.

975. Clean burning gasoline provides one-fourth of the emission reductions needed by California for its Clean Air Act State Implementation Plan. Boyd Dep. (CARB), 8/22/03, at 245:21-246:16. According to CARB's executive officer at the time of the Phase 2 rulemaking, "The gasoline is a critical portion of the total clean fuels/low-emission/zero-emission vehicle program that will allow we here in California to make progress towards cleaner air as provided under both federal and State law." Boyd Dep. (CARB), 8/22/03, at 246:17-25.

c) The "EPA Option" Was Not Available to CARB.

976. During the 1991 rulemaking, some participants in CARB's Phase 2 Rulemaking claimed that the Phase 1 Federal RFG regulations (EPA regulations) were sufficient to satisfy CARB's obligations to reduce emissions and that CARB, therefore, should not adopt its more stringent regulations. RX 10 at CARB0000447.

977. CARB considered and rejected the possibility of adopting the federal rules instead of the Phase 2 rules based on the insufficiency of the federal rules to achieve the necessary reduction in emissions. CARB concluded: "Implementation of only the federal gasoline standards would leave the state far short of obtaining the emissions reductions needed to meet either the federal or state ambient air quality standards. The result would be far greater likelihood of sanctions on

transportation funds and new source growth, and an imposition of a greater burden on California industries to reduce emissions." RX 10 at CARB0000449.

978. In response to one of the comments in the rulemaking, CARB stated: "The commenter's suggestion of adopting the Phase 1 federal reformulated gasoline requirements in lieu of the staff proposal is not realistic because the California Clean Air Act mandates very substantial reductions in ozone forming compounds at the earliest practical date. The emissions reductions resulting from the federal reformulated gasoline do not achieve the same emission reductions as the staff's proposal." RX 10 at CARB0000363.

979. The Initial Statement of Reasons for Rulemaking for the Phase 2 regulations rejects (at page 60) the alternative of adopting the EPA approach because "[t]he staff does not believe this approach will provide the most environmental benefit to California." RX 52 at 065; *see also id.* at 066-067 (comparing environmental benefits of Phase 2 regulations with EPA regulations); *cf.* RX 53 at 025 ("The USEPA's federal Phase I RFG regulations affect only four properties of gasoline and the benefits are significantly less than the benefits of the California Phase 2 RFG program. . . . The federal Phase II RFG requirements are implemented four years later than the California Phase 2 RFG regulations, thus foregoing significant benefits during these years.").

980. According to CARB staff, "The Phase 2 RFG regulations . . . are expected to bring about substantially greater emission reductions than the federal gasoline standards." RX 10 at CARB0000392; *see also id.* at CARB0000398.

981. Adoption by CARB of the less stringent EPA regulations would have necessitated more stringent controls of other emission sources in California. Venturini Dep. (CARB), 5/14/03, at 507:5-17; RX 10 at CARB 0000449. Abandonment of the Phase 2 RFG regulations in favor of

the EPA's RFG regulations would have required offsetting emissions abatement to come from sources over and above those proposed in SIP, *e.g.*, control measures such as those proposed in the FIP. Griffin Rpt. at 27.

982. The State of California generally viewed the control measures laid out in the FIP as potentially "calamitous" to the State of California. RX 334.

983. In a study by the California Governor's Office of Planning and Research, it was determined that the FIP threatened to impose costs of more than $24 billion on the Los Angeles area alone. RX 334.

984. After CARB learned of Unocal's patents in 1996, CARB reaffirmed the view that adoption of EPA-style regulations would have been insufficient to meet California's Clean Air Act requirements. RX 202 at 004. CARB's 1996 "Backgrounder Paper" entitled "Clean-Air Benefits" attributed 25% of the total ozone reductions expected from all new pollution control measures implemented in California in the next several years to be from reductions in ozone-forming emissions from the use of cleaner-burning gasoline. RX 202 at 0021 available at http://www.arb.ca.gov/fuels/gasoline/pub/cbgbkgr1.pdf. Although EPA reformulated gasoline reduces ozone-forming emissions by about 7%, "[t]his amounts to roughly half the clean-air benefits of California's cleaner-burning gasoline." RX 202 at 004.

985. The nature and the costs of achieving greater emissions abatement from other sources casts substantial doubt on the notion that EPA RFG would have been adopted by CARB in a "but-for" world. Griffin Rpt. at 28.

2) There Is No Evidence That CARB Would Have Regulated Gasoline Compositions Without Including T50 or That This Would Have Had a Material Effect on Competition

a) There Is No Evidence That CARB Would Have Remained Blissfully Ignorant of T50, Had Unocal Not Apprised CARB of It

986. The contention that CARB would not have adopted its T50 specification but-for Unocal's discussions with CARB, is disproved by evidence showing: (1) that others (not Unocal) lobbied for a T50 specification; (2) that CARB became intent on regulating T50 months before Unocal ever met with CARB; and (3) that CARB based its regulations primarily upon ARCO's EC-X fuel, not upon any information provided by Unocal.

987. Before Unocal even met with CARB on June 20, 1991, CARB had already heard from others of the significance of T50's effect on emissions including Toyota [redacted]

988. Thus, in January 1991, CARB told WSPA "it is critical for the purposes of the . . . regulation to have lower T50." RX 113.

989. [redacted] Fletcher Dep. (CARB), 7/8/03, at 162:1-163:6.

990. [redacted] *see also*

Boyd Dep. (CARB), 8/22/03, at 217:19-218:13 (testifying that CARB staff recognized and internally discussed ARCO's EC-X formulation as establishing a foundation for the Phase 2 regulations).

991. By the time Unocal finally met with CARB on June 20, 1991, CARB had already discussed T50 with [redacted]. And CARB had already determined, many months earlier, that T50 was "critical" for its Phase 2 regulations. RX 113.

992. Although CARB later publicly justified its T50 regulation upon Unocal's work (as well as the work of others) the evidence shows that CARB did not use Unocal's data in the development of its T50 specification. CARB first prepared draft regulations containing a T50 specification on July 21, 1991. *See* RX 198 at CARB-FTC 0030878 (190° F) and RX 184 at CARB 10003057 (200° F). CARB staff did not receive the disk containing data from Unocal's studies some time after July 25, 1991. RX 327; *see also* RX 121 (Letter from W. Thomas Jennings to Bethany D. Krueger, dated 8/4/03).

993. Moreover, Unocal did not make this data base public until August 27, 1991. RX 3. Simeroth testified that absent a right to use the data publicly, CARB would not have based a regulation on that data or otherwise relied upon it. Simeroth Dep. (CARB), 7/9/03, at 145:25-148:8. Three weeks before CARB had permission to make public use of any of Unocal's research data, CARB published a draft of its proposed regulation that specified a T50 value of 200° F. RX 184 at CARB 10003057. [redacted]

994. Even after CARB received permission to use Unocal's data base, there is no evidence that CARB ever used it to develop its T50 specification. RPF 374-389. [redacted]

995. In November 1991, CARB adopted final regulations that were substantially similar to the properties of ARCO's EC-X gasoline. RX 330 at CARB-FTC 0049739; Boyd Dep. (CARB), 8/22/03, at 241:24-243:13. Not surprisingly, the refining industry reported that CARB had embraced ARCO's EC-X formulation. RX 504. [redacted]

996. In contrast to ARCO, Unocal had lobbied against the proposed regulations and for a pure predictive model. RPF 341-353.

997. Unocal's expert Professor Griffin has determined based on many of these facts that CARB had revealed a preference for regulation T50 that was not dependent on Unocal's data. Griffin Rpt. at 31.

998. Complaint Counsel have presented no evidence that CARB would have remained blissfully ignorant of T50 had Unocal not apprised CARB of it.

999. Nor have Complaint Counsel shown the extent to which CARB's blissful ignorance of the effect of T50 on emissions would have produced a competitively superior outcome. *See, e.g.*, Griffin Rpt. at 33 [redacted]

[redacted]

[redacted]

b) There Is No Evidence That CARB Would Have Drafted Regulations Which Omitted T50

1000. There is no evidence that CARB would have carved the 1991 regulations around the claims of the Unocal patent, including the claims related to T50. Mr. Venturini, who was testifying on behalf of CARB, could not answer whether CARB would have tried to carve around potential claims of Unocal's patent had it known about the patent application in 1991. Instead, Venturini could only say this would be speculative. Venturini Dep. (CARB), 5/14/03, at 531:16-535:2.

1001. Complaint Counsel have presented no witnesses or testimony showing that CARB would have adopted regulations without regulating T50. As shown by Professor Griffin, CARB's revealed preferences demonstrate that this would not have happened. Griffin Rpt. at 33.

1002. Despite being aware no later than January 1995 that Unocal had patent claims related to T50, CARB elected to maintain the Phase 2 regulations that regulate T50 levels (in the form of caps, averaging limits, and flat limits). Griffin Rpt. at 31.

1003. CARB also continued using the predictive model with its relatively high coefficients for T50 in the predictive model despite awareness of the '393 Patent claims. Griffin Rpt. at 31-32.

1004. [redacted]

[redacted]

[redacted]

1005. In adopting the Phase 3 RFG regulations, CARB elected to continue to regulate T50. Furthermore, although it considered further raising the caps on T50, which it could have done without increasing emissions at all, CARB elected not to do so. RX 64 at 021; Griffin Rpt. at 32.

1006. The inference from the revealed preference analysis is that CARB believed that regulating T50 was preferable to lifting the T50 regulation even with knowledge of Unocal's patent claims regarding T50. Griffin Rpt. at 32.

1007. Additionally, Complaint Counsel have presented no evidence that adopting such regulations without the T50 caps would have been feasible given the requirements of the California and federal Clean Air Acts.

1008. Complaint Counsel have presented no evidence regarding the extent to which the adoption of regulations without a T50 specification would have prevented refiners from infringing the Unocal patent.

1009. Nor have Complaint Counsel shown the extent to which adoption of regulations without T50 would have produced a competitively superior outcome. *See, e.g.*, Griffin Rpt. at 33

[redacted]

3) There Is No Evidence That CARB Would Have Adopted Regulations with Higher Flat Limits and Caps for T50 and/or Other Parameters or That This Would Have Had a Material Effect on Competition

1010. Complaint Counsel hypothesize several alternative "but-for" worlds that involve potential alternative regulations that would have, Complaint Counsel assert, enabled refiners to avoid the Unocal patents. Complaint Counsel's Response and Objections to Respondent's First Set of

Interrogatories at 4; Complaint Counsel's Response and Objections to Respondent's Second Set of Interrogatories at 3; RPF 922 (c) & (g).

1011. There is no evidence that CARB would have carved the 1991 regulations around the claims of the Unocal patent, including the adoption of regulations with higher flat limits and caps for T50 and/or other parameters.

1012. Mr. Venturini, who was testifying on behalf of CARB, could not answer whether CARB would have tried to carve around potential claims of Unocal's patent had it known about the patent application in 1991. Instead, Venturini could only say this would be speculative. Venturini Dep. (CARB), 5/14/03, at 531:16-535:2.

1013. As a practical matter, Complaint Counsel have not shown how CARB could feasibly have designed around Unocal's patent claims without knowing the specifics of these claims. In a "but-for" world in which CARB does not possess perfect foresight of the patents that ultimately issued, CARB would not have known to adopt the design-around regulations proposed by Complaint Counsel. Griffin Rpt. at 35.

1014. Complaint Counsel have presented no witnesses or testimony showing that CARB would have adopted regulations with higher flat limits and caps for T50 and/or other parameters, or would have modified the RVP parameters to allow refiners to increase these levels above 7.5 psi.

1015. Professor Griffin's revealed preferences analysis shows that CARB would not have adopted alternative design-around regulations had it known of the Unocal patents. Griffin Rpt. at 36.

1016. [redacted]

1017. [redacted]

1018. [redacted]

1019. CARB has furthermore stated that the royalty of Unocal was [redacted]

1020. Complaint Counsel have presented no evidence that adopting regulations such regulations with higher flat limits and caps for T50 and/or other parameters would have been feasible given the requirements of the California and federal Clean Air Acts.

1021. Complaint Counsel have presented no evidence regarding the extent to which the adoption of regulations with higher flat limits and caps for T50 and/or other parameters would have prevented refiners from infringing the Unocal patents.

1022. Nor have Complaint Counsel shown the extent to which the adoption of regulations with higher flat limits and caps for T50 and/or other parameters would have produced a competitively superior outcome.

1023. [redacted]

1024. [redacted]

4) There Is No Evidence That Adding the Costs of Unocal's Patents Would Have Altered CARB'S Cost-Effectiveness Analysis to the Point That the Regulations Would No Longer Be Cost-Effective

1025. Complaint Counsel have failed to present sufficient evidence that adding the costs of Unocal's patents would have altered CARB's cost-effectiveness analysis to the point that the regulations would no longer be cost-effective.

1026. As discussed previously in findings 402, 418-430, CARB's cost-effectiveness analysis was not the sole nor dominant criterion of CARB's Phase 2 regulations. RX 195 at CARB-FTC 0039609. Cost-effectiveness was only one of the factors required to be considered. CAL. HEALTH & SAFETY CODE § 43018(a). "There [was] no requirement that control measures should be adopted in the precise order of their respective cost-effectiveness." RX 10 at CARB 0000379; RX 195 at CARB-FTC 0039621.

1027. The evidence shows that CARB did not place a high level of importance on the cost-effectiveness analysis. As previously explained in findings 431-455, CARB conducted only a minimal and last-minute analysis. CARB additionally rejected efforts to conduct an incremental analysis. *See* RPF 488-495. Complaint Counsel has failed to prove that CARB would have done anything differently with respect to the mechanism of its cost-effectiveness analysis had it know of the Unocal patent.

1028. CARB would not have changed its analysis of cost-effectiveness had it known of Unocal's pending patent application. CARB did not ask Phase 2 participants about patents or patent applications, nor did it inquire about potential revenues. *See* RPF 589-605, 412, 443. After the '393 Patent issued, CARB staff members did not believe that gasoline formulations could be patented. *See, e.g.*, Boyd Dep. (CARB), 8/22/03, at 198:2-199:4; [redacted] Given CARB's behavior, it is not believable that CARB would have altered its cost-effectiveness analysis if they had been informed of Unocal's pending patent application.

1029. Even if CARB would have considered Unocal's pending patent application, this would not have altered CARB's cost-effectiveness analysis to the point where the Phase 2 regulations would have no longer been cost-effective. To the contrary, as discussed previously in Findings 496-506, CARB would have still found the regulations to be cost-effective.

1030. Further, as discussed in Findings 926-985, even if cost-effectiveness analysis would have altered CARB's decisionmaking, CARB did not have the flexibility to adopt no regulations as they now contend.

5) There Is No Evidence That CARB Could Have Adopted Similar Regulations, but Could Have Taken Steps to Reduce the Impact of the Patent

1031. There is no evidence that CARB would have taken steps to reduce the impact of the patent had Unocal informed CARB of its pending patent application. Venturini Dep. (CARB), 5/14/03, at 520:13-19. Instead, Mr. Venturini testified "with great confidence" that if Unocal had told CARB about the pending patent, "there would not have been a regulation in 1991." Anything further, including whether CARB would have taken steps to reduce the impact of the patent "would be pure speculation." *Id.*

1032. Complaint Counsel have presented no witnesses or testimony supporting this "but-for" world.

1033. Nor have Complaint Counsel shown the extent to which the existence of this "but-for" world would have produced a competitively superior outcome.

6) There Is No Evidence to Support Complaint Counsel's Theory That Unocal Dedicated Its Technology to the Public

1034. [redacted]

[redacted]

1035. [redacted]

1036. [redacted]

1037. [redacted]

1038. Professor Shapiro's entire testimony rests on an assumption [redacted]

1039. The assumption that [redacted]

1040. In his Report, Rebuttal Report, and at his deposition, [redacted]

[redacted]

1041. As discussed above in findings 294 through 301, there is no support in the evidence for the proposition that Unocal dedicated its technology to the public [redacted]

1042. [redacted]

B. Complaint Counsel Have Not Offered Evidence of Their Alleged "But-For" Worlds with Regard to WSPA and Auto/Oil Which Would Support a Finding of Harm to Competition

1) Complaint Counsel's "But-For" Worlds

1043. Complaint Counsel have alleged only in the most general of terms that Unocal's conduct with respect to WSPA and Auto/Oil, as distinct from its conduct with respect to CARB, caused anticompetitive effects. Complaint ¶¶ 57, 90. These "but-for" worlds are identical to and form the basis for Complaint Counsel's allegations of reliance.

1044. In paragraph 90 of the Complaint, Complaint Counsel alleges the following three alternatives or "but-for" worlds that could have occurred absent the complained-of conduct:

a. WSPA and Auto/Oil participants could have advocated that CARB adopt regulations that minimized or avoided infringement on Unocal's patent claims. Complaint ¶ 90.

b. WSPA and Auto/Oil participants could have advocated that CARB negotiate license terms substantially different from those that Unocal was later able to obtain. Complaint ¶ 90.

c. WSPA and Auto/Oil participants could have incorporated knowledge of Unocal's pending patent rights into their capital investment and refinery reconfiguration decisions to avoid potential infringement. Complaint ¶ 90.

1045. As discussed below, each of these "but-for" worlds is without support in the evidence.

2) There Is No Evidence That Differences in Lobbying of CARB Would Produce a Competitively Superior Outcome

1046. As demonstrated in findings 746-751, there is no evidence that WSPA or Auto/Oil participants would have lobbied CARB differently.

1047. Regardless of any change in lobbying strategy, CARB's 3.33(c) designee testified that if CARB had known that Unocal had a pending patent application, there would have been no Phase 2 regulations. Venturini Dep. (CARB), 5/14/03, 510:6-17, 520:13-19.

1048. Thus, Complaint Counsel have failed to show the extent to which this "but-for" world would have produced a competitively superior outcome.

3) There Is No Evidence That Lobbying of CARB to Negotiate License Terms Would Produce a Competitively Superior Outcome

1049. As demonstrated in findings 752-755, there is no evidence that WSPA or Auto/Oil participants would have lobbied CARB that CARB negotiate license terms, much less that CARB would ever have attempted such a negotiation.

1050. Regardless of any lobbying for the negotiation of license terms, CARB's 3.33(c) designee testified that if CARB had known that Unocal had a pending patent application, there would have been no Phase 2 regulations. Venturini Dep. (CARB), 5/14/03, 510:6-17.

1051. Thus, Complaint Counsel have failed to show the extent to which this "but-for" world would have produced a competitively superior outcome.

4) There Is No Evidence That, But For the Alleged Fraud, the Refiners Would Have Invested in Refinery Configurations That Would Have Produced an Outcome That Is Competitively Superior

a) There Is No Evidence That Changes in Investment Strategies Would Have Produced a Competitively Superior Outcome

1052. Complaint Counsel have failed to prove that but-for the alleged fraud, the refiners would have changed their investment strategies. RPF 756-802.

1053. Furthermore, [redacted]

1054. [redacted]

1055. [redacted]

1056. [redacted]

1057. Complaint Counsel have not shown the extent to which the existence of this "but-for" world would have produced a competitively superior outcome.

b) [redacted]

1058. [redacted]

1059. [redacted]

1060. Thus, Complaint Counsel have not shown the extent to which the existence of this "but-for" world would have produced a competitively superior outcome.

VIII. UNOCAL WAS JUSTIFIED IN NOT DISCLOSING ITS PENDING PATENT APPLICATION

A. The Inherent Uncertainty of Patent Applications

1061. The uncontroverted testimony of Unocal's expert, Dr. Nancy Linck, establishes the numerous uncertainties inherent in the patent prosecution process. Linck Rpt. at 4-7.

1062. First, even if a patent application is pending, "it is very difficult to predict when, or even if, a patent will ever be issued from that application." Linck Rpt. at 5.

1063. Second, it is also uncertain what the scope of the claims will be. Although a patent application is filed with an original set of claims, the vast majority of applications are amended, often narrowing the scope of a claim, before they ever reach their final form. Linck Rpt. at 5.

1064. Third, it is even possible that what is considered to be the basic claim may change in view of prior art that either the Patent Trademark Office (PTO) or the applicant discovers. Linck Rpt. at 6.

1065. Fourth, even after initial allowance of some of the claims, uncertainty remains. Dr. Linck testified of instances when an examiner may change his or her mind and withdraw the allowance. Linck Rpt. at 6.

1066. Even after a patent issues, uncertainty can remain, through processes such as reissuance or reexamination. Claims can even be disclaimed after issuance. This change actually occurred with respect to the '393 patent, where many of the claims were disclaimed after issuance after Unocal worked with outside counsel for several months. Linck Dep. (Expert),10/11/03, at 22:2-22; *see also* Linck Rpt. at 6.

1067. Finally, the meaning of patent terms and scope of patent claims are often hotly debated in litigation, injecting additional and ongoing uncertainty into the process until the patent claims are construed by the court in light of the patent specification, prosecution history and prior art. Linck Rpt. at 7. This, too, occurred with the '393 patent, where the litigating Refiners asserted that the claim language encompassed any hydrocarbon composition with the numerical characteristics capable of running an automobile engine. The court construed the claims more

narrowly in light of the specification and prosecution history, limiting the claims to motor gasoline. The Federal Circuit affirmed the narrower claim construction. Linck Rpt. at 7.

1068. The uncertainty of litigation continues throughout the appellate process, especially since a substantial number of cases appealed to the Federal Circuit are reversed for a variety of reasons. Linck Rpt. at 7.

1069. Accordingly, given these uncertainties, notifying a competitor or regulatory agency of the existence of a patent application provides very little guidance as to what a patent ultimately will cover.

B. The Importance of Maintaining the Confidentiality of Patent Applications During the Patent Application Process

1070. It was Unocal's policy to keep its patent application(s) confidential. Beach IH Dep. (Unocal), 1/23/02, at 54:8-13, 59:16-22; Jessup IH Dep. (Unocal), 1/25/02, at 150:3-14; Wirzbicki IH Dep. (Unocal), 8/7/02, at 209:1-210:19. This is a common policy in many companies and was common in the industry at the time. [redacted]

1071. Expert Linck explained numerous reasons why the existence of a patent application is typically kept in confidence during its pendency. Linck Rpt. at 7-10.

1072. As recognized by CARB itself, Unocal had a right under patent law to keep its application in confidence. RX 203 at CARB-FTC 0037559; Linck Rpt. at 7-8; 35 U.S.C. § 122(a).

1073. One primary reason for confidentiality is to allow the applicant to retain the trade secret value of the invention if for some reason the invention is determined not to be patentable. Linck Rpt. at 9.

1074. Another reason for maintaining confidentiality is due to the problems that disclosure can cause in light of the securities laws. Publicly disclosing that one has a patent application could lead to an allegations that the public and/or investors were led to attribute or interpret the patent application as an indication of value to the company at a time when the company has not made such a determination or when the company feels it is too speculative to even engage in an attempt to value the potential patent. Linck Rpt. at 9.

1075. Disclosing the existence of the patent application less than "publicly" outside the company may lead to issues with securities laws. A confidential policy regarding patent applications lessens the risk that a company will be accused of misleading investors or other securities violations. Linck Rpt. at 9.

1076. Other business reasons for a policy of maintaining confidentiality include avoiding the potential for provoking an interference with the application. Linck Rpt. at 8.

1077. According to the testimony of Ms. Linck, that "premature disclosure of the existence of a patent application is almost certain to be to the commercial disadvantage of the applicant in that it could disclose potential legitimate trade secrets, might spawn potential litigation . . . at a time when the scope of patent coverage is highly uncertain." Linck Rpt. at 9.

C. Unocal's Patent Application of 1990 Went Through Numerous Changes Before It Issued as the '393 Patent in 1994, and Subsequently as Other Patents

1078. Unocal's patent application had not even been pending for a year when CARB adopted the Phase 2 regulations. RX 852 at UFTC 004615-773 (Unocal's patent application). In fact, on November 13, 1991, just a week before the CARB meeting, the patent office examiner issued a rejection of all pending claims in the application. RX 852 at UFTC 004810.

1079. Throughout the course of the patent prosecution process, Unocal's claims were amended and narrowed several times.

1080. Ultimately, on February 22, 1994, after several amendments, the application issued as United States Patent No. 5,288,393 ('393). This was two years after the passage of Phase 2 regulations in 1991. Linck Rpt. at 10.

1081. As noted elsewhere in these findings, a disclaimer was filed after issuance, reducing the number of claims in the patent from the 221 original claims to the 41 claims that remain today.

D. Unocal's Patents Were Diligently Prosecuted

1082. Unocal's patent was pending for only three years and two months. According to Expert Linck, this is a relatively short time period particularly for a chemical case. Linck Rpt. at 10.

1083. The prosecuting patent attorney, Gregory Wirzbicki timely responded to each PTO Office Action. He requested only two extensions to respond to such actions. RX 852 at UFTC 004873, 004962; Linck Rpt. at 11.

1084. Several other facts from the '393 file history evidence Mr. Wirzbicki's interest in furthering the progress of the application. For example, rather than wait for a rejection, Mr. Wirzbicki would amend claims to try and resolve potential issues of dispute with the examiner. This

occurred with respect to the disclosure by Mr. Wirzbicki of compositions contained in a data base. Mr. Wirzbicki had argued to the examiner that the data base was not invalidating prior art for various reasons. RX 852 at UFTC 004660-70. The examiner did not see to agree with Mr. Wirzbicki but did not issue a rejection on the data base. RX 852 at UFTC 004809-13. Mr. Wirzbicki chose to voluntarily amend the claims by carving around the compositions of the gasolines disclosed in the data base so as to simplify issues. RX 852 at UFTC 004864-65.

1085. The unrebutted testimony of Expert Linck establishes that the '393 patent was not stalled, but rather was diligently prosecuted by Mr. Wirzbicki. Linck Rpt. at 11.

E. Unocal's Disclosure of Research Data and Equations to CARB, and to the Industry, Did Not Affect the Validity of Its Patent Rights

1086. Unocal confidentially disclosed to CARB its research information, which included information about its experimental design, the fuels it used in some of its tests to measure emissions, the emissions data that it measured and recorded from the tests, and the equations developed from the ten-car emissions tests. RX 24.

1087. Only the raw emissions data from the ten-car emissions tests was referred to as "non-proprietary" in Unocal's letter of August 27, 1991, to CARB. RX 3.

1088. Unocal did not disclose to CARB the coefficients that it used in its one-car equations, nor did it disclose its claims for novel, unique compositions of cleaner-burning compositions of gasoline in its patents or the claimed methods or processes of using certain compositions to reduce automotive emissions. Croudace IH Dep. (Unocal), 2/21/02, at 243:8-244:11; Jessup IH Dep. (Unocal), 1/25/02, at 110:4-111:6.

1089. In its presentation to Auto/Oil, Unocal did not disclose the one-car equations or the claims for the novel, unique compositions of cleaner-burning gasoline in its patents or the claimed methods or processes of using certain compositions to reduce automobile emissions.

1090. Unocal later published a technical paper for the SAE in which it disclosed the one-car, ten-car, and other research it had conducted, including the one-car and ten-car equations. RX 771.

1091. According to Expert Linck, it is not unusual for researchers publicly to disclose their research in public forums or in literature without any indication as to whether a patent application is pending. Linck Rpt. at 10; [redacted]

1092. Once a patent application is on file, as was the case with Unocal here, such publication had no effect on patentability. Linck Rpt. at 10.

IX. UNOCAL'S CONDUCT IS IMMUNE FROM ANTITRUST SCRUTINY UNDER *NOERR-PENNINGTON*

A. The Context of the Proceeding—the Political and Quasi-legislative Nature of CARB's Proposed Rulemaking

1) Expectations of Truthful Representation

1093. As discussed at RPF 172-175, the CARB Phase 2 RFG rulemaking proceeding had two phases. The first phase took place prior to the issuance of the formal notice of proposed rulemaking on October 4, 1991. *See* RX 66 at CARB 0000536. (Notice of Public Hearing). The second phase commenced with publication of a Notice of Public Hearing.

a) The "Political" Aspect of the Rulemaking

1094. In the Notice of Public Hearing through which it commenced the Phase 2 rulemaking, CARB stated that "[t]he public hearing will be conducted in accordance with the California Administrative Procedure Act, Title 2, Division 3, Part 1, Chapter 3.5 (commencing with section 11340) of the Government Code." RX 66 at CARB0000545. The procedures in Chapter 3.5 of the Government Code are applicable "to the exercise of any quasi-legislative power" by CARB. CAL. GOV'T CODE § 11346 (1991).

1095. The Phase 2 RFG rulemaking was a "quasi-legislative" proceeding under California law. Kenny Dep. (CARB), 5/15/03, at 23:9-24:10. Quasi-legislative has a specific meaning under California law.

1096. According to the California Supreme Court, agencies acting through quasi-legislative rulemaking are engaged in "an authentic form of substantive lawmaking." *Yamaha Corp. v. State Bd. of Equalization*, 960 P.2d 1031, 1036 (Cal. 1998). "Because agencies granted such substantive rulemaking power are truly 'making law,' their quasi-legislative rules have the dignity of statutes." *Id.*

1097. CARB was consistently "on its guard" in its dealings with private parties throughout the Phase 2 RFG rulemaking. CARB Chairwoman Jananne Sharpless testified that companies that petition CARB "are not always forthcoming with all information" and that companies selectively choose the information to be disclosed to CARB because they are "looking very well after their own self-interest." Sharpless Dep. (CARB), 8/6/03, at 167:13-22.

1098. CARB Executive Officer James Boyd testified that CARB did not credit industry estimates of the likely cost of the Phase 2 RFG regulations, believing that "industry always had a

high estimate" of costs and that regulations "never cost[ ] as much as industry said it would." Boyd Dep. (CARB), 8/22/03, at 60:12-62:3.

1099. It was generally understood that any individual company might have differing views about proposed regulations based upon their business interests. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 114:22-115:4.

1100. Industry representatives involved in the Phase 2 RFG rulemaking were open about the political nature of the process. [redacted]

1101. As CARB refined its plans for the Phase 2 RFG regulatory proposal in September 1991, [redacted]

1102. [redacted]

[redacted]

1103. Following the initiation of CARB's rulemaking, political lobbying efforts intensified in an attempt to counter ARCO's extensive lobbying in favor of regulations that favored its commercial interests. [redacted]

1104. The memorandum addressed the prospect that [redacted]

1105. Another memorandum drafted by [redacted]

1106. Following the adoption of the Phase 2 regulations, major oil companies explicitly framed CARB's decision as a politically influenced outcome. [redacted]

[redacted]

1107. [redacted]

1108. The conclusion that the steamrolling effect of ARCO's political strength had defeated sound science was echoed by [redacted]

1109. A memorandum prepared by [redacted]

1110. The political nature of the CARB rulemaking process is further demonstrated by former Unocal employee, Mike Kulakowski, who was involved in the CARB regulatory process. [redacted]

1111. While at Unocal (and subsequent to the initial Phase 2 regulations), Mr. Kulakowski advocated for CARB to adopt the EPA model. Kulakowski Dep. (Unocal/Texaco), 6/26/03, 180:4-181:11. [redacted]

1112. [redacted]

b) CARB Phase 2 Procedures Were Not Designed to Insure That Interested Parties Provided Complete and Accurate Information

1113. None of the participants in the Phase 2 RFG rulemaking was required to submit any information to CARB.

1114. CARB collected only that information that was voluntarily disclosed to the agency. For example, although CARB sought cost information from refiners that participated in its Phase 2 RFG rulemaking, only six out of thirty California refineries purported to provide cost information, and at most two or three purported to provide the information requested by CARB. Simeroth Dep. (CARB) 7/9/03, at 234:23-235:12; Aguila Dep. (CARB), 7/24/03, at 203:20-206:9.

1115. CARB did not require parties presenting information to testify under oath, or to provide any other form of certification of accuracy regarding the information being provided. Kenny Dep. (CARB), 5/15/03, at 88:15-21; Venturini Dep. (CARB), 5/14/03, at 292:6-18. In contrast, legislative bodies frequently require testimony at committee hearings to be made under oath. For example, California legislative committees have the power to compel oral testimony to be submitted under oath. CAL. GOV'T CODE § 9404.

1116. CARB did not utilize adversarial fact-finding procedures in its Phase 2 RFG rulemaking, such as the right of interested persons to cross-examine witnesses or submit rebuttal comments.

1117. CARB has the authority to conduct adjudicative hearings under CAL. HEALTH & SAFETY CODE § 42316(b). CARB has exercised its authority under this provision on one occasion, in which it adjudicated a dispute between the City of Los Angeles and the Great Basin Unified Air Pollution District over fees and particulate matter control measures imposed on the City by the District. RX 70. In explaining the legal background of that adjudicative proceeding to the Board, CARB's General Counsel contrasted CARB's ordinary rulemaking procedures with its adjudication of disputes as follows:

> Typically, the Board makes policy decisions in adopting regulations; this is called quasi-legislative process because it is similar to the process used by the Legislature in adopting laws.
>
> At today's hearing the Board will be exercising quasi-judicial authority, and that is deciding a dispute between two parties.

Id. at 012.

1118. At that hearing, CARB's General Counsel gave the further instruction that, because of the quasi-judicial nature of the proceeding, "ARB staff has been very careful not to have any substantive communications with the Board, and as you know, that's necessary to preserve your impartiality as decision-makers today." RX 70 at 012.

1119. By contrast, CARB did not use any evidentiary procedures in eliciting comments on the Phase 2 rules and did not ask participants in the process to provide information under oath or otherwise attest to the accuracy of the information provided. CARB also did not restrict any substantive communications between any rulemaking participant on the one hand and CARB's board or its staff on the other.

1120. There are no *ex parte* rules that apply to CARB's board members during the pre-notice period. Kenny Dep. (CARB), 5/15/03, at 89:12-90:17. Following the commencement of the rulemaking, CARB board members may conduct *ex parte* contacts but are required to identify them. *Id.*

1121. There are no *ex parte* prohibitions applicable to CARB staff in connection with the conduct of rulemakings. Kenny Dep. (CARB), 5/15/03, at 90:10-91:11. CARB encourages its staff to conduct *ex parte* contacts with third parties. *Id.* Prior to 1994, CARB had no procedure for creating any record memorializing the existence on an *ex parte* contact. *Id.* at 92:4-93:2.

1122. At all times relevant to CARB's Phase 2 rulemaking, CARB had no written procedures governing the accuracy of communications made to CARB or its staff during the rulemaking process. Kenny Dep. (CARB), 5/15/03, at 96:1-98:21.

1123. At the time of the Phase 2 rulemaking, California law placed minimal constraints on the conduct of notice-and-comment rulemakings, such as CARB's Phase 2 rulemaking. California

Administrative Procedure Act required CARB to issue a notice of proposed adoption of the rule, CAL. GOV'T CODE § 11346.4 (1991), an initial statement of reasons, § 11346.5, a final statement of reasons for the rule, § 11346.7, and to maintain public file of the rulemaking, § 11347.3. The Act also provided for the "orderly review of adopted regulations" by an Office of Administrative Law, in which that Office may not "substitute its judgment for that of the rulemaking agency as expressed in the substantive content of the adopted regulations." *Id.* § 11349.1. The Act does not specify any type of evidentiary process for collecting information to inform CARB's judgment.

1124. Because Unocal's alleged "misrepresentations" to CARB were made prior to the commencement of the Phase 2 rulemaking, even the minimal procedural constraints that California law placed on the rulemaking were not applicable to the interactions between CARB regulators and the regulated.

1125. Unocal's Dennis Lamb sent CARB the letter in which Unocal designated certain research data as nonproprietary on August 27, 1991. RX 3. This was several weeks before CARB initiated the Phase 2 RFG rulemaking on October 4, 1991. RX 66.

1126. CARB's General Counsel testified that "[t]he rulemaking process begins with the release of the notice." Kenny Dep. (CARB), 5/15/03, at 66:22-68:15; *see also* CAL. GOV'T CODE §11346.4 (1991). The pre-notice process, including Unocal's communications with CARB, "is not part of the rulemaking record." Kenny Dep. (CARB), 5/15/03, at 71:8-18. The requirements of the California APA thus were not applicable to and did not inform any of CARB's dealings with Unocal (or anyone else) prior to CARB's initiation of the rulemaking on October 4, 1991.

1127. CARB could have adopted procedures that it deemed necessary to improve the factual accuracy of information submitted to it. However, it had no written procedures governing the accuracy of information submitted to it.

1128. Agencies engaged in administrative rulemaking, like CARB, frequently choose to forego rules to safeguard the accuracy of information in favor of encouraging maximum communication and interaction between the agency and interested outside parties. Gellhorn Dep. (Expert), 10/18/03, at 50:16-55:2.

c) CARB Knew That Information It Received Was Likely to Be Biased

1129. CARB recognized that selective disclosure of information, one-sided presentation and political lobbying were part of the Phase 2 RFG rulemaking process. CARB Chairwoman Jananne Sharpless testified that companies that petition CARB "are not always forthcoming with all information," would not share with CARB information "they did not want [CARB] to have," would provide CARB only "with information that best represents their interests," and selectively disclosed information to CARB because they are "looking very well after their own self-interest." Sharpless Dep. (CARB), 8/6/03, at 167:13-25.

1130. CARB Executive Officer James Boyd testified that CARB did not credit industry estimates of the likely cost of the Phase 2 RFG regulations, that "industry always had a high estimate" of costs and that regulations "never cost[] as much as industry said it would." Boyd Dep. (CARB), 8/22/03, at 60:6-62:3.

1131. CARB's fears of selective disclosure were well-founded. [redacted]

[redacted] Aguila Dep (CARB), 7/24/03, at 233:19-234:12. At the CARB Board hearing at which the Phase 2 regulations were adopted, ARCO's representative George Babikian testified that Phase 2 reformulated gasoline "should be somewhere around 16 cents a gallon." RX 60 at CARB0001191. [redacted]

2) The Degree of CARB's Discretion—CARB Had Substantial Policy Discretion with Respect to the Substantive Content of the Phase 2 RFG Regulations

1132. The 1988 California Clean Air Act, CAL. HEALTH SAFETY CODE § 43018(a), requires CARB "to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources . . . at the earliest possible date." The focus on "maximum" emissions reduction at the "earliest possible" date reflected California's immediate and pressing emissions and air quality problem, RX 10 at CARB0000449; Boyd Dep. (CARB), 8/22/03, at 265:12-266:8, and the primary mandate of the Act.

1133. CARB operated under a statutory mandate to enact, not later than January 1, 1992, Phase 2 RFG regulations for reducing emissions from mobile and vehicular sources, including "[s]pecification[s] of vehicular fuel composition." CAL. HEALTH & SAFETY CODE § 43018(a)(c). California law directed CARB to "take whatever actions are necessary, cost-effective and technologically feasible in order to achieve" by December 31, 2000, various percentage reductions in specific emissions. *Id.* § 43018(b). None of these terms was defined by the legislature. The law also instructed CARB to achieve the "maximum degree of emission reduction possible" as soon as possible. *Id.* § 43018(a).

1134. The statutory mandate to adopt cost-effective measures inherently conflicts with the mandate to achieve the "maximum degree of emission reduction possible." California law did not provide CARB with any specific guidance on how the directive to achieve the "maximum degree of emission reduction possible" should be balanced against the contradictory policy goal of adopting measures that are "cost-effective" and "necessary." Instead, the California delegated to CARB's independent judgment the discretion to define and balance these competing mandates based on its own policy judgment.

1135. CARB's General Counsel conceded that "CARB has broad policy discretion in the context of air quality improvement" and that the breadth of CARB's discretion has been recognized by California courts. Kenny Dep. (CARB), 5/15/03, at 149:5-150:1.

1136. The extent of CARB's discretion is evident from the options under consideration by CARB prior to enacting the Phase 2 RFG regulations. One option was whether to phase out gasoline altogether in favor of methanol-based fuels. *E.g.*, Jessup IH Dep. (Unocal), 1/25/02, at 8:21-9:13; Boyd Dep (CARB), 8/22/03, at 104:18-106:2. The discretion to decide whether to ban gasoline altogether is a major policy choice. Another example of CARB's broad discretion as to the approach to Phase 2 RFG rules is its consideration of a vehicle scrappage program, advocated by Unocal and other refiners as a means of removing high-polluting cars from the road. CARB's Chairwoman Sharpless testified that such programs raise important "social equity issues" for CARB to consider in its decisionmaking. Sharpless Dep. (CARB), 8/6/03, at 101:15-102:2.

1137. The Final Statement of Reasons issued by CARB staff in connection with the Phase 2 RFG regulations further illustrates the substantial breadth of CARB's discretion. Among the controversial issues in the rulemaking was whether small refiners should receive differential

treatment under the regulations. Large refiners argued that CARB "lack[ed] the statutory authority to adopt the small refiner exemption." RX 10 at CARB0000462. CARB's response to this criticism emphasized the breadth of discretion granted to the agency by the legislature:

> The statutes do not mandate what specific fuel characteristics must be controlled, how stringent those controls should be, what the compliance dates should be, to whom the controls should apply, whether the limits should be statewide or limited to areas with substantial air pollution problems, whether the limits should apply year-round or only during the seasons with bad air quality, whether all batches of fuel should be subject to the same limit or an "averaging" program of some sort should be instituted, how the controls should be enforced, and whether there should be provisions granting temporary "variances" based on unforeseen unique events. The ARB does not need explicit statutory authority to implement any of these approaches.

RX 10 at CARB0000468.

1138. CARB also has substantial discretion in determining whether a Phase 2 rule is cost-effective. "[C]ost-effectiveness is just one of several criteria that must be considered." RX 195 at CARB-FTC 0039620. It is only one and not an outcome determining factor CARB was required to take into account in promulgating Phase 2 regulations. The "Cost-Effectiveness Guidance" document, promulgated by CARB under the California Clean Air Act, makes clear that:

> [w]hile cost-effectiveness is given great emphasis in the California Clean Air Act, it is neither the sole nor the dominant criterion for decisionmaking. The primary mandate is to achieve the state air quality standards by the earliest practicable date.

RX 195 at CARB-FTC 0039609.

1139. Cost-effectiveness is a "relative concept," which embodies considerable discretion on CARB's part. Under CARB's guidelines, it is appropriate to "adopt measures that are less cost-effective on a dollars per ton basis if the potential emissions reductions are greater." RX 195 at CARB-FTC 0039620. There is no requirement "that control measures be adopted in the precise order of their respective cost-effectiveness . . . ." RX 10 at CARB0000379; RX 195 at CARB-FTC

0039621. Even if a measure is highly cost-effective, it may be "unacceptable to the public" (*e.g.*, "no drive days" or "high rise developments" to limit driving) and hence rejected in the exercise of CARB's discretion. RX 195 at CARB-FTC 0039620.

3) The Extent of CARB's Reliance on Unocal's Factual Assertions—CARB Did Not Seek or Consider Information about Patents or Patent Applications in Promulgating Phase 2 RFG Regulations

1140. The nature of the CARB Phase 2 rulemaking is substantially different from proceedings in which it can clearly be determined that the government necessarily relied on outcome determinative factual assertions made by petitioner. Significantly, the official rulemaking record does not contain any statement that even hints that CARB relied upon Unocal's alleged misrepresentations.

1141. There is no written embodiment of the reasons why CARB's board members exercised their broad discretion to promulgate the Phase 2 RFG regulations, which makes it impossible to show that the agency relied on Unocal's alleged factual assertions. To the extent that evidence of CARB's reliance exists, all of which resides outside the rulemaking record, it strongly shows that Unocal's alleged factual misrepresentations were not relied upon by CARB.

1142. In the Phase 2 RFG rulemaking, CARB was not collecting information from Unocal or other refiners that was required to be furnished pursuant to existing law or regulations. Rather, CARB was actively seeking information and ideas about what future regulations should be. *See, e.g.*, Fletcher Dep. (CARB), 7/8/03, at 179:1-6 (CARB staff had "an open offer" to any company to meet with CARB).

1143. Unocal was not required as part of the Phase 2 RFG rulemaking to provide any specific information to CARB.

1144. CARB also had no predetermined formula into which private parties' data submissions were fed to determine the governmental action, and its role in the rulemaking cannot possibly be described as ministerial. The agency enjoyed exceptionally broad discretion and sought information and ideas from different stakeholders in an effort to find an effective and politically acceptable means of controlling pollution. *See, e.g.*, Fletcher Dep. (CARB), 7/8/03, at 179:1-6; Kenny Dep. (CARB), 5/15/03, at 90:10-91:11.

1145. The problem is compounded by the inherently uncertain nature of the information alleged to have been withheld from CARB. All that could have been known at the time of CARB's board hearing on the regulations, which took place on November 21 and 22, 1991, was that the patent examiner had denied all of Unocal's patent claims one week earlier. RX 852 at UFTC 004810.

1146. The Commission's opinion highlights the importance of the "specific information allegedly misrepresented." *In re Union Oil Co. of Cal.*, No. 9305, slip. op. at 41 (FTC July 7, 2004). This factor is relevant here, as the evidence shows that CARB (i) never inquired about patent rights of Unocal or anyone else (let alone patent applications) (*see* RPF 589-605), (ii) did not understand Unocal's August 1991 letter to refer to patent rights (*see* RPF 294-301), and (iii) did not take Unocal's patent into account in its regulatory process even after Unocal won an infringement judgment because, according to the agency's Rule 3.33(c) testimony, CARB believed the patent to be "still in a state of flux" during the pendency of an appeal of that judgment. Venturini Dep. (CARB), 5/14/03, at 402:25-403:19; *see generally* RPF 552-574.

1147. The fact that CARB has never requested rulemaking participants to disclose patents or patent applications and did not consider patent rights in promulgating its regulations strongly

evidences that CARB did not rely on the absence of a Unocal patent application relevant to its regulations. In fact, CARB's Rule 3.33(c) witness testified that at the time that CARB received the August 1991 letter that is the linchpin of Complaint Counsel's misrepresentation case, the thought did not occur to CARB that it had anything to do with patent rights. Venturini Dep. (CARB), 5/13/03, at 69:7-22; *see also* Simeroth Dep. (CARB), 7/9/03, at 123:6-124:7. CARB could not have acted in reliance on any Unocal misrepresentation about which it did not even think.

4) The Ability to Determine the Effect of the Misrepresentation—There Is No Ability to Establish Causation Between Unocal's Alleged Misrepresentations and Promulgation of the Phase 2 RFG Regulations

1148. The Phase 2 RFG regulations were adopted pursuant to a vote of the nine CARB board members following a public hearing on November 22, 1991.

1149. The transcript of the public hearing does not include an explanation by any board member of the reason for his or her vote. RX 60.

1150. The CARB board members did not prepare any kind of written opinion explaining individual votes following the adoption of the Phase 2 RFG regulations.

1151. The Final Statement of Reasons for Rulemaking prepared by CARB staff about a year after the Board's vote, does not provide a means to establish reliance. It contains no indication of any reliance on the supposed Unocal misrepresentations at issue here; it does not refer to intellectual property rights or their absence.

1152. To the extent that the Final Statement provides any basis for determining causation, it shows that Unocal opposed the regulation adopted by CARB and advocated the adoption of a different regulatory approach. Unocal specifically opposed the regulation of T50. RX 10 at

CARB0000315. It also argued more broadly that "no further action" by CARB was required to attain the goals of the California Clean Air Act. RX 10 at CARB0000322.

1153. The CARB board members did not have input in the preparation of the Final Statement of Reasons, which is never presented to the Board for review or approval. Boyd Dep. (CARB), 8/22/03, at 120:3-6.

B. The Nature of the Relevant Communications

1) The Alleged Misrepresentations Are Not Deliberate, Knowing and Willful

a) There Is No Evidentiary Basis to Conclude That Unocal Willfully and Deliberately Attempted to Mislead CARB

(i) The Undisputed Evidence That Unocal Opposed a T50 Specification in the Phase 2 Regulations Clearly Demonstrates That It Was Not Willfully, Knowingly, and Deliberately Seeking to Mislead CARB

1154. Unocal consistently opposed Phase 2 regulations containing gasoline property specifications, including a T50 specification, before and after they were adopted and lobbied for an alternative predictive model that would have made it easier for refiners to avoiding infringing the Unocal patents that ultimately issued.

1155. During Phase 2 regulatory process, Unocal opposed any emissions regulations, arguing instead that a program to remove higher polluting vehicles from California roadways would be less expensive and more effective in controlling emissions. Beach IH Dep. (Unocal), 1/23/02, at 41:4-43:2.

1156. Unocal in particular sought to avoid a regulation with a specific oxygenate requirement, which would have forced it to blend gasoline with the oxygenate MTBE. Stegemeier

Dep. (Unocal), 6/5/02, at 43:1-7; RX 765; *see also* RPF 189-192 (discussing Unocal's opposition to MTBE).

1157. Knowing this, Unocal sought to preserve its regulatory flexibility by advocating the adoption of a pure predictive model that would look at the emission-reducing performance of gasoline instead of prescribing its components. *See, e.g.*, RPF 195-203 (discussing Unocal's predictive model advocacy).

1158. Unocal believed that such an approach would allow it to formulate low-emission gasoline that did not contain oxygenates. Lamb IH Dep. (Unocal), 1/16/02, at 27:16-30:2, 39:2-44:1; Beach IH Dep. (Unocal), 1/23/02, at 41:4-43:2, 62:6-63:22; Beach Dep. (Unocal), at 23:3-25:4; CX 240.

1159. At the November 1991 hearing at which CARB adopted the Phase 2 regulations, Unocal publicly opposed the adoption of regulations containing rigid specifications for gasoline properties, including T50. *See, e.g.*, RX 10 at CARB0000299-300, 308-09, 315, 338-41; *see also* Sharpless 1996 Dep. (CARB), 6/20/96, 42:24-45:3 (recalling Unocal's strong opposition to the Phase 2 regulations).

1160. Unocal argued instead for a more flexible regulatory approach employing a predictive model that did not prescribe limits for specific properties such as T50. As CARB's Final Statement of Reasons for the Rulemaking states, Unocal argued: "we don't see the specification for T50 as necessary." RX 10 at CARB0000315 (cmt. 63); *see generally* RPF 341-353 (detailing Unocal's support for a predictive model).

1161. [redacted]

1162. After CARB adopted its Phase 2 regulations, Unocal continued to advocate against their implementation. *See* RPF 367-370 (describing Unocal's continued requests for delay). As CARB's Dean Simeroth testified, Unocal's "whole action through this time period was that they did not like the RFG2 regulations." Simeroth Dep. (CARB), 7/9/03, at 158:8-159:10.

1163. Unocal also continued to advocate for a pure predictive model approach, even after the '393 patent issued. RX 159 at WSPA_FTC0014911, 14946. [redacted]

1164. The fact that for several years Unocal consistently advocated positions with respect to the content of Phase 2 regulations that would have minimized its ability to exploit its pending patents is persuasive evidence that Unocal did not willfully, knowingly, and deliberately seek to mislead CARB.

(ii) The Context in Which Unocal Used the Term "Non-Proprietary" Provides Strong Evidence of the Absence of Willful, Knowing and Deliberate Misrepresentation

1165. There is no evidence that Unocal's use of the term "non-proprietary" was a "willful," "knowing," and "deliberate" attempt to mislead CARB about Unocal's patent application.

1166. The context in which Unocal's communication occurred demonstrates a lack of intent to mislead. The communication occurred in the aftermath of a meeting on June 20, 1991, during

which Unocal disclosed to CARB on a confidential basis some of the results of its research about fuel properties and their predictive effect on lower emissions.

1167. Pursuant to CARB's request, following that meeting Unocal provided the equations it had developed based on a ten-car test. RX 2. Unocal asked CARB to treat this information as "confidential." *Id.*; *see also* Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 26:8-28:7. In the same communication, Unocal also stated that it would consider making the equations public if CARB were to pursue a meaningful dialogue on a predictive model approach to Phase 2 gasoline. RX 2.

1168. CARB staff subsequently expressed an interest in a predictive model approach and sought to use Unocal's data for that purpose. Venturini Dep. (CARB), 5/13/03, at 49:21-52:2; Lamb IH Dep. (Unocal), 1/16/02, at 136:5-137:10.

1169. Thereafter, on or about July 25, 1991, Unocal sent to CARB a disk containing raw emissions data from its ten-car test for CARB to use in the development of a predictive model. Venturini Dep. (CARB), 5/13/03, at 49:21-52:2; RX 327.

1170. CARB understood that the emissions data on this disk was to be treated as confidential. Simeroth Dep. (CARB), 7/9/03, at 115:3-10.

1171. CARB then requested that Unocal remove the confidential designation of the data but not of the equations or slides that Unocal had presented at the June meeting. Simeroth Dep. (CARB), 7/9/03, at 122:24-125:17. Without the right to use Unocal's data publicly, CARB had no ability to use or rely on the data. Simeroth Dep. (CARB), 7/9/03, at 124:12-125:18; Boyd Dep. (CARB), 8/22/03, at 146:19-147:10.

1172. On August 27, 1991, Dennis Lamb of Unocal sent a letter directed to CARB's Executive Officer, James Boyd, responding to CARB's request. RX 3. The subject line of Mr. Lamb's letter stated "PUBLIC AVAILABILITY OF UNOCAL RESEARCH DATA." RX 3.

1173. Everything that Unocal stated in this letter was and remains absolutely true. Nothing in the letter represents that Unocal did not have any patent applications or, that it would never seek license revenues from any patents that it might receive some day.

1174. The context in which CARB requested Unocal's letter and in which Unocal supplied it confirms that the term "non-proprietary" was simply intended as a synonym for "non-confidential" and that it was meant to apply solely to Unocal's ten-car test data. *See* RPF 302-316.

1175. Unocal's contemporaneous internal documents reflect Unocal's intent to simply make the data non-confidential. *See* RPF 287-293.

1176. The context of the August 27 letter, the letter's text, Unocal's contemporaneous explanation of the letter, CARB's understanding of the letter, and the industry use of the term "proprietary" suggest that Unocal's use of "non-proprietary" was not intended to convey anything other than Unocal was treating specific data that it had supplied to CARB on a disk on July 25, 1991, as non-confidential.

(iii) A Willingness to Make Proprietary Data Public Does Not Imply That No Pending Patent Application Exists

1177. As previously stated at finding 282, there is a difference between data, equations derived from an analysis of the data, and inventions derived from data and equations. Venturini Dep. (CARB), 5/13/03, at 31:25-32:24; Lamb IH Dep. (Unocal), 1/16/02, at 143:21-145:5; Linck Rpt. at 4. Data and equations in themselves cannot be patented. Lamb IH Dep. (Unocal), 1/16/02, at

143:21-145:5; Linck Rpt. at 4. The August 27, 1991 letter refers only to Unocal "data" as being made "non-proprietary." RX 3; Lamb IH Dep. (Unocal), 1/16/03, at 136-5, 139:4, 142:1-143:18. Mr. Lamb of Unocal did not have corporate authority to relinquish Unocal's intellectual property rights. Miller Dep. (Unocal), 6/25/03, at 48:4-49:13, 197:10-15.

1178. Public disclosure of patent or research results is frequently made after a patent application has been filed without any indication that a patent has been applied for on inventions relating to such research. Linck Rpt. at 10.

1179. For example, [redacted]

1180. Likewise, [redacted]

b) The Alleged Misrepresentations That a Predictive Model Would Be "Flexible" and "Cost-Effective" Were Not "Willful," "Knowing," and "Deliberate"

1181. CARB has previously recognized the political nature of statements about the cost-effectiveness of a regulation. In its Final Statement of Reasons for its Phase 3 RFG rulemaking—conducted pursuant to the same statutes Phase 2—CARB states, the economic

feasibility of regulations "is more of a policy or political question than a scientific one." RX 64 at 009 (internal page 6).

1182. Unocal's statements regarding cost-effectiveness and flexibility of a predictive model were true and correct. Unocal argued that a "pure predictive model" was more "flexible" and "cost-effective" than the gasoline property specification approach CARB adopted on November 22, 1991.

1183. The "pure predictive model" with no caps on specific fuel properties that Unocal championed was different from the predictive model with caps that CARB enacted in June 1994; [redacted]

1184. The predictive model proposed by Unocal was a pure performance-based rule, which would not have mandated specific levels for particular fuel properties. This is precisely how the refining industry saw the matter as well. [redacted]

1185. There is no real dispute that both predictive models were more flexible and cost-effective than CARB's original specification-based approach. CARB and others in the refining industry shared Unocal's opinion that a predictive model would be cost-effective and flexible. *See, e.g.*, RX 54 at 007, 022 (CARB analysis stating that the purpose of the regulatory amendments incorporating the predictive model was "to provide additional flexibility to gasoline producers" and concluding that "the California Predictive Model will reduce production costs and minimize the potential for supply disruptions."); RX 53 at 053 ("The proposed predictive model is expected to lower producers' and gasoline suppliers' costs to comply with the Phase 2 RFG regulations."); Boyd

Dep. (CARB), 8/22/03, at 177:15-179:4, 221:12-22 (predictive model provided cost savings and flexibility to refiners); [redacted]

1186. [redacted]

1187. Mike Kulakowski of Texaco told CARB, even after he became aware of the issuance of the Unocal patent that CARB's predictive model was cost-effective. Kulakowski Dep. (Unocal/Texaco), 6/26/03, at 169:3-19. He was not trying to mislead CARB in making that statement, believed it to be true then and still believes it to be true at present. *Id.*

1188. CARB concluded that a predictive model was necessarily superior to fuel specifications because [redacted] Virtually all California refiners have elected to use the predictive models, which demonstrates the superior flexibility and cost-effectiveness of the predictive model. *See, e.g.*, Cleary Dep. (CARB), 8/7/03, at 192:21-93:1.

1189. Because Unocal used "cost-effective" and "flexible" in a comparative context, there is no basis to find that Unocal's alleged failure to disclose its patent application was false and misleading, much less that it was knowing, deliberate and willful.

2) The Alleged Misrepresentations Do Not Involve "Sharply Defined Facts" and Are Not "Clear and Apparent"

1190. Unocal's August 27, 1991 letter, which Complaint Counsel claims gives rise to the alleged misrepresentation, refers to a specific, tangible item—a computer disk containing data from one of Unocal's emissions projects which Unocal had previously given to CARB. RX 3.

1191. As discussed in findings 282 through 285, Unocal's statements in this letter were true.

1192. As discussed in findings 302 through 316, the parties understood the use of the term "non-proprietary" to mean non-confidential.

1193. Additionally, in order to infer fraud would require an interpretation of the words "data" and "data base" (which the letter says was provided to CARB subsequent to the June 20 meeting) to mean any and all of Unocal's inventions relating to its emissions research—inventions which were never disclosed to or even ever discussed with CARB.

1194. Thus, Unocal's statement in its August 27 letter was not a "clear and apparent" fraud with respect to a "clear and sharply defined fact" as required by the Commission's opinion. *In re Union Oil Co. of Cal.*, No. 9305, slip. op. at 36 (FTC July 7, 2004).

1195. As discussed in RPF 1181 through 1189, Unocal used the "cost-effectiveness" and "flexibility" in a comparative context. As well as being true, Unocal's statements about the comparative cost-effectiveness and flexibility of a pure predictive model are opinions or arguments. They are not misstatements regarding "particular and sharply defined facts," as the Commission's opinion requires. *In re Union Oil Co. of Cal.*, No. 9305, slip. op. at 36 (FTC July 7, 2004).

3) The Alleged Misrepresentation Were Not Central to the Legitimacy of the Phase 2 Regulations

a) Cost-Effectiveness Was Not a Critical Determinate of CARB's Phase 2 Regulations

1196. The Complaint alleges only that Unocal's purported misrepresentation affected CARB's assessment of "cost-effectiveness."

1197. As discussed in RPF 418 through 430, cost-effectiveness is only one, and not an outcome-determinative, factor that CARB was required to consider in promulgating Phase 2 regulations.

1198. CARB may reject cost-effective means of reducing emissions based on essentially political considerations. Thus, even highly cost-effective measures, such as no-drive days, may be "unacceptable to the public" and rejected on that basis. RX 195 at CARB-FTC 0039620.

1199. There is no basis for concluding that, contrary to both CARB's guidelines and the Final Statement of Reasons for the Phase 2 rulemaking, CARB elevated cost-effectiveness above all other considerations in its rulemaking.

1200. The relative lack of importance assigned to cost-effectiveness in the Phase 2 rulemaking process is demonstrated by the manner in which CARB conducted its cost-effectiveness analysis. *See* RPF 431-455 (describing the manner in which CARB conducted its analysis including CARB's lack of attention to the process).

1201. In fact, CARB ended up relying on limited investment and operating cost data from only two out of the thirty refineries for its cost data. Simeroth Dep. (CARB), 7/9/03, at 234:23-236:1; Aguila Dep. (CARB), 7/24/03, at 160:13-165:10, 176:8-177:7, 203:20-206:9.

1202. CARB also rejected proposals by various refiners to conduct an incremental analysis of the cost-effectiveness of individual parameter of its fuel regulation, such as an analysis focused on the incremental cost and benefit of a T50 specification. RX 10 at CARB0000362; [redacted]; *see also* RX 60 at CARB0001097 (Fletcher) and CARB0001309 (Sharpless).

1203. CARB did not treat the issue of cost-effectiveness with any seriousness of purpose or rigor.

b) CARB Would Not Have Changed Its Analysis of Cost-Effectiveness Had It Known of Unocal's Pending Patent Application

1204. Unless disclosure of the Unocal patent application would have materially changed CARB's assessment of cost-effectiveness, the failure to disclose the pending patent would have not been material or affected the substantive provisions of the Phase 2 regulations.

1205. As discussed in findings 589 through 605 CARB has never sought information regarding patents or patent applications from any rulemaking participant in its Phase 2 RFG rulemaking nor in any other rulemaking before or since.

1206. Even if it had considered Unocal's pending patent application in determining cost-effectiveness, there is no basis for concluding that CARB would have changed its assessment of cost-effectiveness. *See* RPF 431-506.

c) CARB Would Have Regulated T50 Regardless of Unocal's Submissions Because Doing So Was Critical to Attaining Necessary Emission Reductions

1207. CARB's primary mandate in promulgating Phase 2 regulations was to maximize emissions reductions. If CARB believed that setting a T50 parameter was critical to emission

reduction, it is unlikely that it would have removed or significantly altered the T50 specification in the face of a pending patent application the likelihood of issuance of which was highly uncertain.

1208. To the extent that Complaint Counsel are contending that CARB would not have adopted its T50 specification but for Unocal's alleged misrepresentation to CARB that it had no patent rights, the evidence refutes this contention. *See* RPF 986-1009 (discussing substantial evidence demonstrating that such a "but-for" world would not have occurred).

d) CARB Had No Viable Alterative to the Phase 2 Gasoline Regulations That Would Have Resulted in Lower Infringement Rates

1209. CARB's basis for rejecting any alternatives to Phase 2 demonstrates the paucity of practical alternatives available.

1210. The Technical Support Document prepared by CARB staff for the Phase 2 RFG rulemaking set out the alternatives that CARB had the legal authority to implement and explained the basis for their rejection. RX 5 at CARB0000868-69; *see also* RX 60 at CARB0001240 (Chairwoman Sharpless recognizing the limited options available to CARB as a practical matter).

1211. CARB rejected the concept of tighter regulations on vehicles because of the time it would take to develop such technology and the fact that it would take approximately ten years to replace enough older vehicles before such regulations would attain their full impact. RX 5 at CARB0000868-69.

1212. CARB rejected the concept of requiring fuels other than gasoline because existing vehicles use gasoline because "such a specification could not be wisely done on the basis of only emissions." RX 5 at CARB0000868-69. Further, because existing cars use gasoline, such a regulation would not produce any significant effect until well after 2000.

1213. CARB rejected the concept of adopting an emission standard based on toxics because such a regulation would take at least ten years to reach full effect. RX 5 at CARB0000868-69. CARB also rejected scrapping older, more heavily polluting vehicles, as publicly unacceptable. RX 195 at CARB-FTC 0039620; *see also* RX 10 at CARB 0000380.

1214. There is no evidence suggesting that any of the foregoing could have been adopted in place of the Phase 2 regulations to avoid Unocal's patents. Nor is there any evidence suggesting that any of the other alternatives proposed by Complaint Counsel would have or could have been adopted. *See* 921-1042 (providing evidence refuting each of the alleged "but-for" worlds identified by Complaint Counsel).

C. Unocal's Communications with Auto/Oil and WSPA Are Protected Petitioning under *Noerr*

1215. Auto/Oil's objective was to plan and carry out "research and tests designed to measure and evaluate automobile emissions and the potential improvements in air quality achievable through use of reformulated gasolines . . . ." RX 226 at U 0003029. The data generated from this research and testing was to be provided to "state regulators in their efforts to reduce total emissions from motor vehicles." *Id.* at U 0003028.

1216. The purpose of WSPA is [redacted]

1217. Both Auto/Oil and WSPA, as organizations of competitors, had antitrust guidelines that prohibited the exchange or discussion of competitively sensitive business information. For example, under WSPA's antitrust guidelines, WSPA members were prohibited from discussing with one another information relating to pricing, supply, cost, business strategies, and any other

competitively sensitive information, including patents. [redacted] *see also* RX 670 at WSPA 00007-9; [redacted] RX 226 at U 0003034 (¶ 3(A)) (Auto/Oil restrictions on member disclosures with competitive implications).

1218. Unocal did not have a duty to disclose its patent application to its competitors, either through WSPA or Auto/Oil. *See generally* RPF 711-718 (WSPA); RPF 674-680 (Auto/Oil).

1219. The only conduct involving alleged Unocal "direct" misrepresentations to Auto/Oil and WSPA took place at two meetings in September 1991—one with each organization—in which Unocal made available to the two groups its data and related information from the ten-car test that it previously provided to CARB. These meetings took place in the period just before the CARB Phase 2 rulemaking proceeding in which Auto/Oil and WSPA and many of their members were heavily involved.

1220. The Unocal communications alleged to constitute misrepresentations (or omissions) were in point of time, subject matter, and from Unocal's and Auto/Oil's and WSPA's interests, focus, and immediate objectives, directly related to an effort to influence governmental action by CARB.

1221. The refiners, as sophisticated business entities, were clearly aware that publication of research results (thereby making such results public and non-confidential) after a patent application has been filed does not affect patentability of claims relating thereto. They also must

have been clearly aware that companies or inventors often publish research results without disclosing that a related-patent application had been filed.

1222. Unocal's alleged misrepresentations did not cause either Auto/Oil or WSPA or their members to change their lobbying positions. RPF 746-751.

1223. WSPA, in fact, and all its members (including Unocal), with the single exception of ARCO, strenuously objected to the Phase 2 regulations incorporating the T50 specification. *See, e.g.*, RX 10 at CARB0000314-315; RX 60 at CARB0001184.

1224. ARCO lobbied for the regulations because it had successfully captured the regulatory agency and persuaded it to mandate the blending of gasolines that mimic ARCO's EC-X formula. *See, e.g.*, RPF 1108-1109.

1225. Although Auto/Oil's research was not fully completed at the time of CARB's Phase 2 Rulemaking, CARB used Auto/Oil data to support, among other things, temperature limits placed on T50. RX 10 at CARB0000315. CARB also relied on data from a joint GM/WSPA/CARB study: "The preliminary results of the GM/WSPA/CARB volatility study also show that controlling the distillation characteristics of the gasoline is important and that T50 is one of the major parameters to consider." RX 52 at 033. There is no basis to believe CARB's reliance on either of the foregoing was in any way impacted by the alleged Unocal misrepresentations in September 1991.

1226. Unocal was under no obligation to disclose its test data to Auto/Oil and WSPA, and the timing and context of the disclosure—following its decision to allow CARB to treat such data as non-confidential—make clear that the disclosure is inextricably bound up with the CARB Phase 2 rulemakings.

1227. Absent the CARB proceeding in which Unocal made its ten-car test data non-confidential at CARB's request, there is no basis to believe it would have ever disclosed the data to Auto/Oil or WSPA. It could simply have remained silent about its data, its research, and its patent applications until the patent(s) issued. Unocal, like other refiners, had a policy against disclosure of patent applications. *E.g.*, Beach IH Dep. (Unocal), 1/23/02, at 54:8-55:1, 59:16-22, 94:19-96:7; Jessup IH Dep. (Unocal), 1/25/02, at 150:3-14; [redacted]

1228. There is no basis to find that Unocal would have made any disclosures to Auto/Oil or WSPA with the intention of affecting their members' "technology investment decisions" or for any other reason, absent the CARB proceeding.

1229. At the time when CARB was promulgating its Phase 2 RFG regulations in November 1991, all of Unocal's claims had been denied by the patent examiner, *see* RPF 130, and no one—not even Unocal—knew what claims ultimately might by patentable and when.

1230. [redacted]

1231. Had the refiners known of Unocal's patent application and analyzed it years before the patent issued, there is no reason to believe that the refiners would have reached a different conclusion about the patent's likely invalidity, [redacted] and, absent a different conclusion, it is speculation to believe that refiners would have lobbied

CARB to take different action or made different business or investment decisions because of a possible Unocal patent the scope of which was unknown.

X. COMPLAINT COUNSEL'S CLAIMS ARE BARRED BY THE STATUTE OF LIMITATIONS

1232. In 1995, Atlantic Richfield Co., Chevron U.S.A., Inc., Exxon Corp., Mobil Oil Corp., Shell Oil Products Co., and Texaco Refining and Marketing, Inc. filed a complaint ("the 1995 Complaint") asserting claims for, inter alia, equitable estoppel, unclean hands, and implied license in an attempt to stop Unocal from asserting and enforcing its U.S. Patent No. 5,288,393 ("'393 patent"). 1995 Complaint ¶¶ 10-20, 61-77. The plaintiffs based their claims on Unocal's alleged concealment of the '393 patent application and conduct before and during the CARB proceedings leading to the development and adoption of the Phase 2 RFG specifications. *Id.* The plaintiffs alleged that Unocal's supposed concealment was part of a larger plot to gain a competitive edge over and extract royalties from the plaintiffs. *Id.*

1233. In 1996, several of these same refiners asked the FTC to investigate Unocal's alleged concealment of the '393 patent application before and during the Phase 2 CARB proceedings. RX 401; RX 402; RX 403; RX 404; RX 405; RX 406; Balto Stipulation ¶ 1.

1234. The refiners' investigation request centered on the same conduct alleged in the present administrative action. *E.g.*, Complaint ¶¶ 2-4. Specifically, in a March 5, 1996 letter, M. Laurence Popofsky, counsel for the refiners, directed the FTC to documents evidencing Unocal's 1991 communications with CARB (RX 402): (1) Unocal's June 20, 1991 presentation to CARB (RX 24); (2) Dennis Lamb's July 1, 1991 letter providing Unocal's equations to CARB (RX 2); and (3)

Dennis Lamb's August 27, 1991 letter to James Boyd releasing the confidentiality of Unocal's data (RX 3).

1235. As now alleged in the FTC's Complaint, Mr. Popofsky alleged that Unocal committed fraud on CARB. RX 402 at FTC-HE0000028. He attempted to establish that through Unocal's communications, and particularly the August 27, 1991 letter, Unocal made a "misstatement or, at the least, a misleading half-truth about Unocal's proprietary patent rights." *Id.*; *see also* RX 401 at FTC-HE0000022-26 (suggesting fraud argument as an alleged basis for why Unocal's conduct was not immune under the *Noerr-Pennington* doctrine).

1236. Mr. Popofsky attempted to shore up his accusations of fraud by providing evidence solicited from statements of CARB Chairwoman Jananne Sharpless. RX 403 at AG-FTC-0005027-28. In fact, Mr. Popofsky used Ms. Sharpless's statements to argue that CARB's economic assessment analysis was affected by Unocal's nondisclosure of the '393 patent application. *Id.* at AG-FTC-0005028; *see also* RX 405 at AG-FTC-0005030 (providing testimony from Jananne Sharpless' deposition and other CARB witnesses). The FTC has now raised a similar claim regarding the effects of Unocal's nondisclosure on CARB's cost-effectiveness analysis. *E.g.*, Complaint ¶ 3.

1237. Mr. Popofsky also alleged that Unocal "engaged in conduct that was knowingly misleading" by endorsing the WSPA cost study provided to CARB, but failing to disclose the '393 patent application. RX 403 at AG-FTC-0005028; RX 404. Complaint Counsel now make an identical allegation. Complaint ¶ 56-58.

1238. Finally, Mr. Popofsky drew attention to Unocal's September 26, 1991 presentation to Auto/Oil, which now also provides a basis for the FTC's Complaint against Unocal. RX 406 at FTC-HE0000090. Complaint ¶ 82.

1239. After consideration of all the evidence provided by Mr. Popofsky, the FTC declined to initiate an administrative proceeding against Unocal in 1996.

1240. Despite the FTC's initial refusal to initiate an administrative proceeding, on March 14, 2001, ExxonMobil Corp. placed Unocal's alleged concealment of the '393 patent application in front of the FTC for a second time. RX 407. ExxonMobil's request to the FTC occurred less than one month after the United States Supreme Court denied certiorari to the Court of Appeals for the Federal Circuit in the '393 litigation, ending the refiners' unsuccessful appeal. *Atlantic Richfield Co. v. Union Oil Co. of Cal.*, 531 U.S. 1183 (2001); RX 409.

1241. As part of its request, ExxonMobil parroted Mr. Popofsky's 1996 arguments and supporting evidence by producing Mr. Popofsky's 1996 correspondence with the FTC. RX 408.

1242. Based on ExxonMobil's request, the FTC initiated an investigation and subsequently initiated this administrative proceeding by filing a Complaint on March 2, 2003. FTC Complaint; Balto Stipulation ¶ 3; RX 409.

1243. As evidenced above, each and every misrepresentation alleged in the present FTC Complaint occurred in or before January 1995 and was known to the FTC no later than August 1996.

Dated: October 8, 2004.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on October 8, 2004, I caused the original and two paper copies of (1) the Confidential Attachment 1 to Respondent's Trial Brief, and (2) the Confidential Attachment 1 to Respondent's Proposed Findings of Fact, (3) Diskette containing the electronic Versions of the enclosed Attachment 1 documents and attachments and (4) Declaration of Bethany D. Krueger to be delivered for filing via overnight delivery (Federal Express) and caused an electronic copy to be delivered for filing via e-mail of (5) the public version of Respondent's Trial Brief and (6) the public version of Respondent's Proposed Findings of Fact, and (7) Certificate of Service:

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I hereby certify that on October 8, 2004, I also caused two paper copies of the (1) the Confidential Attachment 1 to Respondent's Trial Brief, and (2) the Confidential Attachment 1 to Respondent's Proposed Findings of Fact (which Attachments include copies of only those pages on which the confidential material appears), (3) the public version of Respondent's Trial Brief, (4) the public version of Respondent's Proposed Findings of Fact, and (5) Certificate of Service, to be delivered via overnight delivery (Federal Express) to:

The Honorable D. Michael Chappell
Administrative Law Judge
Federal Trade Commission
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I hereby certify that on October 8, 2004, I also caused one paper copy of the (1) the Confidential Attachment 1 to Respondent's Trial Brief, and (2) the Confidential Attachment 1 to Respondent's Proposed Findings of Fact (which Attachments include copies of only those pages on which the confidential material appears), (3) the public version of Respondent's Trial Brief, (4) the public version of Respondent's Proposed Findings of Fact, and (5) Certificate of Service, to be served upon each person listed below via overnight delivery (Federal Express):

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