UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

San Diego Gas & Electric Company, Complainant,	)	Docket Nos. EL00-95-000
	)	EL00-95-045
	)	EL00-95-075
v.	)	
	)	
Sellers of Energy and Ancillary Services into Markets Operated by the California Independent System Operator Corporation and the California Power Exchange, Respondents.	)	
	)	
Investigation of Practices of the California Independent System Operator and the California Power Exchange	)	EL00-98-000
	)	EL00-98-042
	)	EL00-98-063

PREPARED TESTIMONY OF
MICHAEL J. HARRIS, Ph.D., ECON ONE,
ON BEHALF OF THE CALIFORNIA PARTIES

Index of Relevant Material Template

Submitter (Party Name)	California Parties
Index Exh. No.	CA-15
Privileged Info (Yes/No)	Yes
Document Title	Prepared Testimony of Michael J. Harris, Ph.D., Econ One on Behalf of the California Parties
Document Author	Michael J. Harris, Ph.D.
Doc. Date (mm/dd/yyyy)	03/03/03
Specific finding made or proposed	Prices in the ISO and PX Spot Markets from October 2, 2000 to June 20, 2001 were unjust and unreasonable. Prices before October 2, 2000 were not consistent with Sellers' market-based rate tariffs and those of the ISO and PX. Seller withholding and other market manipulation, not buyer underscheduling, led to forced reliance on the Real-Time Market. The border price indices currently used in the refund calculations pursuant to the *July 25th Refund Order* are not appropriate for use in this proceeding.
Time period at issue	a) before 10/2000; b) between 10/2000 and 6/2001.
Docket No(s). and case(s) finding pertains to *	EL00-95 and EL00-98 (including all subdockets)
Indicate if Material is New or from the Existing Record (include references to record material)	New
Explanation of what the evidence purports to show	The concerns that Staff expressed in their August 2002 report relating to the validity of the California natural gas indices are valid. Further, recent evidence shows that the parties who manipulated the gas price indices did so knowingly and intentionally. Recent evidence also shows that the major energy firms doing business in the California market were aware that the indices did not reflect the actual prices for which gas was being bought and sold. These developments conclusively show that the California indices were fatally flawed and therefore inappropriate as an input to the MMCP.
Party/Parties performing any alleged manipulation	Dynegy; AEP; El Paso; Williams; CMS; Enron; Reliant

* This entry is not limited to the California and Northwest Docket Numbers.

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PREPARED TESTIMONY OF
MICHAEL J. HARRIS, Ph.D., ECON ONE,
ON BEHALF OF THE CALIFORNIA PARTIES

Q. Please state your full name, occupation and business address.

A. My name is Michael Harris. I am a Senior Economist with Econ One Research, Inc., a consulting firm that provides analysis and advice to clients on issues related to the economics of markets, both competitive and regulated. My business address is 601 West 5th Street, Fifth Floor, Los Angeles, California 90071.

1 Q. Are you the same Michael Harris who filed a declaration in response to the
2 Federal Energy Regulatory Commission's (the Commission) August 13, 2002
3 Notice Requesting Comment On Method For Determining Natural Gas Prices For
4 Purposes of Calculating Refunds?[1]
5 A. Yes I am. In addition, I have also filed testimony and declarations on natural gas
6 pricing issues on behalf of the California Parties in the proceedings before Judge
7 Birchman in these dockets and in requests for rehearing of Commission Orders at
8 these dockets. My curriculum vitae is attached as Exh. No. CA-16 (Appendix A).
9
10 Q. What is the purpose of your testimony?
11 A. The purpose of this testimony is to comment on recent developments related to the
12 validity of the California natural gas price indices used to calculate the Mitigated
13 Market Clearing Price (MMCP). These developments arose subsequent to the
14 October 2002 filing of my declaration in response to the Commission's August
15 2002 Request For Comments. The developments consist of: reports issued by the
16 Commission; new admissions by major energy companies that their employees
17 knowingly provided false information to the reporting publications; indictments of
18 key employees; evidence obtained through discovery pursuant to the
19 Commission's November 20, 2002 Order initiating "100 days of discovery" in
20 these dockets (November 20 Order); as well as other developments in the
21 marketplace, industry, and investigations by federal and state agencies.
22 In addition, in my October 2002 declaration in Appendices E and F, I provided a
23 detailed calculation showing the alternative pricing methodology recommended by
24 the Commission Staff. The price series contained in Appendices E and F was
25 calculated for the period October 2, 2000 to June 20, 2001. In this testimony I

[1] *Notice Requesting Comment On Method For Determining Natural Gas Prices For Purposes of Calculating Refunds*, August 13, 2002, Docket Nos. EL00-95-045, EL00-98-042

1 expand this price series to reflect implementation of Staff's recommendation for
2 the period May 1, 2000 to June 20, 2001, consistent with the temporal scope of
3 discovery in the November 20 Order.
4
5 Q. Please summarize your testimony.
6 A. I would first point out that the issues and concerns identified by the Commission
7 Staff in its August 2002 Report continue to be valid.[2] Indeed, recent developments
8 have only served to confirm, highlight, and amplify Staff's concern with respect to
9 the validity of the California natural gas price indices. The issues and concerns
10 identified by Commission Staff have now been echoed by the Commission itself,
11 other regulators, the U.S. Department of Justice (DOJ) as well as the industry.
12 Recent developments make it clear that Staff's concerns regarding potential
13 manipulation of these indices were valid and indeed likely understated. In
14 addition, recent evidence confirms that those who engaged in manipulation did so
15 with the express intent of manipulating prices in the California market. Finally,
16 evidence uncovered in the process of discovery makes it undeniably clear that
17 major energy firms in the California market knew that the California indices did
18 not reflect the price at which gas was bought and sold. Rather, these entities
19 acknowledged that the indices provided vastly inflated values for the price of
20 natural gas in California. Taken individually, any of the developments just
21 described is enough to cast further suspicion on the validity of the indices. Taken
22 collectively, the recent developments conclusively demonstrate that the California
23 indices are fatally flawed and inappropriate as an input to the MMCP. In short,
24 the California indices are broken and cannot be fixed. In light of the problems

[2] *Initial Report On Company-Specific Separate Proceedings and Generic Reevaluations; Published Natural Gas Price Data; and Enron Trading Strategies Fact Finding Investigation Of Potential Manipulation Of Electric and Natural Gas Prices*, Docket No PA02-2-000, Prepared by the Staff of the Federal Energy Regulatory Commission, August 2002.

with the indices, a pricing alternative is needed. The Commission Staff has provided a reasonable pricing alternative.

Q. Please briefly discuss some of the concerns Staff identified in its August 2002 report.

A. To begin, the Commission Staff pointed out that the gas indices used to calculate the MMCP were inconsistent with the observed clearing prices in the auctions run by the California Independent System Operator Corporation (ISO). Dr. Carolyn Berry, who filed a declaration in conjunction with mine, in October 2002, found that in many instances the bid of the marginal unit was less than the MMCP calculated using the California border indices. This is a clear indication that the MMCP could not accurately reflect the costs of the marginal unit, thus confirming Staff's notion of inconsistency between the MMCP and observed auction clearing prices.

Staff in its report also noted the importance of Enron Online (EOL) as a source of price information. Specifically, Staff noted that EOL served in a "self-referential" or circular role in establishing the indices. Further, in its investigation Staff uncovered what appears to be highly suspicious trading activity on EOL. In my declaration I agreed with Staff's assessment of the potential for manipulation on EOL and thus am equally concerned about the pivotal role played by EOL in establishing index prices.

In its investigation Staff also conducted and reported the results of a correlation analysis that showed how prices in California began to greatly diverge from those at a major pricing hub like Henry Hub in Louisiana during the period October 2000 to July 2001. I replicated Staff's analysis and agree that correlation analysis is a useful means for assessing whether markets are linked. Staff concluded that the low correlation coupled with other evidence of the unreliability of the indices

1 supports a finding that the prices at the California delivery points were
2 inappropriate for setting rates.
3
4 Q. Has the Commission itself raised any concerns regarding the validity of the natural
5 gas price indices?
6 A. Yes. The concerns identified by Staff in its August 2002 report and the conclusion
7 drawn that the indices not be used for setting rates have been echoed in other
8 pronouncements and actions taken by the Commission. At the Commission's
9 January 15, 2003 Open Meeting, following a presentation by Commission Staff on
10 gas index issues, Commissioner Brownell concluded that she would like to
11 convene a technical conference in the near future to look at the range of solutions
12 to the problems observed with the indices. Commissioner Massey agreed with
13 Commissioner Brownell's statement.[3]
14 The Commission's faith in the reliability of the indices has also caused it to pause
15 and consider whether the entire task of gathering, compiling, and reporting natural
16 gas prices should be assumed by a governmental agency. At the January 15, 2003
17 Open Meeting, Commissioner Massey indicated he had discussions with Chairman
18 Wood that dealt with the possibility of involving the Energy Information
19 Administration to gather and publish price information.[4]
20
21 Q. Is there any evidence that the concern over the reliability of the indices is affecting
22 the natural gas industry?
23 A. Yes. The Commission's concerns about the reliability of the indices are echoed in
24 the industry itself. A January 16, 2003 article discussing the reliability of the
25 indices alluded to the difficulty faced by the natural gas producing community.

[3] Exh. No. CA-16 (Appendix B) at 22 (815th Commission Meeting, Open Meeting, January 15, 2002).
[4] *Ibid* at 20.

1 The article explained how producers such as Houston-based Apache Corporation
2 were suffering damage from the problems with the indices in that is was difficult
3 for lenders to evaluate the producers' deals. The article quoted Mr. O'Brien,
4 Apache's director of governmental affairs: "It's a tough enough chore to run a
5 commodity-based business, because commodities by their very nature have ups
6 and downs in the price. It's almost impossible when you have no confidence in
7 the price whatsoever."[5]
8
9 Q. Has anyone who was actually responsible for compiling price information for the
10 trade publications commented on the extent of false reporting?
11 A. Yes. In testimony November 18, 2002 before the California Senate Select
12 Committee to Investigate Price Manipulation of the Wholesale Energy Market,
13 Ms. Michelle Markey provided comments on the extent of false reporting.[6] Ms.
14 Markey was in charge of the gas and electric price teams that gathered information
15 for the Gas Daily and Megawatt Daily and Inside FERC publications. Senator
16 Joseph Dunn, the Chairman of the Committee, posed the following question to
17 Ms. Markey:
18 "Given what you just responded, in your opinion is it common
19 practice for the traders to exaggerate the prices when reporting to the
20 indices"?
21
22 Ms. Markey responds:

[5] Exh. No CA-16 (Appendix C) at 25 (Federal Regulators Want Natural Gas Firms to Show Prices Are Reliable, *Energy Central Daily Gas News*, January 16, 2003, available at: http://www.energycentral.com/sections/gasnews/gn_printer_friendly.cfm?id=3575370).
[6] Exh. No. CA-16 (Appendix D) at 27 (Transcript of State of California, Senate Committee to Investigate Price Manipulation of the Wholesale Energy Market, Hearing Re. Natural Gas Investigation Update, November 18, 2002.) Ms. Markey testified under a grant of immunity, given the potential criminal implications of false price reporting.

1 "It was common industry knowledge that exaggeration was an
2 accepted practice."[7]
3 Later in her testimony Ms. Markey states:
4 "Common practice was to exaggerate your transactions to the price
5 reporters, report more volume, report a higher price than that was
6 actually transacted. You stretched your price in favor of what the
7 company's position was, or don't report at all, because you would
8 know whether or not your indices—your volumes and price could in
9 fact affect the index."[8]
10
11 Q. Has the Staff made any specific policy recommendations other than those that may
12 be contained in the original August 2002 report?
13 A. Yes. First, I think it can be said that the Commission Staff has not wavered from
14 its August 13 findings but instead has now gone beyond those findings to suggest
15 specific policy actions. As a reflection of its findings that these indices are
16 inappropriate for setting rates, the Staff in its January 15, 2003 presentation at the
17 Commission's Open Meeting recommended that natural gas companies be barred
18 from tying pipeline rates to published price indices until minimum standards can
19 be met.[9]
20
21 Q. Aside from concerns raised in the August 2002 report, is there an ongoing concern
22 at the Commission regarding price manipulation?
23 A. Yes. A recent report by the Commission's Office of Market Oversight and
24 Investigations makes it clear that not only does the evidence show that price

[7] *Ibid* at 46
[8] *Ibid.* at 48.
[9] Exh No. CA-16 (Appendix B) at 14.

1 manipulation has occurred but there is a very real concern that it is ongoing.[10] In
2 Issue 3 of the report titled, "Shaken Confidence in Price Discovery Methods" the
3 authors outline how recent revelations about false price reporting have created a
4 "crisis of confidence" in price discovery.[11] Specifically, the report notes that the
5 actions of traders who have lied to the energy trade publications with the intention
6 of manipulating prices have served to undermine confidence across the entire
7 industry.[12] The report also highlights the conundrum faced by the Commission
8 given the lack of serious alternatives to trade press developed indices and the
9 reluctance of the trade press to provide adequate details about how prices are
10 developed.[13] Issue 5 of the report notes that the Commission, while discovering
11 "extensive evidence" of lying about prices to trade publications, is also concerned
12 that the potential for manipulation may now be heightened.[14] Specifically, the
13 authors suggest that the current reduction in numbers of "wholesale market
14 participants and reduced liquidity and transparency at pricing points may increase
15 the potential for manipulation." Such is the case because having fewer traders can
16 actually reduce the statistical significance of reporting for trading points that are
17 less than active.[15] The 2003 report thus confirms and reiterates the concerns that
18 were central to the August 2002 Staff report.
19
20 Q. Have any other regulatory bodies investigated manipulation of the price indices?
21 A. Yes. On November 21, 2002 the California Public Utilities Commission (CPUC)
22 issued an Order initiating an investigation into the causes of the extraordinarily
23 high prices of natural gas delivered to the border during 2000 and 2001,

[10] Exh. No. CA-16 (Appendix E) at 79 (*2003 Natural Gas Market Assessment*, Staff Report By The Office of Market Oversight and Investigations Federal Energy Regulatory Commission, Winter 2002-03).
[11] *Ibid* at 95
[12] *Ibid*
[13] *Ibid*
[14] *Ibid* at 105-06
[15] *Ibid* at 105.

1 particularly during the period between December 2000 and May 2001. In its
2 "Order Instituting Investigation: Phase I," the CPUC summarized the issues and
3 provided some background as to what necessitated the investigation. In describing
4 the scope of the proceeding, the CPUC identified the questions it is interested in
5 investigating. These questions include whether any of the entities or their
6 affiliates under the CPUC's regulatory jurisdiction played a role in the price
7 increases. The CPUC was also interested in the role, if any, of utility gas cost
8 incentive mechanisms and what factors, in addition to the actions of El Paso,
9 caused the increase in gas costs. Finally, the CPUC posed the question: "Did
10 recently acknowledged inaccurate reporting of gas price information to energy
11 trade publications by energy trading companies have any effect on published index
12 prices?"[16]
13
14 Q. What can be said about the recent actions of the Commission and other regulatory
15 bodies with regard to price manipulation?
16 A. The pronouncements and actions made and being taken by the Commission and
17 other regulatory bodies reflect the growing body of evidence that demonstrates
18 that traders at major energy companies repeatedly lied to the trade publications
19 with the express intent of manipulating prices. At the time the August 2002 Staff
20 Report was issued, no trader or energy company had come forward and confessed
21 to engaging in price manipulation. At the time my October 2002 declaration was
22 filed, two companies, Dynegy and American Electric Power (AEP), conceded in
23 press releases that their employees had lied to industry publications. Specifically,
24 on September 25, 2002 Dynegy announced that it had discovered that 15 of its

[16] Exh. No. CA-16 (Appendix F) at 110, 118-19 (Before the California Public Utilities Commission of the State of California, Order Instituting Investigation Phase 1, Filed Public Utilities Commission, November 21, 2002 San Francisco Office, Investigation 02-11-040, Preliminary Scoping Memo)

1 employees had engaged in false reporting. On October 9, 2002 AEP similarly
2 announced that five of its employees had provided inaccurate information to the
3 energy publications. Since October three additional energy firms -- El Paso,
4 Williams, and CMS -- have admitted that their traders were engaged in false
5 reporting. On October 25, 2002, Williams announced that it had learned its
6 natural gas traders provided inaccurate information to energy industry
7 publications. On November 4, 2002 CMS announced that a preliminary analysis
8 found that employees in two subsidiaries provided inaccurate data to the trade
9 press. In some cases, the energy firms proclaimed that the responsible people
10 were dismissed or had "left the company" and the actions of these individuals
11 were found as a result of internal reviews of trading activities. What is now clear
12 is that the price manipulation was not limited to a lone rogue trader. Rather, the
13 evidence now makes it clear that this activity occurred in the trading departments
14 of numerous major energy companies representing a wide swath of the industry.
15
16 Q. Can the index manipulation be described solely in terms of false reporting, where
17 a trader, say, exaggerates the price received in a transaction to the trade
18 publication?
19 A. No. In addition to falsely reporting actual trades, some of the energy companies
20 engaged in something called "wash trades" that also served to manipulate the
21 indices. A wash trade is simply a "paper" transaction between two entities. For
22 example, entity A may state that it sold 10,000 MMBtu of gas at $8.00/MMBtu to
23 entity B who in turn reports that it sold 10,000 MMBtu of gas at $8.00/MMBtu to
24 entity A. No gas, of course, is exchanged. Rather each transaction is a mirror
25 image of the other and thus cancels, or "washes," the other out. Energy companies
26 have admitted to engaging in wash trades as a means to boost revenue. In
27 addition, wash trades have the secondary effect of altering the price indices. Ms.

1 Markey, in her testimony described how wash trades work and specifically how
2 they can impact the price indices.[17]
3
4 Q. Do you have any quantitative evidence regarding the extent of wash trades by any
5 of the generators?
6 A. Yes. I have reviewed data submitted by Enron as part of its discovery response in
7 FERC Docket PA02-2 to questions concerning wash trades. There were a number
8 of spreadsheet files that detailed wash trades. As a means to illustrate the extent of
9 wash trading, I focused on approximately one month's worth of transactions.
10 Specifically, for December 1, 2000 to December 29, 2000 in a file with a tab titled
11 "Wash Txn-No Duplicates" there was approximately 2,850,000 MMBtu of wash
12 trade transactions.[18] The minimum and maximum "fee" for these trades was
13 $12.00/MMBtu/day and $66.00/MMBtu/day, respectively. The weighted average
14 "fee" over this period was $39.56/MMBtu/day. A significant proportion of the
15 high-priced wash trades in December 2000, during the peak of the California spot
16 price spikes, involved Reliant transacting with Enron at Southern California
17 delivery points. This is notable in light of the fact that it was testimony by Reliant
18 officer John Stout that formed the basis for the Commission's original decision, in
19 the July 25, 2001 Order, to rely on the California border spot price indexes for
20 setting the MMCP.[19] Reliant's responses in PA02-2 to the Commission's wash
21 trade data requests deny any gas wash trades in the Western United States – but as
22 is discussed in other California Parties' testimony, Reliant's prior statements to the

[17] Exh. No. CA-16 (Appendix D) at 67 (Transcript of State of California, Senate Committee to Investigate Price Manipulation of the Wholesale Energy Market, Hearing Re: Natural Gas Investigation Update, November 18, 2002).
[18] Exh. No. CA-16 (Appendix G) at 124-47.
[19] *San Diego Gas & Electric Co., et al.*, 96 FERC ¶ 61,120 at 61,518 (2001) *Report and Recommendation of Chief Judge and Certification of Record*, citing 96 FERC ¶ 63,007 at 65,040 (2001), citing Tr. 601. A copy of Tr 601, Mr. Stout's testimony, is attached hereto as Exh No CA-16 (Appendix H) at 153

1 Commission and other investigative bodies have shown numerous inconsistencies
2 with the facts as elicited through discovery.
3
4 Q. Has any legal action been taken against individuals engaged in the price
5 manipulation?
6 A. Yes. The seriousness of the revelations of false reporting has not escaped the
7 DOJ. The U.S. Attorney's Office for the Southern District of Texas recently
8 unsealed two indictments charging traders with knowingly transmitting false
9 information. Specifically, on December 4, 2002 the DOJ announced a two count
10 indictment charging Mr. Todd Geiger, a natural gas trader and former Vice
11 President of El Paso Corporation, with knowingly transmitting a false trade report
12 used to calculate the index prices of natural gas.[20] On January 27, 2003 the same
13 office of the DOJ unsealed a seven-count indictment charging Ms. Michelle Marie
14 Valencia, a former senior natural gas trader who headed the Western U.S. gas
15 trading desk for Dynegy Marketing and Trade, with three counts of knowingly
16 transmitting false trade reports used to calculate index prices and four counts of
17 wire fraud. In the press release for Ms. Valencia, the U.S. Attorney, Mr. Michael
18 T. Shelby, highlighted the importance of the indictment by saying, "This
19 indictment cuts to the heart of the American system of business. Investors have a
20 right to know the truth about market conditions. We will hold accountable anyone
21 who intentionally deceives the investing public[.]"[21]
22

[20] Exh. No CA-16 (Appendix I) at 163-68 (U.S. Department of Justice, U.S Attorney's Office Southern District of Texas, News Release (020104 - Geiger, "Former El Paso VP Indicted For Reporting Bogus Trades To Manipulate Price of Natural Gas Market," December 4, 2002 and accompanying indictment, filed December 2, 2003, U.S. District Court for the Southern District of Texas).

[21] Exh. No CA-16 (Appendix J) at 169, (U.S. Department of Justice, U.S. Attorney's Office Southern District of Texas, News Release (030127-Valencia). "Former Dynegy Senior Trader Indicted For Reporting Bogus Trades To Inside FERC," January 27, 2003 and accompanying indictment, filed January 22, 2003, U.S. District Court for the Southern District of Texas).

1 Q. Has any other action been taken against the individuals or companies engaged in
2 price manipulation?
3 A. Yes. The indictment of Ms. Valencia, just described, followed the resolution of a
4 civil enforcement action by the U.S. Commodity Futures Trading Commission
5 (CFTC) against Dynegy. On December 19, 2002, the CFTC issued a settlement
6 order that found that from at least January 2000 through June 2002, Dynegy
7 reported false natural gas trading information to reporting firms. The order found
8 that Dynegy "knowingly submitted false information to the reporting firms in an
9 attempt to skew those indexes for Dynegy's financial benefit." In addition, the
10 CFTC noted that to ensure its reported information would be used by the reporting
11 firms, Dynegy caused West Coast Power to submit information misrepresenting
12 that West Coast Power was a counterparty to the fictitious trades. West Coast
13 Power is a joint venture owned by an affiliate of Dynegy Marketing & Trade and
14 NRG.[22] West Coast Power owns the power plants in Southern California that are
15 commonly referred to as the Dynegy power plants.
16
17 Q. Is there evidence that California border prices were the specific focus of the price
18 manipulation?
19 A. Yes. Ms. Valencia, the indicted Dynegy trader, was arrested on charges she
20 reported fictitious natural gas transactions for California and other Western hubs
21 to industry publications. Michael Shelby, the U.S. Attorney in Houston, told the
22 Los Angeles Times that Ms. Valencia "fabricated trades from natural gas pipelines
23 that were, in the majority of cases, in California."[23] In addition, there was at least
24 some indication that the activities of Mr. Geiger, the indicted El Paso trader, were

[22] Exh. No CA-16 (Appendix K) at 179, 180 (United States Of America Before the Commodity Futures Trading Commission, In the Matter of: Dynegy Marketing & Trade and West Coast Power LLC, Order Instituting Proceedings Pursuant to Sections 6 c and 6 d of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions, December 18, 2002)
[23] Exh. No CA-16 (Appendix L) at 186.

1 directed at gas markets in the Western U.S., as he was responsible for trading
2 natural gas through El Paso's Canadian desk.
3
4 Q. Can the magnitude of the price manipulation be quantified?
5 A. It is not clear the exact magnitude to which the California border indices were
6 actually manipulated by the actions of Ms. Valencia, Mr. Geiger or other energy
7 traders. The information contained in the indictments of these individuals does
8 not shed such quantitative light. Further, the trade publications have steadfastly
9 refused to provide adequate details and instead have cited their First Amendment
10 constitutional rights. Thus, given the lack of quantitative evidence, it would be
11 difficult to specifically quantify the extent of manipulation.
12
13 Q. While it is not possible to specifically quantify the extent of the manipulation, is
14 there specific evidence to indicate the indices clearly did not reflect the price at
15 which gas was being bought and sold?
16 A. Yes. It is clear based on evidence obtained through discovery that the California
17 index prices did not reflect what price gas was actually being bought and sold. An
18 email from an employee at Enron, who during 2000 was the largest gas marketer
19 in California, illustrates perfectly the "disconnect" between index prices and the
20 prices received in actual transactions. In a February 6, 2001 email,[24] Mr. Jeffrey
21 Fawcett explained to a colleague, Mr. Drew Fossum, why he was forced to amend
22 a deal with Sempra. Mr. Fawcett says:

[24] Exh. No. CA-77 at 1.

1 "Drew,

2 Susan said you were having trouble getting your arms around
3 the logic behind the amendment we're proposing to the
4 Sempra deal. Simply stated, Sempra (like others we've
5 spoken to in the marketing community) is having difficulty
6 selling gas at the Gas Daily Index price. This is not unusual."
7

8 The email then goes on to highlight that the prices at the border over the prior
9 weekend were $12.00/MMBtu while Sempra could only "muster" a sale at
10 $9.00/MMBtu. Mr. Fawcett explained why he was forced to amend the Sempra
11 deal to reflect the actual sales prices received by Sempra rather than the index,
12 which was how the original deal was structured. Mr. Fawcett closed by informing
13 Mr. Fossum that unless the deal was amended, Sempra would have simply
14 "terminate[d] it." Given Mr. Fawcett expected somewhere in the range of $2-$3
15 million on the deal he explained that he couldn't just "walk away from it."
16 The February 6, 2001 Enron email from Mr. Fawcett is compelling for a number
17 of reasons. First, it demonstrates very clearly that Enron, the largest gas marketer
18 in California, knew very well that the daily indices did not reflect the price at
19 which gas was being bought and sold. The email is clear that Mr. Fawcett had
20 discussions with not just Sempra but others in the marketing community about the
21 problems with the indices. Second, the email provides some quantitative
22 indication as to the difference between what the indices were reporting and actual
23 transaction prices. As discussed by Mr. Fawcett, the price index for the weekend
24 just prior to the date his email was sent to Mr. Fossum was overstating the prices
25 received by Sempra by over 33%.
26

1 Q. In your October 2002 declaration you discussed the portfolio strategies of
2 California generators. Was anything found in the evidence that would corroborate
3 statements made in your declaration?
4 A. Yes. The evidence has shed light on not only the magnitude to which the
5 California daily indices overstated actual transactions prices but also on the natural
6 gas procurement strategies of electric generators. In my October 2002 declaration
7 I discuss the potential portfolios of the California generators. I note that the use of
8 a broad portfolio of assets and sophisticated gas supply management techniques
9 would likely produce a profile of actual gas costs for the generators that had little
10 similarity to the daily price swings observed over the refund period reflected in the
11 indices used as inputs to the MMCP.[25] One example of the reasonableness of the
12 statement in my declaration can be found in a document produced in discovery.
13 The document was an October 3, 2000 Northern California Power Agency
14 (NCPA) Interoffice Memorandum.[26] In the memorandum, the author, Mr. Jim
15 Whalen, discussed a number of issues and concluded with a statement that he
16 bought gas for the first quarter of 2001 at "over approximately $6.00 per million
17 BTU." For purposes of comparison, I calculated the simple average of daily gas
18 prices as reported by the California indices for January through March 2001. The
19 simple average for Northern and Southern California was $9.71/MMBtu and
20 $15.17/MMBtu, respectively. These are the indices used in the MMCP
21 calculation. What this demonstrates is that NCPA, a modestly sized entity, was
22 able to procure gas for its portfolio, on average, for $3.71 less than the Northern
23 index and over $9.00/MMBtu less than the index for Southern California. Clearly,
24 both indices, which are inputs to the MMCP, drastically overstated at least a
25 portion of the actual portfolio cost of gas for at least this relatively small entity.

[25] Declaration of Michael J Harris, Ph D in Docket No EL00-95-045 and EL00-98-042.
[26] Exh. No. CA-85 at 1-2.

1

2 Q. In your October declaration you also raise the possibility that generators hedged
3 their gas costs. Have you found evidence of hedging?
4 A. Yes. A March 2, 2001 presentation by Reliant Energy alluded to the impact of
5 hedging. On a slide titled "Commercial Strategy-Success to Date," under the
6 heading of "Multiple ways to win (examples to date)" are numerous items
7 including "Acquired SCE generation assets" and "Leveraged ISO knowledge into
8 significant transmission (FTR) value." Also included in the list is "Covered
9 portfolio gas basis position prior to run up." This last item suggests that Reliant
10 was successful in shielding itself from the run up in natural gas prices.[27]
11 In addition to the presentation there are documents related to Reliant's financial
12 modeling that make it clear that hedging was a consideration. Reliant produced a
13 report/model titled, "California Wholesale Group Profit/Loss Report." The scope
14 of the profit and loss report was to report, on a next-day basis, all the revenues and
15 costs that affect its California Wholesale Group. The report describes the various
16 "Detailed Data Inputs," which include Fuel Cost. This item is described as
17 follows: "Fuel cost will be calculated by the California Fuel spreadsheet. This
18 spreadsheet takes into account hedged gas and transport prices, as well as gas
19 bought on the spot market."[28] While Reliant may indeed have acquired some spot
20 gas, it is apparent that it was also significantly hedged – enough so that it
21 congratulated itself on avoiding the gas price "run up" in its own position.
22
23 Q. Do you have any evidence that would quantify the extent to which Reliant hedged
24 its gas purchases?

[27] Exh. No. CA-57 at 6.
[28] Exh. No. CA-58 at 1-2.

A. Yes. In data produced by Reliant in discovery,[29] there are a number of spreadsheets that appear to calculate, on a daily basis, the profit/loss for Reliant's operations. The spreadsheets are titled "Energy Strategy" and include data on "Energy Revenue," "Generation Cost," and "Energy Profit." The figure for Generation Cost in turn references a figure that represents the weighted average cost of gas (WACOG). The WACOG is calculated as the product of two types of purchases. The first purchase represents the amount of gas that was hedged while the second type of purchase represents that amount of gas purchased in the daily spot market at southern California border prices. I reviewed the data for the month of December 2000. The data for this month shows conclusively that Reliant hedged a significant portion of the natural gas used to generate power and enjoyed equally significant financial benefits. For purposes of illustration I have reproduced the data and attached it as Exh. No. CA-16 (Appendix M) at 188.

As shown in the exhibit, for the month of December 2000 Reliant purchased 7,904,197 MMBtu of gas. Of this total, 4,380,000 MMBtu was hedged with the remainder being purchased on the spot market. The simple average price for hedged gas was $8.27/MMBtu while the same average for gas purchased in the spot market was $26.51. Overall, Reliant's WACOG shown in these files for December 2000 was $13.58/MMBtu, or $12.93/MMBtu less than the spot price of gas. The difference in price is very significant. Put another way, had Reliant purchased gas at the southern California index price, for the transactions shown in the files, it would have incurred approximately $83,775,645 more in gas costs.

This data is also inconsistent with the testimony of Reliant officer John Stout that formed the basis for the Commission's original decision, in the July 25, 2001

[29] Exh. No. CA-33.

1 Order, to rely on the California border spot price indexes for setting the MMCP.[30]
2 In his testimony, Mr. Stout stated "The biggest problem that's inherent in the
3 model used by the state has to do with gas prices." He discusses "three problems"
4 one of which is the "fact" that bid week monthly index prices do not match the
5 way people buy gas. Specifically, Mr. Stout indicated that if an entity is selling
6 into the spot market it doesn't know day to day how much gas it will need. Mr.
7 Stout concludes, "Therefore, you're buying it at daily spot prices, not month ahead
8 index prices."[31] Clearly, the evidence for December 2000 shows that Reliant was
9 not purchasing all or the majority of its gas on the spot market and as a result
10 enjoyed significant cost savings.
11
12 Q. In your October declaration you calculated and provided a price series that
13 reflected Staff's recommendation to use a producing basin index price plus
14 transportation cost. Have you expanded that price series?
15 A. Yes I have. In my October declaration I calculated the price series resulting from
16 adopting the Staff's recommendation to use production basin prices and tariffed
17 transportation costs in lieu of the flawed California border indices. Specifically, I
18 calculated the price series reflecting Staff's recommendation for the period
19 October 2, 2000 to June 20, 2001. In Exh. No. CA-16 (Appendix N at 189
20 (Southern California) and Appendix O at 226 (Northern California)), I have
21 expanded that price series to encompass the period May 1, 2000 to June 20, 2001,
22 to address the period of time when market manipulation was evident. As reflected

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[30] *San Diego Gas & Electric Co., et al.*, 96 FERC ¶ 61,120 at 61,518 (2001) citing *Report and Recommendation of Chief Judge and Certification of Record,* 96 FERC ¶ 63,007 at 65,040 (2001), citing Tr. 601. A copy of Tr. 601, Mr. Stout's testimony, is attached hereto as Exh No CA-16 (Appendix H) at 153.

1 in that series, while there are episodic instances where prices using the revised
2 price series exceed the prices calculated based on gas indices, on balance, and as
3 further discussed in the testimony of Dr. Stern, it appears it would not result in a
4 significant change in the overall level of refunds that would be due for the pre-
5 October 2, 2000 period.
6
7 Q. Does this conclude your testimony?
8 A. Yes.

[31] *Ibid*

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

San Diego Gas & Electric Company, Complainant	)	
v.	)	Docket Nos. EL00-95-069
Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator Corporation and the California Power Exchange, Respondents.	)	
Investigation of Practices of the California Independent System Operator and the California Power Exchange.	)	Docket Nos. EL00-98-058

AFFIDAVIT OF MICHAEL HARRIS

I declare under penalty of perjury that the foregoing is true and correct.

Executed on February 24, 2003.

Michael Harris

Contains Protected Material -
Not Available To Competitive Duty Personnel

Index of Relevant Material Template

Submitter (Party Name)	California Parties
Index Exh. No.	CA-16
Privileged Info (Yes/No)	Yes
Document Title	Appendices to Prepared Testimony of Michael J. Harris, Ph.D., Econ One on Behalf of the California Parties
Document Author	Michael J. Harris, Ph.D.
Doc. Date (mm/dd/yyyy)	03/03/03
Specific finding made or proposed	Prices in the ISO and PX Spot Markets from October 2, 2000 to June 20, 2001 were unjust and unreasonable. Prices before October 2, 2000 were not consistent with Sellers' market-based rate tariffs and those of the ISO and PX. Seller withholding and other market manipulation, not buyer underscheduling, led to forced reliance on the Real-Time Market. The border price indices currently used in the refund calculations pursuant to the *July 25th Refund Order* are not appropriate for use in this proceeding.
Time period at issue	a) before 10/2000; b) between 10/2000 and 6/2001.
Docket No(s). and case(s) finding pertains to *	EL00-95 and EL00-98 (including all subdockets)
Indicate if Material is New or from the Existing Record (include references to record material)	New
Explanation of what the evidence purports to show	The concerns that Staff expressed in their August 2002 report relating to the validity of the California natural gas indices are valid. Further, recent evidence shows that the parties who manipulated the gas price indices did so knowingly and intentionally. Recent evidence also shows that the major energy firms doing business in the California market were aware that the indices did not reflect the actual prices for which gas was being bought and sold. These developments conclusively show that the California indices were fatally flawed and therefore inappropriate as an input to the MMCP.
Party/Parties performing any alleged manipulation	Dynegy; AEP; El Paso; Williams; CMS; Enron; Reliant.

* This entry is not limited to the California and Northwest Docket Numbers.

econ ONE

MICHAEL J. HARRIS, Ph.D.
Senior Economist

MICHAEL HARRIS has been a consulting economist for the last fourteen years. He has specialized in energy issues and primarily natural gas. He has provided economic research and consulting on matters related to valuation, pricing, competitive bidding, regulation, and antitrust. He has analyzed market power, anticompetitive conduct, alternative forms of price regulation, and studied the evolution of industry deregulation and restructuring. He has testified before the Federal Energy Regulatory Commission, numerous State Regulatory Commissions, the Ontario Energy Board, the Alberta Energy and Utilities Board, and State Courts.

TESTIMONY

San Diego Gas v. Sellers of Energy and Ancillary Services
United States Federal Energy Regulatory Commission
June 2002
Request for rehearing and clarification-marginal gas cost analysis

Fun 4 All Corporation v. MGA Entertainment
Arbitration, Los Angeles
June 2002
Damages stemming from breach of licensing agreement

San Diego Gas v. Sellers of Energy and Ancillary Services
United States Federal Energy Regulatory Commission
Mar. 2002
Marginal gas cost analysis

In the Matter of a Application by ATCO Gas for the Transfer of the Carbon Storage Facility
Alberta Energy and Utilities Board
Mar. 2002
Market power evaluation

Complaint of Enogex, Inc. Concerning Competitive Bidding
Corporation Commission of the State of Oklahoma
Oct. 2001
Bidding evaluation

Weld Air Alaska, Inc. v. AirGas, Inc.
United States District Court for The District of Alaska
2001
Antitrust claim

Application To Require Oklahoma Natural Gas to Inform Commission Regarding Appropriate Methods to Lessen Price Volatility
Corporation Commission of the State of Oklahoma
2001
Price stabilization strategies

Application To Review Oklahoma Natural Gas' Least Cost Procurement Practices
Corporation Commission of The State of Oklahoma
2001
Prudency review

Exxon Corporation v. Department of Conversation and Natural Resources
In the Circuit Court of Montgomery
Mar. 2001
Punitive damages

Perry Minton and Dean Allen Associates v. Amalgamated Acme Affiliates, Inc. and University Sports Publication
Travis Country District
Feb. 2001
Antitrust claim

Lloyd Tanner and Shaw Industries v. Milliken & Company
United States District Court Central District of California
2001

In the Matter of the Wisconsin Gas Company's Replacement Incentive Gas Cost Mechanism
Public Service Commission of Wisconsin
Apr. 2000
Appropriation of trade secrets
Incentive ratemaking

In the Matter of Northern Border Pipeline Company's Appropriate Return on Equity
United States Federal Energy Regulatory Commission
2000
Return on equity analysis

In the Matter of the Appropriate Return on Equity for the Transco and Disco Business Operations of the Ontario Hydro Services Company
The Ontario Energy Board
1999
Return on equity analysis
Electric dispatch analysis

In the Matter of the Economic Evaluation of Natural Gas Clearinghouse's Capacity Contract With El Paso Natural Gas Company
United States Federal Energy Regulatory Commission
1998
Market power evaluation

Application of the Wisconsin Electric Power Company for Authority To Increase Rates for Steam Services
Public Service Commission of Wisconsin
1998

Cablevision of Boston v. Boston Edison
Massachussetts Department of Telecommunications & Energy
1997
Pole attachment rate analysis

In the Matter of the Commission's Investigation of the Rates For Gas Service of PNM Gas Service
New Mexico Public Service Utility Commission
1997
Incentive ratemaking

In the Matter of Gas Rates for Providence Gas Company
Rhode Island Public Utility Commission
1997
Development of demand forecast

E.M. Lovelace v. Amerada Hess Corporation
In The Circuit Court of Escambia County Alabama
1997
Appropriateness of royalty settlement

In the Matter of Wisconsin Gas Company's Proposed Gas Cost Incentive Mechanism
Public Service Commission of Wisconsin
Jun. 1997
Incentive ratemaking

In the Matter of Wisconsin Power and Light's Gas Sales Forecast
Public Service Commission of Wisconsin
Nov. 1996
Development of demand forecast

In the Matter of Competition Implementation Issues
Public Service Commission of Wisconsin
1996
Competitive market evaluation standards

In the Matter of Northern Border's Appropriate Return on Equity
United States Federal Regulatory Commission
1996
Return on equity analysis

In the Matter of the DPUC Review of the Purchased Gas Adjustment Clause
Connecticut Department of Public Utility Control
1996
Incentive ratemaking

In the Matter of Alternatives of Traditional Gas Cost Recovery Mechanisms
Wisconsin Public Utility Commission
1995
Incentive ratemaking

In the Matter of Providence Gas Company's Rates and Demand Forecast
Rhode Island Utility Commission
1995
Development of demand forecast

In the Matter of the Application of Kansas Pipeline to Increase Rates and Change Terms of Service
Corporation Commission of the State of Kansas
1994
Return on equity analysis acquisition premium evaluation

CONSULTING PROJECTS

- Conducted an exhaustive overview of the business and financial risk of, and the impact of diversification on, the U.S. interstate pipeline industry.
- Developed a comprehensive study of the North American natural gas market.
- On behalf of a group of local distribution companies, submitted comments in numerous Generic Hearings to the FERC regarding the competitive structure of the interstate pipeline network.
- Developed a market power study of the Alberta natural gas storage market.
- Developed viability studies for numerous new natural gas pipeline projects.
- Developed numerous gas cost incentive mechanisms for LDCs.
- Evaluated and structured LDC outsourcing arrangements for gas supply, transportation and storage.
- Assisted numerous LDCs develop unbundling strategies and programs.
- Assisted in the development of Request for Proposals for gas supply, transportation, and storage assets.
- Acted as third-party evaluator of bids received for LDC gas supply, transportation, and storage services.

EDUCATION

Ph.D., Economics, University of Washington (Seattle)

- *Industrial Organization*
- *Microeconomics*
- *Public Finance*

DISSERTATION: "The Price Structure and Degree of Competition in the California Crude Oil Market"

B.A., Economics, University of Colorado (Boulder)

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1 BEFORE THE

2 FEDERAL ENERGY REGULATORY COMMISSION

3

4 -x

5 IN THE MATTER OF: :

6 CONSENT MARKETS, TARIFFS AND RATES - ELECTRIC :

7 CONSENT MARKETS, TARIFFS AND RATES - GAS :

8 CONSENT ENERGY PROJECTS - HYDRO :

9 CONSENT ENERGY PROJECTS - CERTIFICATES :

10 DISCUSSION ITEMS :

11 STRUCK ITEMS :

12 -x

13

14 815TH COMMISSION MEETING

15 OPEN MEETING

16

17 Hearing Room 2C

18 Federal Energy Regulatory

19 Commission

20 888 First Street, N.E.

21 Washington, D.C.

22

23 Wednesday, January 15, 2002

24 10:05 a.m.

Volume No. 1

Official Stenographers Report

Before the

FEDERAL ENERGY REGULATORY COMMISSION

ORIGINAL

IN THE MATTER OF: DOCKET NO:

CONSENT MARKETS, TARIFFS AND RATES
- ELECTRIC
CONSENT MARKETS, TARIFFS AND RATES
- GAS
CONSENT ENERGY PROJECTS - HYDRO
CONSENT ENERGY PROJECTS - CERTIFICATES
DISCUSSION ITEMS
STRUCK ITEMS

815th COMMISSION MEETING
OPEN MEETING

LOCATION: WASHINGTON, D.C. PAGES: 1 - 105

DATE: JANUARY 15, 2003

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NATIONWIDE COVERAGE

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1 APPEARANCES:

2 COMMISSIONERS PRESENT:

3 CHAIRMAN PAT WOOD, III, Presiding

4 COMMISSIONER WILLIAM L. MASSEY

5 COMMISSIONER NORA MEAD BROWNELL

6

7

8

9

10 ALSO PRESENT:

11 DAVID L. HOFFMAN, Court Reporter

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(Recess.)

CHAIRMAN WOOD: Our last item today is A-5.

SECRETARY SALAS: The next and final item for discussion is A-5, discussion of the Commission's use of natural gas price indices, with a presentation by Stephen Harvey, accompanied by John Carlson and Marsha Gransee.

MR. HARVEY: Good afternoon. Over the past year, Staff has gathered information that raises serious doubts about the accuracy of information reported in many wholesale natural gas price indices. Current industry practice is for the trade press to gather price information by polling traders.

We have seen ample evidence to raise serious questions regarding the functioning of this current industry practice. The natural gas industry cannot function without accurate, dependable, and trustworthy wholesale price information.

Consequently, some action must be taken by the industry to address the problem. We also propose action by the Commission to assure that the orders and tariffs it approves reflect accurate price information.

We would like to review our concerns today by first explaining the Commission's interest in price index formation; second, reviewing the public evidence that raises questions about price index formation; third, defining at a

high level, the criteria important to developing trustworthy price information in the future; and, fourth, proposing some next steps.

The Commission's interest in natural gas price indices relates both to the overall functioning of the wholesale market, and to specific orders it has approved that reference these indices. In the 1980s, the natural gas industry developed an approach to developing and disseminating wholesale price information, using indices created and published by the trade press.

This practice followed the more established practice in oil markets. Soon thereafter, certain orders and tariffs proposed by natural gas companies and approved by the Commission, contained references to these price indices.

Natural gas price indices developed by the trade press remain central to the functioning of the wholesale natural gas markets.

Customers depend on these published price indices to make purchasing decisions. Numerous physical contracts refer to these price indices explicitly.

Financial contracts that value the difference in prices between locations across the natural gas delivery system known as BASIS, refer to these price indices.

Companies interested in investing in exploration

1 and production, transportation and storage, rely on these
2 prices to estimate the value of assets.
3 The Commission's current vision is dependable,
4 affordable energy through sustained competitive markets.
5 This vision cannot be achieved without the development and
6 dissemination of fair and trustworthy price information.
7 More specifically, the Commission approved
8 pipeline tariffs that refer to market price data. There are
9 three areas where these references tend to happen: First,
10 cash-out provisions.
11 On most major pipelines, when deliveries and
12 receipts of natural gas are not in balance, the differences
13 may be valued and sold to the shipper or purchased by the
14 pipeline, using market price information.
15 These cash-out provisions allow the industry to
16 quickly and efficiently account for and eliminate
17 imbalances.
18 Second, pipeline penalties: In the determination
19 of pipeline penalties, the Commission sometimes allows
20 pipelines to use market prices to deter shipper conduct that
21 could threaten system operations.
22 Third, basis differentials: Many negotiated rate
23 transportation contracts establish transportation rates,
24 using the basis differentials between two or more price-
25 indexed trading points. The Commission does not approve

1 natural gas price indices for market-based rates that are
2 largely the result of contract negotiations between parties,
3 however, failure of confidence in these bilaterally-
4 negotiated prices could raise concern.
5 On August 13, 2002, Commission staff made
6 publicly available, the initial report of its fact-finding
7 investigation of potential manipulation of electric and
8 natural gas prices in Western markets, Docket Number PA02-2.
9 Staff inquired into the characteristics of publicly-
10 recorded price indices, including natural gas spot prices at
11 California delivery points, used in the California refund
12 proceeding.
13 Staff found significant problems with published
14 price indices. These problems included: First, the
15 inability to independently verify published price indices.
16 The sources of price information have not been disclosed,
17 due to the publisher's concerns about revealing source data.
18 Second, undetected errors that may exist because
19 trade publications reporting spot and foreign prices do not
20 employ statistically valid sampling procedures or systematic
21 formal verification procedures.
22 Third, significant incentives of market
23 participants to manipulate spot market prices reported to
24 trade publications because natural gas is the fuel input for
25 the electricity generators that set the market price in

1 California.

2 Fourth, wash trades may have an adverse effect on

3 reported price data.

4 Fifth, Enron Online, Enron's former electronic

5 trading platform, was a significant source of price

6 discovery and information, and was potentially susceptible

7 to manipulation by market participants, which could affect

8 the published price indices.

9 The final report from Staff handling this

10 investigation is scheduled to be released in the first

11 quarter of this year, and will offer its own analysis,

12 conclusions, and recommendations on standards for indices.

13 Since the issuance of the Staff initial report,

14 five companies have admitted that some of their employees

15 provided false data to the trade press that publish energy

16 price indices. On September 25, 2002, Dynegy announced that

17 they had discovered that 15 Dynegy employees had engaged in

18 reporting false data to trade publications that publish

19 price indices.

20 On December 18, 2002, the Commodities Futures

21 Trading Commission announced that it had reached a $5

22 million settlement with Dynegy and West Coast Power, LLC.

23 The sum of it stated that Dynegy had, quote, "knowingly

24 submitted false information to the reporting firms in an

25 attempt to skew those indexes to Dynegy's marketing and

1 trading financial benefit."

2 On November 8, 2002, the El Paso Corporation
3 announced that it had discovered evidence that one of its
4 employees had misreported trade data to the trade press. On
5 December 4, 2002, the United States Department of Justice
6 indicted Tom Gyger, a former Vice President of El Paso
7 Energy on charges of false reporting and wire fraud.

8 On January 13, 2003, El Paso issued a statement
9 saying it had found more instances of its traders providing
10 inaccurate information to inside FERC.

11 On October 9, 2002, BP announced that it had,
12 quote, "dismissed five employees involved in natural gas
13 trading and marketing, after the company determined that
14 they provided inaccurate price information for use in
15 indexes compiled and published by the trade publications.

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1 On October 25th, 2002, Williams announced it had
2 learned that natural gas price traders had provided
3 inaccurate information regarding natural gas trades to an
4 energy industry publication that compiles and reports index
5 prices. Williams stated that the inaccuracies came to light
6 during Williams' independent internal review of its trading
7 activities.
8 On November 4th, 2002, CMS announced that it was
9 conducting an internal review of the natural gas trade
10 information provided to the trade press by two subsidiaries,
11 CMS Marketing Services and Trading and CMS Field Services.
12 CMS stated that a preliminary analysis indicated that
13 employees had provided inaccurate data. CMS further stat d
14 that it would take appropriate disciplinary action and it
15 would stop providing information to the trade press.
16 In the future, Staff proposes that the Commission
17 require that certain minimum standards be met before natural
18 gas pipelines are permitted to use natural gas price indices
19 in new tariffs or for other new regulatory purposes.
20 Evidence for these new filings will need to be
21 presented and reviewed to assure that any price index meet
22 minimum index formation standards. In particular, the index
23 would need to represent an accurate reflection of the
24 market. To be approved, a new tariff containing a reference
25 to an index would need to be shown as demonstrating first

1 competence in the accuracy of price reporting, that is, the
2 ability to verify the reporting of deals actually done, not
3 simply aggregate opinions.
4 Second, adequacy of coverage, that is, the
5 ability to assure the collection of adequate information to
6 represent prices across the relevant marketplace well.
7 Third, information about market liquidity or some
8 insight into how much trading is going on at a particular
9 point in order to generate warnings from markets and
10 confidence for more liquid for verifiability, the ability to
11 ensure integrity of the process through independent review
12 through a trustworthy third party.
13 Staff suggests that only after assuring the
14 Commission that these conditions have been met, should the
15 natural gas pipelines be approved for use under the new
16 tariff. In summary, these reports raise serious doubts
17 about the accuracy of the information reported in many
18 natural gas price indices. The market cannot function
19 without accurate dependable trustworthy wholesale price
20 information.
21 The industry must take the lead in solving this
22 problem. Staff is tracking several efforts to develop new
23 approaches to solve it. Additionally, Staff proposes that
24 the Commission require any new pipeline tariff reference to
25 natural gas price indices be shown to meet the standards of

accuracy, adequacy of coverage, information about market liquidity and verifiability as outlined today.

Thank you.

CHAIRMAN WOOD: Thank you Steve. I appreciate the efforts that have gone on across the staff to look at this issue. It's unfortunately not a one-day story from what came out in August in the Staff's initial report in PA02 and the subsequent information, I do think it's fair to a caveat out there that all the reports that have come in, we're not sure what impact that those did have on natural indices that are being used by parties are being used for all proceedings but I think it's important for all of us to be ahead of that curve and to provide some leadership as to what part of the universe it applies to us, expecting full well that that same leadership will have repercussions for other uses of gas.

The gas transition from a highly regulated industry to a very competitive one is one of the great moments of this Agency's history and I want to make sure that the actions we take in 2002 do not erode the significant benefits for customers that have come as a result of FERC and Congressional initiatives in the gas industry. I do fear, however, that the erosion of confidence in the gas indices that has taken place in the past six months particularly, as this has come more and more

1 to public realization may well impede the benefits that
2 customers get from this industry working as well as it does
3 and I do look forward to constructive and thoughtful
4 solutions from parties across the board to resolve this
5 issue. And I'm pleased with Staff's thoughts in that regard
6 and hope that can help inform and frame the debate going
7 forward.
8 COMMISSIONER MASSEY: Thank you for this report.
9 Let me ask you a couple of questions. On page five, it says
10 in the future Staff proposes that the Commission require
11 that certain minimum standards be met before the natural gas
12 pipelines are permitted to use natural gas price indices in
13 new tariffs or for other regulatory purposes. What about
14 the existing purposes if these indices are inaccurate?
15 What are we to do? Do you have any recommendations?
16 MR. HARVEY: At this point, the industry does
17 have several initiatives looking at making revisions even as
18 we speak. Those changes potentially could improve, possibly
19 improve the performance of these indices. At this point,
20 it's not completely clear exactly what will happen with
21 regard to that kind of price formation. We have not spent
22 time looking at all the existing orders and determining
23 anything there.
24 COMMISSIONER MASSEY: I guess I was focused more
25 on the question of Commission policy with respect to the

1 existing use of indices that may not be accurate, existing
2 tariffs, thing that are already on the books that are being
3 relied upon. What should we do about that?
4 MS. GRANSEE: Commission Massey, I would assume
5 that to some extent we would rely on parties bringing
6 complaints before us if they feel that there's an unfairness
7 going on there. As we detailed here on I think it was page
8 two, where those are used, they're used in pipeline tariffs
9 now in fairly limited instances for cashouts and penalties.
10 Our policy all along on penalties has been that we hope
11 that, for the most part, penalties are never actually used.
12 I think the cashouts are used now to some extent but I think
13 that those are used in fairly narrow circumstances today.
14 Of course the Commission could also undertake
15 Section 5 action on a pipeline's tariffs but as you know, if
16 we did that, the Commission would bear the burden of proof
17 to change the company's tariffs at this point.
18 COMMISSIONER MASSEY: Thank you. A couple of
19 other questions. It seems to me that much of this paper
20 would also apply to spot electric indexes as well. We rely
21 and certainly the marketplace relies on a number of these
22 indices. COB, Paloverde, a number of others that are used
23 as pricing plans. They've been used in Commission orders
24 approving proposals to rely on those pricing points for
25 ancillary service transactions and other kinds of

1 transactions.

2 I have the same concerns with respect to the

3 accuracy of the electric indices, and wondered if your

4 looking at this and your reporting on this explored the

5 electric market as well, or did you limit yourselves to the

6 gas market?

7 MR. HARVEY: To my knowledge, we have not seen

8 public information with regard to electric price index

9 formation but certainly the formation would be similar and

10 some of the same concerns would apply because we did not

11 specifically look at it and we have not again, to my

12 knowledge, seen public information as we went through here

13 on natural gas indices with regard to electric. We did not

14 pursue that.

15 COMMISSIONER MASSEY: It would seem to me that

16 some of the same concerns would be applicable there too. I

17 suppose that once there's an RTO functioning in every region

18 of the country with transparent spot prices, locational

19 marginal pricing that we solve a lot of these problems for

20 the electric marketplace with respect to the validity of

21 electric power indices. Would you agree with that?

22 MR. HARVEY: Absolutely. A much clearer

23 resolution of price discovery.

24 COMMISSIONER MASSEY: The other question I have,

25 I was talking to Pat about this yesterday, is a question I

have about the involvement of the Energy Information Administration in gathering this data, gathering price information. At some point in the debate over this question for the past six months to a year, I know that issue was in play whether EIA would take this on as a responsibility, and I wanted to see what my colleagues know about that and see what Staff knows about that.

Is that a viable option? Is that a good idea, bad idea? What is your thinking about it.

CHAIRMAN WOOD: I met with the new administrator, Guy Caruso, about a month or so ago and I think certainly it's a resource issue for them and taking over the storage data has certainly been a challenge. You know, at that stage, I guess it was a little before some more of the dominoes kept coming. I think there's a strong institutional desire to have but I think we all know somebody on the government side of the fence has got to do it and we're going to have to talk about that.

Again I mentioned to them, I've got an open mind. This could perhaps be solved on the industry side of the fence, but quite frankly on the electric side, with order 2001, which we promulgated last year, we therefore have an underlying cushion that data come in from across the entire industry and that therefore the index is ultimately auditable, so we have to define it based on required data.

1 There are different roles that we need to play. I quite
2 frankly did not move down that path. It's just not a place
3 where it's quite as ripe as it is today.
4 COMMISSIONER BROWNELL: In answer to your
5 question and kind of part of where I would like to us go
6 with this, I for one think it's interesting. We've all read
7 the newspapers and we're glad people have stepped up to the
8 plate. But I haven't seen any substantive evaluation about
9 the scope of the problem, the history of the problem, the
10 impact of the problem and while I understand the press's
11 reluctance to share source information, that's a long
12 history in our country and I appreciate that. I think we
13 have a whole lot more work to do before we come to any
14 conclusions and so I would support aggressively pursuing
15 this and getting a better understanding of what the issues
16 really are before we try and provide an answer.
17 I'm assuming we're working with other agencies
18 who are also concerned about this issue. Is that correct?
19 MR. HARVEY: Yes, we have had some conversations.
20 COMMISSIONER BROWNELL: I think we did get 20 or
21 30 sets of recommendations in the process of the West-Wide
22 investigation, is that correct?
23 MR. HARVEY: I'm not exactly familiar with the
24 West-Wide investigation but I believe they have been
25 reported to have been discussing this issue.

COMMISSIONER BROWNELL: I would like to see us hold a technical conference in the not too distant future to really define the problem, maybe a cosponsored one with one of the other relevant agencies, and look at the range of solutions that have been recommended.

I know there are some industry initiatives. I think your set of recommendations reflects one of them but there is a problem and reading about it in the newspaper every day makes it more of a problem. I just wanted to understand how much more of a problem it was and what the impact really is so that we can craft a solution that is appropriate to that.

COMMISSIONER MASSEY: I agree with everything you just said.

CHAIRMAN WOOD: We will get ready if that's the right way to attack this. Any further questions or comments for Steve?

(No response.)

CHAIRMAN WOOD: Thank you for your efforts. We will continue to discuss this issue as days go forward. Anything else?

(No response.)

CHAIRMAN WOOD: Why don't we meet about 1:30. The Open Meeting is adjourned.

(Whereupon, at 12:35 p.m., the open meeting of

the FERC was adjourned.)

CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the FEDERAL ENERGY REGULATORY COMMISSION in the Matter of:

Name of Proceeding:

CONSENT MARKETS, TARIFFS AND RATES - ELECTRIC
CONSENT MARKETS, TARIFFS AND RATES - GAS
CONSENT ENERGY PROJECTS - HYDRO
CONSENT ENERGY PROJECTS - CERTIFICATES
DISCUSSION ITEMS
STRUCK ITEMS

Docket No.:

Place: WASHINGTON, DC

Date: JANUARY 15, 2003

were held as herein appears, and that this is the original transcript thereof for the file of the Federal Energy Regulatory Commission, and is a full correct transcription of the proceedings.

Official Reporter

Electric Power Information Resource ENERGY CENTRAL

Fed ral Regulators Want Natural Gas Firms to Show Prices Are Reliable

By David Ivanovich, Houston Chronicle -- Jan. 16

Federal regulators Wednesday recommended that natural gas companies be barred from tying pipeline rates to published price indexes until they can show that the price data is more reliable.

Responding to revelations that gas traders repeatedly lied to trade publications that compile the price indexes, staffers at the Federal Energy Regulatory Commission called for minimum standards to ensure the accuracy of this information.

"The natural gas industry cannot function without accurate, dependable and trustworthy wholesale price information," the staff report said.

The report left it to the industry to find a way to reach that goal.

While the three-member commission took no action Wednesday on the staff recommendations, they may hold a conference to discuss the issue further.

"I haven't seen any substantive evaluation of the scope of the problem, the history of the problem or the impact of the problem," Commissioner Nora Mead Brownell said after the meeting. "I think we have a lot of work to do before we come to any solutions."

Jim Keener, a spokesman for Platts, whose trade publication Inside FERC Gas Market Report was allegedly provided false data, said he looks forward to reviewing "all ideas that improve openness in energy markets."

For years, the energy trade publications have polled traders to learn what gas is selling for in each market. In exchange for that information, the publications typically pledge not to reveal the identities of the traders or their firms.

The industry then uses these indexes to calculate prices under its contracts. Oil producers use them to evaluate assets. And regulators use them when approving tariffs on gas pipelines.

Federal regulators began looking into the price indexes issue last year as part of their probe into the power crisis. The FERC is expected to release a final report on that investigation by the end of March.

Already, five energy firms -- Houston-based Dynegy, Houston's El Paso Corp., AEP, Williams and CMS -- have revealed that their employees provided false data to the trade publications.

Last month, former El Paso energy trader Todd Geiger was charged with false reporting and fraud in connection with misreporting price data. On Monday, prosecutors alleged that other El Paso employees had participated in a bogus reporting conspiracy.

Commissioner William Massey raised concerns Wednesday that the problems evident in gas price reporting might be found in the electric power business as well. Agency officials are investigating that issue as well.

Producers such as Houston-based Apache Corp. say they are suffering collateral damage from the uproar over the price indexes, because the uncertainty is making it difficult for lenders to evaluate deals.

"It's a tough enough chore to run a commodity-based business, because commodities by their very nature have ups and downs in the price," noted Obie O'Brien, Apache's director of governmental affairs. "It's almost impossible when you have no confidence in the price whatsoever."

To try to restore confidence in the price indexes, agency staffers proposed developing some kind of system that would allow a third party to verify the reported pricing data. They also want to make sure the reported information provides an adequate sampling of a given market.

The staff members did not explain how these objectives might be accomplished, noting, "The industry must take the lead in solving this problem."

Platts has proposed that companies providing data for indexes have a senior executive certify the information. Rather than rely on traders, Platts would insist an energy firm's back office provide the data. And it would insist an energy company specify the companies involved and the time of a transaction.

Because of First Amendment protections, the FERC may have little direct authority over energy trade publications to force them to change their index reporting practices.

The staff recommendations take a less direct approach, essentially barring the indexes' use for regulatory purposes unless their accuracy is better assured.

Commission Chairman Pat Wood III said he has discussed the possibility of asking the U.S. Energy Information Administration to collect the pricing data, but EIA officials questioned whether they have the manpower.

O'Brien argues that the Energy Regulatory Commission itself should collect the data to ensure its accuracy.

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SENATE SELECT COMMITTEE TO INVESTIGATE

PRICE MANIPULATION OF THE WHOLESALE ENERGY MARKET

HEARING RE: NATURAL GAS INVESTIGATION UPDATE

STATE CAPITOL

ROOM 112

SACRAMENTO, CALIFORNIA

MONDAY, NOVEMBER 18, 2002

10:25 A.M.

Reported by:

Evelyn J. Mizak
Shorthand Reporter

APPEARANCES

MEMBERS PRESENT

SENATOR JOSEPH DUNN, Chair

SENATOR WES CHESBRO

SENATOR K. MAURICE JOHANNESSEN

MEMBERS ABSENT

SENATOR DEBRA BOWEN

SENATOR MARTHA ESCUTIA

SENATOR BETTY KARNETTE

SENATOR SHEILA KUEHL

SENATOR WILLIAM MORROW, Vice Chair

SENATOR BYRON SHER

STAFF PRESENT

IRMA MORALES, Committee Assistant

LARRY DRIVON, Special Counsel to Committee

ROBERT PRATT, Legislative Counsel

CHRIS SCHREIBER, Consultant

ALEXANDRA MONTGOMERY, Consultant

RONDA PASCHAL, Consultant

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The Brattle Group
Economic, Environmental & Management Counsel
Cambridge, Massachusetts

MATTHEW P. O'LOUGHLIN, Principal
The Brattle Group
Economic, Environmental & Management Counsel
Cambridge, Massachusetts

TRINA HORNER, Advisor to President LORETTA LYNCH
California Public Utilities Commission

BILL JULIAN, Advisor to Commissioner CARL WOOD
California Public Utilities Commission

MICHELE MARKEY, Director of Natural Gas
Apache Corporation
Houston, Texas

MATTHEW KIRTLAND, Attorney for Ms. Markey
Fullbright and Jaworski

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13 [Thereupon the witness,
14 MICHELE MARKEY, swore to
15 tell the truth, the whole
16 truth, and nothing but the
17 truth.]
18 CHAIRMAN DUNN: Counsel, for the record can you
19 identify yourself as well.
20 MR. KIRTLAND: Yes, Matthew Kirtland from
21 Fullbright and Jaworski.
22 CHAIRMAN DUNN: And, Mr. Kirtland, you're here
23 representing Ms. Markey, I understand?
24 MR. KIRTLAND: That's right.
25 CHAIRMAN DUNN: If you would, Ms. Markey, can you
26 please state and spell your name, and give us your business
27 address.
28 MS. MARKEY: Michele, M-i-c-h-e-l-e, Markey,
0091
01 M-a-r-k-e-y. My business address is 2000 South Post Oak
02 Boulevard, Suite 100, Houston, Texas, 77056.
03 CHAIRMAN DUNN: Ms. Markey, what I'd like to do,
04 we want to cover some of the background, employment history, and
05 other material. So, why don't I pose as a first question, if
06 you could give us some of the history, educational and
07 professional history, if you will, please.
08 MR. KIRTLAND: At this time, Senator, as Ms.
09 Markey's attorney, I'm going to instruct her to refuse to
10 provide any testimony or further information to the Committee on
11 the basis of her privilege against self-incrimination. That
12 would include answering any further questions, or providing any
13 documents to the Committee.
14 CHAIRMAN DUNN: Counsel, just for clarification
15 so we understand, your instruction to her, therefore, will apply
16 to any further questions to her by this Committee?
17 MR. KIRTLAND: Yes, or production of documents.
18 CHAIRMAN DUNN: Ms. Markey, is it fair to assume
19 that you intend to follow the instructions of your counsel?
20 MS. MARKEY: Yes, I do.
21 CHAIRMAN DUNN: As you're probably aware, we've
22 had discussions with your counsel regarding this possibility,
23 Ms. Markey.
24 Under Government Code Section 9410, when a
25 witness appears before a committee or a sub committee of this
26 type that has a quorum present, I as the presiding officer, have
27 the ability to compel that testimony, despite your claim of
28 self-incrimination.
0092
01 But under that same Government Section, Code
02 Section 9410, you are conferred as a result of my requiring you
03 to testify certain immunities which your counsel is familiar
04 with.
05 So, with a quorum present here in our
06 subcommittee, and with no objection from the Committee members,
07 as presiding officer I hereby instruct you to answer those
08 questions, and of course, confer upon you all of the rights
09 identified in Section 9410.
10 MS. MARKEY: Yes, sir.
11 CHAIRMAN DUNN: It's my understanding, correct me
12 if I'm wrong, you are here today as a result of a subpoena
13 served upon you here in the State of California. Is that
14 correct?
15 MS. MARKEY: That is correct.
16 CHAIRMAN DUNN: And as a result of that subpoena,
17 which not only asks for your personal presence, but also for
18 documents, do you have documents that you have brought with you
19 today?

MS. MARKEY: Yes, we do.
CHAIRMAN DUNN: If I may, Sergeant, if you'd give a copy of those to the Sergeant.
Counsel, just so our record is clear, obviously, your instructions apply to every future question, and the same rights and responsibilities under Section 9410 apply to Ms. Markey as well for every future question here as we proceed forward.
MR. KIRTLAND: Correct. The questions,

0093

testimony, documents, the presentation of the Power Point slides; correct.
CHAIRMAN DUNN: Agreed counsel.
MR. KIRTLAND: Just so you're clear as to what we've given you as documents responsive to the subpoena. There's a brief index on top of the documents, as well as copies of additional materials that will be part of the Power Point presentation.
CHAIRMAN DUNN: All right.
Why don't we begin, then, Ms. Markey, if I can, and return to the original question I asked before we started down this route.
Can you give is a little bit of your background, education, and professional, starting with 1994?
MS. MARKEY: In 1994, I was working as a fuel buyer for Nevada Power. In 1996 to '97, I worked for a fuel buyer as well as transportation capacity specialist for Washington Natural Gas, which is now Puget Sound Energy.
In 1997 to 1998, I worked as a West Desk trader for Reliant Energy Services, although at the time it was known as Noram Energy Services.
CHAIRMAN DUNN: I'm sorry. It was known as --
MS. MARKEY: Noram Energy Services.
CHAIRMAN DUNN: Can you spell that for us?
MS. MARKEY: N-o-r-a-m.
And then in 1998, I went to a company by the name of Resource Data International, which was a division of the Financial Times, and was responsible for data base management

0094

for gas industry information.
In March of 2002, this year, I left the organization for personal reasons, and then ultimately ended up becoming a consultant for two months, working for Apache Corporation. In June of this year, I became the Director of Natural Gas for Apache Corporation.
CHAIRMAN DUNN: Ms. Markey, it's my understanding, given the comments of Counsel, that you have a prepared presentation for the Committee today; is that correct?
MS. MARKEY: Yes, I do.
CHAIRMAN DUNN: Why don't we go right into your prepared presentation.
MS. MARKEY: Happy to.
CHAIRMAN DUNN: And as you may have been sitting through some of the other witnesses, speak right into the mike, because that way everyone's going to hear you.
MS. MARKEY: I'll put it right next to my mouth.
CHAIRMAN DUNN: Perfect.
MS. MARKEY: I'm going to open up actually two presentations, ones that you've given out to everyone today, in addition to some of the documents that were created from the information that you've been provided just a few minutes ago.
CHAIRMAN DUNN: Before you begin.
MR. DRIVON: Before you begin, you indicated that for a period of time you were with Resource Data International.
MS. MARKEY: Correct.

27 MR. DRIVON: What were your duties there?
28 MS. MARKEY: Originally I was hired to create a
0095
01 data base of natural gas industry information. After May of
02 1998, when the company acquired Pasha Publications, which
03 included Gas Daily and Megawatt Daily, I was put in charge of
04 the gas price and electric price teams that gathered information
05 from the industry.
06 MR. DRIVON: And this information that was
07 gathered from the industry and accumulated there, you were in
08 charge of the groups that did that for both gas and electricity?
09 MS. MARKEY: That is correct.
10 MR. DRIVON: And these data that were gathered,
11 as I understand it, were then accumulated, indexed and published
12 in the publications Gas Daily and Megawatt Daily, made available
13 to the industry and everyone else?
14 MS. MARKEY: Well, if you had a subscription,
15 that's how you received it.
16 MR. DRIVON: Right. You could get a
17 subscription, and then you would get these publications.
18 MS. MARKEY: That is correct.
19 MR. DRIVON: And I think I saw you here in the
20 audience when the PUC people were testifying a few minutes
21 ago.
22 MS. MARKEY: That is correct.
23 MR. DRIVON: And a number of references have been
24 made to price indexes. Did you hear them talk about that?
25 MS. MARKEY: Yes, I did.
26 MR. DRIVON: And if I understand it correctly,
27 Ms. Markey, your job was to accumulate, assimilate, catalogue
28 and index those price data, which were then published as the
0096
01 very indexes that the PUC people were talking about; correct?
02 MS. MARKEY: The price reporters who reported to
03 me acted in that function, but I managed the group.
04 MR. DRIVON: All right. And it was the very data
05 that you were managing, or the group that you were managing that
06 produced this data, that were then published, that provided the
07 indexes that set all of these price points and various reference
08 points that the PUC folks were talking about a minute ago;
09 correct?
10 MS. MARKEY: That is correct.
11 MR. DRIVON: That was your job, and you were
12 sitting right there in the middle of it?
13 MS. MARKEY: Yes, I was.
14 MR. DRIVON: Thank you.
15 CHAIRMAN DUNN: Please proceed, Ms. Markey.
16 MS. MARKEY: This is a presentation that I gave
17 for a group by the name of TIPROA, Texas Independent Producers
18 and Royalty Owners Association, in June of this year. And what
19 it was -- and I'm going to switch over to a slide presentation
20 so you can see this easier.
21 I actually gave the history of the price survey.
22 I actually walked through the processes that were involved. And
23 I thought I could just start doing that for y'all as well in the
24 same way that I did for the TIPROA Convention.
25 CHAIRMAN DUNN: Please.
26 MS. MARKEY: We started out with the history of
27 the price survey, and both Inside FERC -- by the way, Inside
28 FERC is a Platts publication, and Gas Daily was acquired by
0097
01 Platts in August of 2001.
02 Originally, when both publications formed in
03 1985, they were originally only to report physical monthly firm
04 transactions. As more trading companies came into the business,

05 we created daily weighted averages, which ultimately became the
06 standard method of reporting swing gas as well as establishing
07 what the spot market value of gas should be.
08 From these, quite a number of financial
09 instruments were created, such as Gas Daily versus Inside FERC
10 basis swaps, or Gas Data Chicago versus Henry Hub basis swaps.
11 This map actually shows all the various
12 different locations where you could actually price gas. At the
13 time that this map was created back in June, there were
14 approximately 115 Gas Daily pricing points, including four in
15 the state of California, which would be Malin, PG&E's Citygate,
16 PG&E large packages, and PG&E large packages [sic].
17 I actually went into two different breakouts
18 about how a monthly baseload price would be established, as well
19 as how a Gas Daily daily price would be established. The
20 monthly average index, I think in earlier testimony I believe
21 The Brattle Group indicated that 50 percent of baseload gas was
22 based on indices, whereas 50 percent of gas was based on a daily
23 spot market price.
24 This procedure here actually describes how the
25 monthly baseload was created, and survey participants were
26 roughly 50 percent marketers, 25 percent producers, and
27 approximately 25 percent utilities and end users.
28 The sample size, frankly, is smaller than what --
0098
01 CHAIRMAN DUNN: If I may, Ms. Markey, and our
02 pardons as we interrupt you along the process.
03 MS. MARKEY: That's quite all right.
04 CHAIRMAN DUNN: We're trying to gain an
05 understanding here as well, too. I just want to make sure
06 everybody is understanding.
07 You say 50 percent are marketers. Give us some
08 representative examples of who those marketers applies to.
09 MS. MARKEY: Enron, Duke, Reliant, El Paso
10 Mirant, AEP, Williams.
11 CHAIRMAN DUNN: And producers?
12 MS. MARKEY: Producers such as Conoco, Unidelco,
13 Burlington.
14 CHAIRMAN DUNN: And utilities and end users, just
15 again, representative samples?
16 MS. MARKEY: Again, SoCal Gas might be one, InTex
17 in Houston, some of the other independents -- excuse me, other
18 utilities. It just depended on who wanted to talk to us that
19 day.
20 CHAIRMAN DUNN: Thank you.
21 MS. MARKEY: Inside FERC, as opposed to Gas
22 Daily -- by the way, there were two monthly indexes at the
23 time. There was a Gas Daily monthly index and an Inside FERC
24 index.
25 When we were acquired by Platts, Inside FERC made
26 a note that they did archive all their transactions from the
27 inception of when they started collecting prices. That was not
28 the case for Gas Daily.
0099
01 And all transactions are reported in aggregated
02 volumes rather than their individual trades. And counterparties
03 are rarely given.
04 MR. DRIVON: Let me nail something down.
05 What you're telling me is the that you have
06 direct information that Inside FERC actually archived their
07 information, and at least when you last knew, had that
08 information available; correct?
09 MS. MARKEY: That is correct.
10 The daily spot market basis was a little
11 different, in that there were many more points that were

12 collected on a daily basis, and the volumes were substantially
13 greater than what you normally would see in a monthly baseload.
14 Marketers actually played a much larger portion
15 in reporting, anywhere from between 60 to 80 percent of all
16 their transactions at certain locations.
17 One of the things about the daily transactions is
18 that it would include both purchases and sales. There was no
19 distinction made between one or the other, and often both were
20 included.
21 Again, there were no party -- counterparties to
22 the transactions.
23 Price reporters were or did have the authority to
24 investigate and call all questionable transactions if
25 necessary.
26 This next slide actually shows three different
27 particular pricing points. I'll actually have an overlay of
28 each specific point in California. But this actually is showing
0100
01 the volume growth in selected Gas Daily points for how much
02 volume was reported to Gas Daily.
03 Gas Daily began collecting volumes in 1999, and
04 as you can see by the chart, as you get into the 2000-2001
05 period, volumes for various different points escalated
06 tremendously.
07 MR. DRIVON: I saw this graph earlier. Let's see
08 if we can get it identified so that folks out there will know
09 what we're talking about.
10 MS. MARKEY: It says "Daily Average Reported
11 Volumes for Selected Gas Daily Points." Yes, that's the one.
12 MR. DRIVON: What I was wondering when I saw this
13 chart was, over here on this side of the chart?
14 MS. MARKEY: Yes.
15 MR. DRIVON: You've got good eyes? I mean,
16 that's a long way.
17 MS. MARKEY: I've got one right here in front of
18 me.
19 MR. DRIVON: Up until, oh, somewhere around April
20 or May of 2000, the reported volumes are kind of steady across
21 here.
22 MS. MARKEY: That's correct.
23 MR. DRIVON: And this is gas that's being
24 supplied and presumably used by somebody who's, like, heating
25 their house, or creating electricity, or something?
26 MS. MARKEY: Most of the volume at the time that
27 I was aware of was supposed to represent physical spot
28 transactions.
0101
01 MR. DRIVON: Then it all goes way up.
02 MS. MARKEY: Correct.
03 MR. DRIVON: Does this mean that -- does this
04 represent people around the country turning up their thermostat?
05 It looks to me like if everybody was happy when
06 we were down here, and then it took this much volume of gas to
07 make everybody happy, were they baking potatoes on their coffee
08 table? Or how high did they have to have their thermostat in
09 order to need that much electricity or gas?
10 MS. MARKEY: This volume was actually -- only
11 represented the volumes that were reported to Gas Daily as
12 volumes traded, not necessarily usage.
13 MR. DRIVON: So, this just represents what
14 appears to be a very big increase in the trading of natural gas,
15 not the actual production, supply, or usage of natural gas?
16 MS. MARKEY: That is correct.
17 MR. DRIVON: We'll leave the rest of the
18 questions for awhile.

19 MS. MARKEY: The next slide, and I won't get into
20 too much explanation. This is just kind of a representative
21 trade floor, and how the various different groups were broken
22 up. And at the core was your Risk Management Group, where most
23 information flowed in and out of in order to keep track of daily
24 trades, daily transactions, market-to-market, accounting,
25 invoicing.
26 But you can see the various different types of
27 groups that would feed information on through and past the Risk
28 Management Groups.
0102
01 This is just a description of a typical trade day
02 on the floor. The trading day in Houston typically starts
03 between 6:30 and 7:30 in the morning. Traders would normally
04 come into the office and review their Gas Daily prices, weather
05 reports, and determine what their open positions were for any
06 imbalance from the day before.
07 Approximately about towards from, what I've been
08 told, right around 2000, quite a number of traders also would
09 use Enron On Line as their starting point as to what the market
10 showed for bid asked for various different points in the market.
11 About the time I left Reliant, instant messaging
12 was also a form of communication as to what was going on in the
13 market. So, people could flip information back as forth very
14 quickly about what they heard as far as prices, or what kind of
15 deals were transacted during that particular time of the
16 morning.
17 By the -- about 8:00 o'clock, after the trade
18 floor would have its group meeting to talk about various things
19 in the market and what the overall company position was, you'd
20 immediately begin trading, which would go until about 9:00 or
21 9:30.
22 Now, this was based on when I was a trader, but
23 typically most traders were doing anywhere between 5 and 20
24 deals during that particular period of time, primarily either
25 through the instant messaging, or being on the phone. If there
26 were any particular paper trades, you would go ahead and net
27 those out. Paper trades meaning trades that were never intended
28 to physically flow; they were just netted financial instruments
0103
01 to either book profit or book loss.
02 Then any physical trades that were done that had
03 to be scheduled were then passed on to a scheduler, who would
04 then have to get them into the pipeline bulletin boards for them
05 to be scheduled. I think you heard earlier The Brattle Group
06 refer to it as making nominations.
07 And then any hedges that had to be done at that
08 particular time were normally conducted by the Structures Desk
09 or by the Risk Management Group, either by selling futures or by
10 selling OTC financials.
11 This was -- I'm sorry.
12 CHAIRMAN DUNN: Senator Johannessen.
13 SENATOR JOHANNESSEN: I'm sorry to interrupt you.
14 So basically, all this was done as a commodity
15 market. That's basically what this was. It was treated as a
16 commodity market.
17 MS. MARKEY: Yes, sir.
18 SENATOR JOHANNESSEN: You were trading like it
19 would be a commodity market.
20 MS. MARKEY: Yes, sir.
21 SENATOR JOHANNESSEN: And this is something that
22 apparently hadn't happened before, or on a much smaller scale?
23 MS. MARKEY: I believe that starting in the early
24 '90s, when the New York Mercantile Exchange created the Henry
25 Hub NYMEX contract, that that's approximately the time you can

26 say that the natural gas markets began to act like a commodity,
27 and it escalated throughout the '90s into 2000.
28 SENATOR JOHANNESSEN: And the relationships
0104
01 between the various players in this commodity market, there was
02 no control over who had the ability, legal ability, to inform
03 the various partners in this consortium, if you will, in the
04 commodity market what to do, when to do it, how to do it, and
05 what potential benefit there would be to do it.
06 MS. MARKEY: I'm sorry, Senator. I don't think I
07 understand your question. I'm sorry.
08 SENATOR JOHANNESSEN: I'm trying to figure out
09 why all these spikes took place.
10 MS. MARKEY: Yes, sir.
11 SENATOR JOHANNESSEN: We have heard testimony
12 that some of these things was information that was internal; it
13 should not be out because of contractual agreements and so
14 forth.
15 Did anyone pay attention to this kind of a thing
16 when you made all these calls, and contacts, and market
17 analysis, if you will, in deciding what the price should be on
18 any given day?
19 MS. MARKEY: During the time I was a trader, we
20 would certainly be on the phone with other traders and passing
21 along market intelligence, whether it was truthful or not. We
22 would certainly rely on each other's discussions about the
23 market, and where we thought the market was going. And you
24 certainly conducted all your market intelligence via the phone
25 or instant messages if that's what you're referring to.
26 SENATOR JOHANNESSEN: Right. Thank you. I think
27 I understand that one.
28 CHAIRMAN DUNN: Let me, if I can, interrupt, Ms.
0105
01 Markey, just as a follow-up to Senator Johannessen's comments.
02 Given what you just responded, in your opinion is
03 it common practice for the traders to exaggerate the prices when
04 reporting to the indices?
05 MS. MARKEY: It was common industry knowledge
06 that exaggeration was an accepted practice.
07 CHAIRMAN DUNN: Do you have an opinion on how
08 common it probably was?
09 MS. MARKEY: In all my discussions with any other
10 traders where this topic has come up, no one acted shocked over
11 the topic. It was discussed.
12 CHAIRMAN DUNN: Okay.
13 MS. MARKEY: This next example is just basically
14 a very plain vanilla walk-through of how typically a company
15 would trade with another company or companies, and then how it
16 would end up reporting the transactions to Gas Daily. And
17 again, we're talking about the period that would normally occur
18 from about 7:00 or 8:00 in the morning until about 9:30 in the
19 morning.
20 So, you have a trader for one company goes and
21 buys 25,000 MMBtu from another company at $4.30 at a particular
22 major trading hub. That company would then turn around and sell
23 it to Company C for $4.40 and book a profit. And typically,
24 this was what was referred to in the trade as a paper trade,
25 because you never you never intended to schedule this.
26 Finally, Company A may buy back, or goes out and
27 buys 55,000 a day at $4.35 to cover a short position. Typically
28 the short position was created by some kind of hedge or
0106
01 financial instrument. For instance, one of the more popular
02 types of trades that were done is to sell what's known as a GDA,
03 or a Gas Daily Average. A lot of the utilities like to buy

these types; industrials like to buy these types of trades. They also like to buy a lot on the index. I think we heard that earlier from the CPUC.

So, the trader may sell short. In other words, he may sell gas to the utility or to the industrial that he doesn't necessarily have, but he's going to buy that gas back every day at a fixed price, and it's going to be then delivered against that short-sale index sale made to either the utility or to the industrial.

MR. DRIVON: Wait a minute now.

You're talking about establishing a tradeable derivative that is the Gas Daily index. Is that what you just said? In other words, some folks would buy and sell the index?

MS. MARKEY: Yes, that's correct.

MR. DRIVON: So then, that would be one type of derivative product that might be used as a traded commodity?

MS. MARKEY: That is correct.

MR. DRIVON: And that particular commodity, the value of that particular commodity, by its definition, was defined by the same publication that reported prices where exaggeration was an accepted practice; is that right?

MS. MARKEY: The Gas Daily index was a collection from various different marketers who may have sold on a Gas Daily index value, or bought on a Gas Daily index value.

MR. DRIVON: And reported those sales or

0107

purchases?

MS. MARKEY: That is correct.

MR. DRIVON: At a value that may have been accurate or, as you testified a few minutes ago, was commonly inflated?

MS. MARKEY: That is correct.

MR. DRIVON: And if someone was trading that particular derivative commodity, and that same entity was involved in reporting sales and purchases, then the reported sales and purchases could easily be used to manipulate the very index that they were trading as a derivative; correct?

MS. MARKEY: That is possible, yes.

MR. DRIVON: So by trading these derivatives and reporting the prices, these folks could just sort of decide how much money they wanted to make, and then just manipulate it around so they made it. Does that follow?

MS. MARKEY: Well, I would say that if they reported prices that were extremely out of the money, meaning out of the price range, that it would be called into question by the price reporter. It was supposed to be called into question by the price reporter.

So, you didn't want to appear too far out if you reported a transaction. But it is possible for a company to have reported a volume and a price that was within a given price range for the day that could influence what the index would have been for next day when the index came -- was published.

MR. DRIVON: Because it's a weighted average.

MS. MARKEY: Yes, it is a weighted average.

0108

MR. DRIVON: So, two ways to manipulate that average. One would be, you just say it cost more, or you paid more than you actually did.

MS. MARKEY: You could do that.

MR. DRIVON: The other way to do it, because it's a weighted average, would be to just say you either bought or sold a whole lot more than you really bought or sold.

MS. MARKEY: That is possible.

MR. DRIVON: And not only is that possible, but I think as your testimony goes on today, you intend to illustrate

11 and document exactly that happening. Isn't that true?
12 MS. MARKEY: I'll show an instance -- several
13 instances where I think it might have happened, yes.
14 MR. DRIVON: Thank you.
15 MS. MARKEY: Continuing on with the example,
16 this particular company would have added all the volume of the
17 various transactions up and created a weighted average, and then
18 reported that average to Gas Daily.
19 And reporting took place in several different
20 ways, either by phone conversation, by fax, or by e-mail.
21 And if you looked at all the transactions
22 reported by other companies, you can see, a third down, the --
23 in this particular example, the company that traded, and their
24 volume reported, and how it would become averaged in to create
25 the weighted average midpoint that was then published in the
26 following day's publication for Gas Daily.
27 These are basically the various ways that you
28 were just alluding to, how trades might be reported, and any
0109
01 type of differences they may report in order to change the
02 index.
03 Common practice was to exaggerate your
04 transactions to the price reporters, report more volume, report
05 a higher price than that was actually transacted. You stretched
06 your price in favor of what the company's position was, or don't
07 report at all, because you would know whether or not your
08 indices -- your volumes and price could in fact affect the
09 index.
10 Finally, transactions that were originally done
11 at hedges -- as hedges at special prices could be considered
12 part of the normal spot market activity done that day.
13 Typically that should not have been included, but it was
14 possible that people could have.
15 CHAIRMAN DUNN: Ms. Markey, I want to interrupt
16 with a few questions at this point. I want to zero in on that
17 slide that we just did on "How Well Do Trades Get Reported."
18 MS. MARKEY: Yes.
19 CHAIRMAN DUNN: Again, I know you are intimately
20 familiar with how all of this operates. Most of the rest of us
21 are not.
22 MS. MARKEY: Yes.
23 CHAIRMAN DUNN: And so, I want to ask some
24 questions that may seem kind of basic from your perspective, and
25 my apologies --
26 MS. MARKEY: Sure.
27 CHAIRMAN DUNN: -- but we want to make sure we
28 have a full understanding.
0110
01 Can you explain in as lay terms as possible how
02 was it a trader could exaggerate transactions to manipulate the
03 index? How could they do that?
04 MS. MARKEY: Well, you never knew exactly how
05 much you were going to affect the market. Most of the time you
06 would trade a volume. And let's say it was 100,000 MMBtus at
07 $2. You might report double that volume, 200,000 MMBtus at $4.
08 You could, instead of reporting $2, you could say,
09 well, I'm going to report -- you've heard what the price range
10 is for the day, and you know it's between 1.95 and 2.10. And
11 depending on what your position is, you report either the lower
12 end or the higher end as the price that you did your
13 transactions at rather than the actual price.
14 CHAIRMAN DUNN: When you say, "depending upon
15 your position," what do you mean by that?
16 MS. MARKEY: Well, depending on whether you're
17 long or short the Gas Daily average, or the Inside FERC average,

18 because what you to do is, is you want to, the next morning,
19 make sure that your market-to-market position based on whatever
20 the index comes out is, is in your favor.
21 CHAIRMAN DUNN: So, if I'm long, what would I
22 like to see the next morning?
23 MS. MARKEY: I would like to see higher prices.
24 CHAIRMAN DUNN: And if I'm short?
25 MS. MARKEY: You'd like to see lower prices.
26 CHAIRMAN DUNN: So, what you're saying is that a
27 trader could exaggerate, either inflated or deflated, its
28 reporting to the indices which could affect that average price?
0111
01 MS. MARKEY: That is correct.
02 CHAIRMAN DUNN: And can you give us other
03 examples of exaggerations? I know you touched upon some, but
04 any others that you could share with us, again, for us to come
05 to an understanding?
06 MS. MARKEY: If you didn't like where the market
07 went that day, and you know your volumes are significant, and
08 you don't want to influence the market adversely in your favor,
09 you just won't report.
10 Or, you'll look at your day's volume, and you
11 selectively pick out trades that would be more like in your
12 favor so that you could say that, yes, now I've reported volumes
13 and prices that in fact I did trade at, but you didn't include
14 all of them.
15 CHAIRMANN DUNN: While at Gas Daily, were you
16 aware of any complaints regarding the accuracy of the daily
17 index?
18 MS. MARKEY: Yes, I was.
19 CHAIRMAN DUNN: What type of entities were making
20 these complaints?
21 MS. MARKEY: Actually it was various. Primarily
22 a lot of the end users would come to us.
23 Primarily during the fourth quarter of 2000 and
24 2001, we did have a number of end users complain, but we also
25 had a lot of marketing companies complain.
26 CHAIRMAN DUNN: Can you give us some examples of
27 who you're referring to when you say end users that would have
28 complained?
0112
01 MS. MARKEY: There were end users such as
02 utilities, a couple of the industrials called. I don't recall
03 specifically right off the top of my head who they were, but the
04 utilities were primarily the ones who called fairly -- fairly
05 regularly.
06 CHAIRMANN DUNN: And if I understand what you
07 said, the last quarter 2000 and early 2001 were a time of heavy
08 complaints; is that fair?
09 MS. MARKEY: That's a fair statement.
10 CHAIRMAN DUNN: And can you tell us, what would
11 they be saying in their complaints?
12 MS. MARKEY: Well, we received a complaint from
13 one company that, in early January, that said that your prices
14 were outrageously high. There's no way that the market could
15 have traded that, and we really want you guys to go back and
16 investigate who the larger players were, and how those high
17 prices were actually traded.
18 CHAIRMAN DUNN: Did Gas Daily do anything about
19 those complaints?
20 MS. MARKEY: We contacted the companies in
21 question and demanded to see their individual transactions.
22 CHAIRMAN DUNN: Would they produce those
23 individual transactions to Gas Daily?
24 MS. MARKEY: No, they didn't.

25 CHAIRMAN DUNN: Was there any additional
26 follow-up, other than a request for the individual data that was
27 not complied with? Was there any further follow-up by Gas
28 Daily?
0113
01 MS. MARKEY: No.
02 MR. DRIVON: In that regard, ma'am, as I
03 understand it, or as I have at least heard, there was some
04 movement toward performing an audit on that information at this
05 point; is that correct?
06 MS. MARKEY: Yes.
07 MR. DRIVON: And this would have been an audit
08 that would have investigated the accuracy of the very pricing
09 information that you're talking about; correct?
10 MS. MARKEY: That is correct.
11 MR. DRIVON: And if I understand it correctly,
12 you were a proponent of that audit; is that correct?
13 MS. MARKEY: Yes, I was.
14 MR. DRIVON: You were trying to do your best to
15 get that issue resolved.
16 MS. MARKEY: Yes, I was.
17 MR. DRIVON: And at that time, did you understand
18 by reason of your position and background what the impact was if
19 those price reports and indexes were wrong?
20 MS. MARKEY: Yes, I did.
21 MR. DRIVON: And that was part of your motivation
22 for pushing for this audit; isn't that true?
23 MS. MARKEY: That is correct.
24 MR. DRIVON: If I understand it correctly, an
25 audit -- a profile and procedure was drawn up; correct?
26 MS. MARKEY: That is correct.
27 MR. DRIVON: And an auditor was chosen?
28 MS. MARKEY: Yes.
0114
01 MR. DRIVON: That auditor was Price-Waterhouse-
02 Cooper?
03 MS. MARKEY: That is correct.
04 MR. DRIVON: And contracts, preliminary
05 contracts, were formed and drawn to have that audit done; isn't
06 that true?
07 MS. MARKEY: Yes.
08 MR. DRIVON: And then, before that audit could be
09 instituted and started, there was a change in the ownership of
10 the publication; is that correct?
11 MS. MARKEY: That is correct.
12 MR. DRIVON: And if I understand it correctly,
13 the prior ownership, or ownership up until that change, had been
14 supportive of your idea that an audit should be done; isn't that
15 true?
16 MS. MARKEY: That is correct.
17 MR. DRIVON: And the change in ownership occurred
18 when?
19 MS. MARKEY: August, 2001.
20 MR. DRIVON: August of 2001. And when that
21 change in ownership took place, what, if anything, happened with
22 respect to that audit?
23 MS. MARKEY: Nothing happened.
24 MR. DRIVON: Was the audit carried out?
25 MS. MARKEY: No, it wasn't.
26 MR. DRIVON: Were the contracts cancelled?
27 MS. MARKEY: They were never followed through on.
28 MR. DRIVON: They were never signed?
0115
01 MS. MARKEY: That is correct.
02 MR. DRIVON: So, the audit in effect, as of the

03 time that ownership of the publication changed, was just
04 quashed; is that correct?
05 MS. MARKEY: It never went through.
06 MR. DRIVON: Yeah. And at that time, one of the
07 primary suspects with respect to improper reporting was Enron,
08 and particularly its on-line operation; isn't that true?
09 MS. MARKEY: Enron On Line was the party we were
10 going to audit, yes.
11 MR. DRIVON: And the publication was purchased by
12 the same group that owns Inside FERC; correct?
13 MS. MARKEY: That is correct.
14 MR. DRIVON: Thereby consolidating the reportable
15 indexing of these prices under that single ownership; correct?
16 MS. MARKEY: Correct.
17 MR. DRIVON: And would you please tell us,
18 please, who the number one customer for their services was at
19 that time when you were about to investigate Enron's price
20 reporting?
21 MS. MARKEY: Enron.
22 CHAIRMAN DUNN: Please continue.
23 MS. MARKEY: This is an example, again, when I
24 gave the presentation, I didn't specify what this location was
25 nor the date, but this happens to be a SoCal Gas large packages
26 location, which y'all commonly refer to as Topock.
27 And what I did was, and I believe it was for
28 May 5th, 2001. What this chart represents for every single
0116
01 price point, it delineates each company total transaction
02 volumes reported for that price.
03 And you can see there's a fair number of volumes
04 reported, of which there is one very large transaction of about
05 905,000 MMBtus at $12.30. On that particular day, the total
06 volume reported at SoCal Gas packages at Topock was 2.66 bcf, so
07 it's roughly a third of the volume that was reported at that
08 particular location for that day.
09 The Daily Midpoint with the volume included in
10 there was $12.385.
11 If you go to the next slide, and you remove that
12 transaction, you would see that the value would have gone from
13 $12.385 to a midpoint of $12.43. Again, this would have -- the
14 original midpoint would have benefitted somebody who was
15 actually short in the market.
16 MR. DRIVON: That would have benefitted them by
17 what, five cents?
18 MS. MARKEY: By five cents.
19 MR. DRIVON: I mean, five cents.
20 MS. MARKEY: Doesn't sound like much, unless
21 you're a trader. And if you calculate out, somebody who has a
22 substantial position --
23 MR. DRIVON: Five cents over the volumes that
24 we're talking about on a yearly basis would be what, about $28
25 million?
26 MS. MARKEY: Yes, I believe that's what we have
27 on our next slide.
28 So, if you consistently reported, over or under
0117
01 reported by a nickel at one single price point, with a volume
02 that was consistently traded at that location, the annual change
03 in value would have been $28 million.
04 MR. DRIVON: But, of course, that's only one of
05 115 natural gas spot market price points; correct?
06 MS. MARKEY: That's correct.
07 MR. DRIVON: So, if the over and under reporting
08 and misreporting averaged a nickel --
09 MS. MARKEY: Right.

10 MR. DRIVON: We would multiply the 28 million,
11 and it occurred in all the price points, we made that
12 assumption, what we would be that talking about would be
13 somewhere around $3.46 billion a year?
14 MS. MARKEY: Very possible. And I've actually
15 got several examples of other price points.
16 MR. DRIVON: That's $3.64 billion a year for a
17 nickel; right?
18 MS. MARKEY: Yes.
19 MR. DRIVON: Now, if we got it up to a dime, we'd
20 be talking about real money.
21 [Laughter.]
22 MS. MARKEY: Since you gentlemen now have the
23 other slides, I thought I'd just show you some of the other
24 price points, including some other examples of Southern
25 California and PG&E's. So, if you'll flip over to the other
26 Power Point presentation, which these gentlemen don't have.
27 So what this is, is just various different
28 examples. Right off the bat, and I apologize that this is so
0118
01 difficult to see, but this is a SoCal Gas large packages volumes
02 and prices, 1999 through 2002.
03 Common economy theory would say that as more
04 volume increases or is reported as time goes on, that the price
05 actually flattens. This particular slide actually disproves
06 that theory, and that is, more volume was reported on SoCal Gas
07 large packages. In fact, volumes actually caused the price, or
08 it looks like it caused the price to spike on a regular basis.
09 I'm just going to run through these briefly. I
10 have a number of examples.
11 MR. DRIVON: Hold on. Before you do this brief
12 part, can we go back to the last slide?
13 MS. MARKEY: This one right here?
14 MR. DRIVON: That one.
15 I remember someone was saying this morning, you
16 might have looked at this chart here. This is a chart about
17 what was happening with price, and then there's another chart
18 about what was happening with pipeline capacity being withheld.
19 Do you remember some of that testimony this
20 morning?
21 MS. MARKEY: Yes, I do.
22 MR. DRIVON: I was just looking at this, and at
23 the time when the highest volumes of gas trading were taking
24 place --
25 MS. MARKEY: Yes.
26 MR. DRIVON: I mean, is it fair to say that these
27 trading volumes that we see here are historically unique? I
28 mean, we never saw that sort of thing before.
0119
01 MS. MARKEY: No, we didn't.
02 MR. DRIVON: And these prices that these fellows
03 were talking about, were historically unique as far as we know;
04 right?
05 MS. MARKEY: Yes, that's correct.
06 MR. DRIVON: And although they claim -- these
07 fellows that were trading all of this gas claimed that they were
08 trading a whole bunch of gas at exactly the same time, we're
09 seeing historic amounts of pipeline capacity withheld and
10 historic prices; correct?
11 MS. MARKEY: Correct.
12 MR. DRIVON: So, how come there was so much being
13 traded and so little being delivered?
14 MS. MARKEY: I don't have an absolute easy answer
15 or an answer that I know, but I could speculate that there's a
16 lot of turning of paper going on at this time.

17 MR. DRIVON: People buying and selling paper and
18 not gas, and shipping air and not gas, and collecting money for
19 doing it.
20 MS. MARKEY: That's correct.
21 MR. DRIVON: That happened more in California
22 than any place else in terms of how much it cost folks out of
23 their pocket; right?
24 MS. MARKEY: That is correct.
25 MR. DRIVON: And smack in the middle of all of
26 this were the very same folks who were not only involved with
27 trading this paper, but were also involved with generating
28 electricity in California.
0120
01 MS. MARKEY: Many of the same players were one
02 and the same.
03 MR. DRIVON: Thank you.
04 MS. MARKEY: This is June 19th, 2001, where
05 there's one single -- excuse me.
06 CHAIRMAN DUNN: Sorry to interrupt you. Chris
07 had a quick question for you.
08 MS. MARKEY: Sorry, Chris.
09 MR. SCHREIBER: I just wanted to touch on
10 something that you said there.
11 You mentioned that intuitively as volumes rose,
12 price volatility would be dampened?
13 It's difficult to see on this chart, but I just
14 want to make clear here that what you're saying is that there's
15 a inverse relationship between price volatility and volume, so
16 that typically, the more volume you see, the less price
17 volatility because of the market and it is more liquid.
18 MS. MARKEY: Normally you would.
19 MR. SCHREIBER: And in this instance, as the
20 volume peaks here like a mountain, the price actually goes with
21 it.
22 MS. MARKEY: That is correct.
23 MR. SCHREIBER: And is there an explanation for
24 that from your analysis?
25 MS. MARKEY: I think my next slides or next
26 couple of slides would probably give you a better answer to
27 that.
28 CHAIRMAN DUNN: Let's go there.
0121
01 MS. MARKEY: What you have here is, I'm going to
02 show you not only for California, but for several other
03 locations throughout the United States. There is different days
04 that I picked out with various different transactions. Each one
05 of these represents a single company's reported transaction at a
06 single price.
07 In this particular example on June 19th, 2001,
08 there was one company that represented 41 percent of the total
09 volume that was reported. And the midpoint of that day was
10 8.25.
11 If you took that trade out, it would have changed
12 the volume -- the midpoint price to 8.31, a difference of 6
13 cents.
14 If I continue along with these examples, on
15 August 2nd, 2001, there is a single company that reported 20
16 percent of the volume, and it created an average -- and by the
17 way, I just would want to point out one thing about this slide,
18 as well as a couple of the others.
19 You'll notice that a lot of the volumes are on
20 the very edge of one end or the other of the price range. In
21 this particular example, there was one -- only one other very
22 small, small volume that was done at a price that was lower than
23 the 3.64 that was done on this particular day.

24 Also notice that this volume has no corresponding
25 equivalent. In other words, if I buy at a location, I'm usually
26 selling to someone who is also going to report. In this
27 particular example, there is absolutely no one who traded the
28 same kind of volume anywhere near same kind of price that this
0122
01 company claims to have reported volume and price at.
02 MR. DRIVON: If someone were trying to report for
03 the purpose of manipulating the market either up or down, or the
04 index, I guess, would be a better way to put it.
05 MS. MARKEY: Yes.
06 MR. DRIVON: That person would be best served if
07 they pushed the envelope with respect to either the higher or
08 lowest price; correct?
09 MS. MARKEY: Correct.
10 MR. DRIVON: What you say that you're seeing here
11 is that the higher volumes of trading that were reported were
12 reported at the margins of the price; correct?
13 MS. MARKEY: Typically.
14 MR. DRIVON: But if things were flowing along in
15 a normal way, where there was just your basic average amount of
16 exaggeration, you would expect to see a more uniform spread of
17 transactions over the price range for that day; wouldn't you?
18 MS. MARKEY: Yes, I would expect that.
19 MR. DRIVON: So, when you, as an expert, look at
20 this, what it says to you is, just based on this information
21 alone, there's a red flag that these prices aren't real; right?
22 MS. MARKEY: Something looks very fishy.
23 MR. DRIVON: Right. And then, when you overlay
24 the fact that the volumes being reported, like the last slide,
25 are hugely disproportionate to historic levels, another red
26 flag?
27 MS. MARKEY: That is correct.
28 MR. DRIVON: Then when you look at the
0123
01 volatility, where the swings from day-to-day or week-to-week are
02 greater in terms of reported trading volume than the total
03 amount traded in an ordinary market, that's another red flag.
04 MS. MARKEY: Correct.
05 MR. DRIVON: I mean, you could get -- if normally
06 the trading level was a 3 when this was going on, you could see
07 weekly swings to a magnitude of 5 or 6, if you follow what I
08 mean.
09 I mean, we're trading down here, and you've got
10 this much. Then, when all of this is going on, you can see
11 daily and weekly swings that are twice as much of what the total
12 had been.
13 MS. MARKEY: That's correct.
14 MR. DRIVON: And some of this could be explained
15 by what we've all heard of as round-trip trading, I guess. Is
16 that right?
17 MS. MARKEY: Yes. I have an example of something
18 that might be considered to be a wash trade or round-tripping.
19 MR. DRIVON: Okay.
20 MS. MARKEY: In this particular example, SoCal
21 actually when you took trade out, the difference was
22 approximately three cents.
23 Again, I'll just flip through these. This is
24 PG&E's Citygate. Probably maybe not quite as volatile as SoCal
25 Gas large packages, but nevertheless, did see its own share of
26 volatility.
27 And here is a trade. And this one actually --
28 consistently PG&E's Citygate, there was one company consistently
0124
01 reported a large volume but always managed to consistently

02 report approximately in the middle. So, there wasn't
03 necessarily a change in the price in this particular example.
04 It went from $5.15 to only about $5.16, changed at less than a
05 penny.
06 Same thing on the September 11th. Again, a
07 company who reported approximately 37 percent, and again another
08 company that reported 33 percent. I think the important part
09 here is, there is one company though who consistently reports a
10 very large significant volume.
11 This is Kern River. This actually is a price
12 point that is a location where --
13 CHAIRMAN DUNN: Let me interrupt.
14 You've gone through several examples. Do you
15 know who is responsible for reporting these volumes on the
16 particular days that you've identified here?
17 MS. MARKEY: At the time that Gas Daily received
18 these, we typically would take the faxes, e-mails, and phone
19 calls, and then within two weeks, we would destroy the documents
20 that were sent to us.
21 I generally have a knowledge of various different
22 folks who traded at the locations that we're referring to, at
23 least here in Southern California, and the types of people who
24 would report to us. And they're your usual suspects more or
25 less. I have a list of the top ten traders who typically would
26 report to us that I can give you a list of.
27 CHAIRMAN DUNN: In other words, Gas Daily didn't
28 archive that underlying data.
0125
01 MS. MARKEY: That is correct.
02 CHAIRMAN DUNN: But given your experience, you
03 can identify at least a list of those companies that could have
04 reported such a large volume to Gas Daily and at least been
05 believed by the employees of Gas Daily at that time?
06 MS. MARKEY: In the documents that I provided to
07 you gentlemen today, there is a list, a partial list, but a list
08 nevertheless of companies who typically reported to both Gas
09 Daily to Megawatt Daily.
10 CHAIRMAN DUNN: Can you give us a representative
11 sampling of those who it would not be unusual for the employees
12 of Gas Daily to see large volumes of the trades from those
13 companies?
14 MS. MARKEY: That list right there, which starts
15 out with Enron, AEP, Reliant, Mirant, Duke, Aquila, BP, Dynegy,
16 Sempra, Coral, and El Paso.
17 CHAIRMAN DUNN: Okay. Given the representative
18 samples that you have shown here, Ms. Markey, in your opinion,
19 what's the likelihood that these volumes, given your analysis of
20 the data, were either exaggerated or that they represent wash
21 trades?
22 MS. MARKEY: I have an example that I'm showing
23 here. On this particular day, and this is in Columbia,
24 Appalachia, has absolutely nothing to do with California, but
25 it's two large volumes. In fact, the two largest volumes
26 reported that day. Both were above a bcf of gas; both were
27 transacted at 3.145. They were reported by two separate
28 different companies. So, they were exactly the same volume,
0126
01 and they were the exact same price.
02 This is a very -- and if you look at everyone
03 else who reported at this particular location, there's no one
04 who comes close to the volume or the size, nor the exact price
05 value as these two particular transactions do.
06 MR. DRIVON: So you mean over at Columbia APP on
07 August the 11th, 2001 somebody was buying gas, or at least said
08 they were buying gas, at 3.145.

09 MS. MARKEY: That's correct.
10 MR. DRIVON: And in California, we're paying $16,
11 or something like that?
12 MS. MARKEY: Yes.
13 MR. DRIVON: I mean, a multiplier of that amount.
14 MS. MARKEY: The main reason I used this one is
15 because it was a very large volume of exact quantity of exact
16 price.
17 MR. DRIVON: I understand that, and maybe their
18 copy machine got stuck.
19 But what caught my eye was the $3.145, and then
20 I'm thinking about the amount of money that we're paying here in
21 California. And I know that that represents this spread that
22 the Brattle fellows were talking about this morning.
23 MS. MARKEY: Yes.
24 MR. DRIVON: If a nickel is three-and-a-half
25 billion, anybody got any idea what six-and-a-half dollars is?
26 MS. MARKEY: It's a substantial amount of money.
27 One of the locations where gas could flow from in
28 production regions was Kern River Opal. This price point is
0127
01 from November 3rd, 2001.
02 There was one company. Again, notice how close
03 to the end of the range that this company reported, and they
04 represented 36 of the total volume. If you take that particular
05 trade out, it dropped the price by almost two cents.
06 And again, I can continue with as many of these
07 examples as possible. This is Carthage Hub in Texas, where
08 there is one company who is roughly 76 percent of the total
09 volume reported that day.
10 Another company off Alliance pipeline as it went
11 into the U.S. was 79 percent. And if I took this transaction
12 out, it would have changed the price by about three cents as
13 well.
14 Nova, which is a Canadian price point which
15 processes a lot of gas that comes down into California, this
16 particular party -- actually, if you look at the slide, there's
17 only four people who reported on this particular day at AECO,
18 and one individual company represented 81.7 percent of the total
19 volume that was reported that day.
20 I just picked this, again, another price point,
21 out of the clear blue. This is actually a point that's located
22 in Oklahoma. Even though the price spiked, and you had a small
23 spike in volume, you didn't necessarily see the kind of
24 volatility that you did in California. Again, they too had a
25 price point where one single transaction towards the end of the
26 price range represented 65 percent of total volume. And here's
27 what it would have looked like without that trade.
28 Although California certainly had a very large
0128
01 volume of reported trades on a regular basis, unfortunately I
02 can't tell you gentlemen that y'all were the largest point ever
03 traded as far as Gas Daily was concerned. That actually is
04 Chicago. In the case of Chicago, in this particular transaction
05 over 4 bcf of gas was reported by one single company at this
06 location. But it gets better.
07 If you go to this particular day, which is June
08 20th, 2001, this is the largest amount of volume ever reported
09 to Gas Daily for any one particular price points. One company
10 traded almost 7 bcf of gas in one particular morning.
11 MR. DRIVON: Seven billion cubic feet of gas --
12 MS. MARKEY: That's correct.
13 MR. DRIVON: If I remember what that fellow in
14 the second row back there said this morning, is just about
15 enough gas to run California for a day.

16 MS. MARKEY: That's correct.
17 MR. DRIVON: So, you've got one company who
18 claims that they traded enough gas in one price point in the
19 country to run California, which has got to be far and away the
20 largest consumer in the country in terms of a state. They did
21 it all by themselves.
22 MS. MARKEY: That's what this graph would
23 indicate.
24 MR. DRIVON: That's what they told you; right?
25 MS. MARKEY: Yes, by representing 52 percent of
26 the total volume, it would have suggested that everybody who
27 reported volumes on this particular chart would have had to
28 transact with this one particular company.
0129
01 MR. DRIVON: Did you ever look to see if they had
02 their fingers crossed behind their back.
03 MS. MARKEY: I want to point out, too, that this
04 particular company for this one single transaction -- for the
05 transactions done on this one single day, I should say, would
06 have had to cough up $27 million just for one day's
07 transactions.
08 At this time, those were just the various
09 different examples. Again, this is the ranking of the top ten
10 companies who would represent companies who would report to Gas
11 Daily and what their trading volumes were on general basis as
12 reported to Gas Daily.
13 So, we can either go through this, or we can go
14 back, or if you have specific questions.
15 CHAIRMAN DUNN: The most important question
16 actually, unfortunately.
17 Why don't we take about a five-minute break to
18 give everybody a rest and for Evelyn to rest her fingers and
19 change paper.
20 [Thereupon a brief recess
21 was taken.]
22 CHAIRMAN DUNN: Why don't we get moving forward
23 again.
24 We're back on the record, continuing with the
25 testimony of Ms. Markey, subject to the same regs and remedies
26 as we discussed earlier at the outset of your testimony,
27 Ms. Markey.
28 Our apologies for interrupting. You were in the
0130
01 midst of going through some of the slides. I know there are
02 some left. Why don't we just let you take up where we left off.
03 MS. MARKEY: Great, thank you, Senator.
04 I do want to clarify just because I want to kind
05 of just make sure everybody is singing from the same sheet of
06 music here, the contracts in question are -- contracts that any
07 price manipulation would have an affect on would be contracts
08 that were based off of an index, rather than just deals done at
09 the spot market.
10 CHAIRMAN DUNN: Mr. Drivon.
11 MR. DRIVON: Well, it would affect the day-ahead
12 spot market as of the time the folks show up at 6:30 or 7:30 in
13 the morning, because I think one of your slides indicated, one
14 of the very first things they would do would be, the traders
15 would check Gas Daily.
16 MS. MARKEY: That's true, that's true. It could
17 be said that given the next morning when the market would open,
18 or before the market would open on the NYMEX, you could refer to
19 any price that was published by Gas Daily to start the market
20 off first thing in the morning.
21 MR. DRIVON: And then the other thing that
22 typically traders would do at or about this time is, they would

23 check Enron On Line.
24 MS. MARKEY: That's correct, to see what the
25 bid-ask was on Enron's screen.
26 MR. DRIVON: And the bid-ask on Enron's screen,
27 of course, would always reflect that Enron was going to be one
28 of the counterparties to the transaction. That's the way it
0131
01 worked.
02 MS. MARKEY: That is correct.
03 MR. DRIVON: I mean, that's the way it was
04 supposed to work. We found out there might not be a
05 counterparty to some of the transactions, but at least Enron was
06 involved in every transaction; correct?
07 MS. MARKEY: Yes, it was a closed system.
08 MR. DRIVON: And so, folks would typically check
09 Enron On Line, which was run by, of course, Enron, who's the
10 number one chief suspect on your list of ten.
11 MS. MARKEY: Yes, that is correct.
12 MR. DRIVON: And then, they would also check, in
13 order to start off the day's trading, Gas Daily index, which, if
14 what you've told us you believe to be is, in fact, true, is an
15 index that was being misreported and manipulated; right?
16 MS. MARKEY: That is true.
17 MR. DRIVON: I did want to ask you a couple of
18 other questions.
19 These reports of price, to the extent that they
20 were inflated or just false, let me read you a section of the
21 California Penal Code.
22 MS. MARKEY: All right.
23 MR. DRIVON: There has been some question as to
24 whether the activities that were taking place might be a
25 violation of the law.
26 Section 395 of the California Penal Code reads as
27 follows:
28 "Every person who willfully
0132
01 makes or publishes any false
02 statement, spreads any false
03 rumor, or employs any other
04 false or fraudulent means or
05 device with the intent to affect
06 the market price of any property
07 is guilty of a misdemeanor."
08 Did you know that?
09 MS. MARKEY: No, I didn't.
10 MR. DRIVON: Now, you've been telling us that in
11 your opinion, and in the opinion of others who called for audits
12 and investigations, there were in fact false statements made in
13 terms of what the trading prices were. Isn't that true?
14 MS. MARKEY: We suspected as much. We didn't
15 know for a fact, but I sure did suspect as much.
16 MR. DRIVON: Right, you suspected it, and others
17 suspected it, and that's why there was an audit called for, and
18 the protocols put in place, and the company hired to do it.
19 MS. MARKEY: That's correct.
20 MR. DRIVON: And in your opinion, based on your
21 experience, training, and expertise, and the position that you
22 held, being the person in charge of acquiring these data, it is
23 your opinion that false statements were being made. Isn't that
24 true?
25 MS. MARKEY: It's my opinion. Again, I don't
26 have clear evidence, but it is my strong opinion.
27 MR. DRIVON: It is your strong opinion, and you
28 are an expert on the accumulation of these data that you've been
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01 talking about; isn't that true?
02 MS. MARKEY: Based on the information that I saw
03 in the four years that I collected data, that is correct.
04 MR. DRIVON: And it's your further opinion, if I
05 understand it correctly, that these false statements and this
06 false reporting was being done for the purpose of affecting the
07 market price of gas; isn't that true?
08 MS. MARKEY: I didn't know exactly the purpose,
09 but you could assume that would be the purpose.
10 MR. DRIVON: That's your opinion as you sit here
11 today; isn't that true?
12 MS. MARKEY: That is correct.
13 MR. DRIVON: And that's an opinion that you hold
14 strongly; isn't that true?
15 MS. MARKEY: That is correct.
16 MR. DRIVON: The acquisition of the publications
17 was made in August of 2001?
18 MS. MARKEY: That is correct.
19 MR. DRIVON: And that's the same month that the
20 audit was killed; right?
21 MS. MARKEY: Yes.
22 MR. DRIVON: And when did you leave the
23 publication?
24 MS. MARKEY: March 2002.
25 MR. DRIVON: These examples that you've given us
26 are examples that you have put together by reviewing and
27 analyzing the data that you have available to you; correct?
28 MS. MARKEY: Correct.
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01 MR. DRIVON: And those data are basically taken
02 from the data that you helped accumulate in your official
03 capacity with the publication; correct?
04 MS. MARKEY: That is correct.
05 MR. DRIVON: And in order to -- you're not
06 telling us that these examples that you've pulled out are the
07 only examples; are you?
08 MS. MARKEY: No, I'm not.
09 MR. DRIVON: I mean, it takes a lot of time to go
10 through these data and try to put these sorts of things
11 together; correct?
12 MS. MARKEY: Didn't take me very long.
13 MR. DRIVON: And if you wanted to spend more time
14 on, it you could come up with more examples?
15 MS. MARKEY: Yes, I could.
16 MR. DRIVON: You've given us certain documents
17 here. In fact, about three inches of them.
18 MS. MARKEY: Yes.
19 MR. DRIVON: Can you tell us basically what those
20 documents are? What types of documents do we have there?
21 MS. MARKEY: Well, they're e-mails primarily in
22 regards to the period of time when I was at Platts that were
23 back and forth between myself and the price reporters, or from
24 industry participants who sent in information regarding price
25 information.
26 MR. DRIVON: So, the e-mails are one style of
27 document that you have.
28 MS. MARKEY: Most of those were from the time
0135
01 when I was at Gas Daily, was FT Energy. After September 2001, I
02 was no longer in charge of the price team.
03 MR. DRIVON: As of when?
04 MS. MARKEY: September 2001.
05 MR. DRIVON: Let's see. You're the one that was
06 pushing for the audit?
07 MS. MARKEY: Yes.

08 MR. DRIVON: And a company came along, and the
09 audit was going to be of Enron?
10 MS. MARKEY: Yes.
11 MR. DRIVON: That you personally suspected was
12 the main, or at least the largest, misreporter.
13 MS. MARKEY: Yes.
14 MR. DRIVON: And so, you arranged to get these
15 protocols done, and the company lined up, Price-Waterhouse-
16 Cooper, and the contract's ready to be signed and all that;
17 right?
18 MS. MARKEY: Yes.
19 MR. DRIVON: Then the company gets sold to
20 somebody whose biggest customer for this information is Enron;
21 right?
22 MS. MARKEY: Yes.
23 MR. DRIVON: That happens in August.
24 MS. MARKEY: Yes.
25 MR. DRIVON: Within 30 days, they take you off
26 that job.
27 MS. MARKEY: Two weeks.
28 MR. DRIVON: Two weeks.
0136
01 And the fellow or person who replaced you
02 probably hasn't said anything about this.
03 MS. MARKEY: Not that I'm aware of.
04 MR. DRIVON: If I understand it, Ms. Markey, you
05 are currently under subpoena not only by this Committee, but
06 also by other entities. Is that correct?
07 MS. MARKEY: That is correct.
08 MR. DRIVON: Including the FERC?
09 MS. MARKEY: Yes, sir.
10 MR. DRIVON: The Justice Department?
11 MS. MARKEY: CFTC, not the Justice Department.
12 MR. DRIVON: Anybody else besides CFTC and FERC?
13 MS. MARKEY: So far that's it.
14 MR. DRIVON: And the testimony that you're giving
15 here today is testimony you haven't given in any other official
16 forum?
17 MS. MARKEY: No, I have not.
18 MR. DRIVON: And the documents that you've shared
19 with us, some of which we were able to look at, and some of
20 which -- and I think the most important and incriminating
21 documents were documents that you were willing to give to us
22 only after immunity was confirmed; is that correct?
23 MS. MARKEY: That's correct.
24 MR. DRIVON: And those were given to us in the
25 manner that some saw earlier, where they were actually presented
26 to the Sergeant here in her official capacity; right?
27 MS. MARKEY: That is correct.
28 MR. DRIVON: Those are documents that have not
0137
01 been to this time to your knowledge released to others?
02 MS. MARKEY: No, they have not.
03 MR. KIRTLAND: Just to clarify, Mr. Drivon, all
04 the documents were provided pursuant to the immunity agreement.
05 MR. DRIVON: I understand that.
06 MR. KIRTLAND: Okay. I just wanted to make sure
07 we're on the same page.
08 MR. DRIVON: Oh, we are on the same page.
09 And not only was immunity conferred, but there is
10 a subpoena compelling the production of those documents. So,
11 bringing them to Sacramento was not a voluntary act on your
12 client's part.
13 MR. KIRTLAND: That's correct.
14 MR. DRIVON: You told us earlier that some level

15 of price exaggeration or puffing has sort of always been
16 involved in this process; correct?
17 MS. MARKEY: Yes.
18 MR. DRIVON: But what we're seeing here in these
19 data that you have provided us is a whole new level of falsity;
20 isn't it?
21 MS. MARKEY: It could be construed as such.
22 MR. DRIVON: Well, you've looked at these data
23 for a long time, and you were central to the accumulation of
24 these data and to the questions that were being asked about
25 these data; true?
26 MS. MARKEY: Yes.
27 MR. DRIVON: Can you think of any other way that
28 these data could be construed, other than a whole new level of
0138
01 manipulation was being brought to the gas market?
02 MS. MARKEY: I don't know any other reason why
03 some volume would be traded at these particular levels and then
04 reported as such.
05 MR. DRIVON: But it's not only the levels. It's
06 the pattern; isn't it? In other words, the prices and volumes
07 are being reported at the margins of the market.
08 MS. MARKEY: That's correct.
09 MR. DRIVON: Now, as I understand it, on June the
10 16th of 2001, there were price transactions that took place that
11 involved Enron; is that right.
12 MS. MARKEY: Yes, I believe so.
13 MR. DRIVON: June 16th, I think that's the right
14 date.
15 MS. MARKEY: PG&E and SoCal Gas large packages.
16 MR. DRIVON: Or was it the 19th.
17 MS. MARKEY: It was the 19th, actually.
18 MR. DRIVON: And on the 19th, as I understand it,
19 you had occasion not only to look at the data that you have, but
20 also the daily position reports of Enron; is that correct?
21 MS. MARKEY: Yes I have.
22 MR. DRIVON: And with respect to the daily
23 position reports of Enron, on that day Enron was short; isn't
24 that true.
25 MS. MARKEY: That is correct.
26 MR. DRIVON: In other words, Enron needed the
27 price of natural gas to go down that day in order to make money;
28 correct?
0139
01 MS. MARKEY: Correct.
02 MR. DRIVON: And they misreported on that day, or
03 they reported unusual amounts of trading at unusual prices?
04 MS. MARKEY: I don't know specifically that this
05 person that reported here was Enron, but one might suspect
06 that.
07 MR. DRIVON: Well, let me make it really easy for
08 you. I want you to assume it was Enron. I mean, it quacks like
09 a duck, it walks like a duck. I mean, I want you to just assume
10 it's a duck; okay?
11 MS. MARKEY: I'll assume it's a duck.
12 MR. DRIVON: All right. Now we've got a duck, an
13 Enron duck. It's kind of leaning sideways as it stands there,
14 kind of like the sign.
15 The way that they reported volumes and prices on
16 that day, they needed the price to go lower to make money?
17 MS. MARKEY: Yes.
18 MR. DRIVON: The volumes and prices that were
19 reported on that day pushed the market in which direction?
20 MS. MARKEY: Down.
21 MR. DRIVON: I'm shocked.

22 And therefore, based upon those trading
23 activities, and their market position that you verified by
24 market data and reporting data that they had internally are
25 consistent.
26 MS. MARKEY: Yes.
27 MR. DRIVON: And they made money.
28 MS. MARKEY: They would, if that's the position
0140
01 that they had in Southern California.
02 MR. DRIVON: I'm still assuming that it's a duck.
03 MS. MARKEY: It's a duck.
04 I actually do have an example, however,
05 specifically of a situation with Enron, if you'd like to see
06 that.
07 MR. DRIVON: Absolutely. This is going to be an
08 example of a false statement?
09 MS. MARKEY: It's not necessarily false, but it
10 would have been --
11 MR. DRIVON: If we assume it's false, this is a
12 statement that is going to have an affect on the market.
13 MS. MARKEY: What we'll show is how much Enron
14 actually did report at one particular location. It's only one
15 day. And what happened was, is on February the 2nd --
16 CHAIRMAN DUNN: I'm sorry, let me interrupt. I'm
17 going to get everybody to the right page. Chris has a quick
18 question, then we'll get to this.
19 MS. MARKEY: Sure.
20 CHAIRMAN DUNN: For everybody's sake, we are in
21 that packet that was just handed out, towards the very back.
22 The title starts, "Text from e-mail sent by David Behrman to
23 Gas," et cetera, et cetera.
24 Chris.
25 MR. SCHREIBER: I actually just wanted to
26 clarify.
27 Just a point that Larry had made about seeing
28 Enron's DPRs, I'd actually given you a figure from the DPRs --
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01 MS. MARKEY: That is correct. You did not show
02 me the exact ones. You gave me a list and said that you had
03 pulled that from that. That is correct.
04 CHAIRMAN DUNN: And Chris, for clarification for
05 everybody who's sitting here, DPR is?
06 MR. SCHREIBER: Daily Position Report.
07 CHAIRMAN DUNN: Which is, just so everybody
08 understands, what's the significance of a DPR?
09 MS. MARKEY: A Daily Position Report is
10 ultimately the net long or short position that the company holds
11 every single day. For instance, some of the numbers that Chris
12 gave me showed that on June 19th, Enron, according to the sheet
13 he gave me, was short 589 bcf as far as their daily position
14 that -- for that particular day.
15 If I can put that in context, the total gas
16 supply in the U.S. every day from both Canada and U.S.
17 production is approximately 53 bcf, which is only 10 percent of
18 Enron's total position for that one single day.
19 CHAIRMAN DUNN: And being short of their DPR can
20 tell you, at least theoretically, what their motivation may be
21 to how that gas price should come out.
22 MS. MARKEY: That is correct.
23 CHAIRMAN DUNN: Okay.
24 Mr. Drivon.
25 MR. DRIVON: I want to put on the record at this
26 point that use of the Daily Position Report from Enron in this
27 fashion was at my express authorization and instruction to
28 Mr. Schreiber for purposes of preparing witnesses who testify in

0142
01 this hearing.
02 MS. MARKEY: Okay.
03 CHAIRMAN DUNN: Ms. Markey, please, let's go to
04 this one.
05 MS. MARKEY: Right. This is an e-mail text from
06 an e-mail that I received from David Behrman, who reported to me
07 in Houston. He was basically in charge of the actual pricing
08 teams themselves down in Houston.
09 And let me just call attention to the middle
10 paragraph that says,
11 "I got a call today from Patrice
12 Thurston ... who trades Chicago
13 and Michigan gates;"
14 By the way, Patrice is a trader at Enron,
15 "she said [that] somehow her 1.3
16 bcf at Chicago was left out of
17 the sheet they sent Friday."
18 This is probably the only documentation that I
19 have that actually shows how much volume a particular company
20 actually traded as far as a name, and a number, and a location.
21 What I did was, if you'll flip to the next page,
22 I actually was able to figure out what the impact of Enron's
23 missing data was for that Chicago price for February 5th, 2001.
24 As you know, the prices are gathered every day
25 and totaled up. Although not available through -- on the
26 publication itself, on Gas Daily's website, you can actually go
27 in and get the total volume that was reported, the aggregated
28 total volume that was reported for a particular price point.
0143
01 You can also get the midpoint, and that's what I
02 did here. I actually collected it for a few days so that you
03 could get the general overall pattern of how much gas was
04 reported at this particular location, which happens to be
05 Chicago's citygates.
06 If you'll notice, on the flow date of February
07 1st, approximately 3.8 bcf was reported. On February 2nd, 3.6
08 bcf was reported. And then there's a significant drop down to
09 2.4, and then back up to 3 bcf, 4.2 bcf, 3.7 bcf, so forth and
10 so on.
11 So, you can see that there was a definite drop in
12 volume for the days where Enron left their volumes out of the
13 price report for that day.
14 MR. SCHREIBER: Did Patrice Thurston represent
15 all of Enron's reporting to Gas Daily for this price point, or
16 were there other traders from Enron?
17 MS. MARKEY: Oh, no, there were other traders
18 from Enron. This just -- she happened to be the one who traded
19 Chicago and Michigan gates.
20 There could have been other price -- there
21 certainly were, as there was close to 700 traders at Enron
22 MR. SCHREIBER: Were there others for this price
23 point at the Chicago-Michigan gates, or was she the only Enron
24 representative?
25 MS. MARKEY: In this particular instance, it
26 sounds like she's the only one, but I cannot recall for a fact
27 whether she was or not. There were certainly for other
28 locations, and there were also numbers provided to us by Enron
0144
01 On Line, but I believe they all capsulized together when they --
02 when they reported. At least that's what they told us they did.
03 All right, so we're back to the slide -- and by
04 the way, on a Friday, whenever a trader reports their prices,
05 it's always for a three-day period. It's for Saturday, Sunday
06 and Monday. So, all three days were missing the volume that

07 Enron would have reported that day.
08 If I can continue, I then went ahead and included
09 Enron's volume that was -- and again, I've got this in thousands
10 of MMBtus to stay consistent with how the data is reported. So,
11 it looks like 1300 thousand in Btu, which is 1.3 bcf. And
12 notice then, when you add that back in --
13 CHAIRMAN DUNN: I'm going to interrupt.
14 Just for everybody following, we're now on the
15 "Impact of Enron's Missing Data," but Slide 2, and it's labeled
16 as "Slide 2."
17 MS. MARKEY: All right.
18 If you'll notice with the addition of the volume,
19 it gets the total volume for Chicago in line with all the other
20 days that volume was reported for Chicago.
21 If I take that one step further, Enron --
22 CHAIRMAN DUNN: We're now on Enron Slide 3.
23 MS. MARKEY: Yes, we are now on Slide 3.
24 Enron On Line reported to Gas Daily through a
25 mechanism. We had a separate stand alone index that was created
26 sometime around March or April of 2001, whereby Enron On Line
27 came to us and requested that we set up an index that would
28 bring in all their prices for specific locations.
0145
01 Initially we started this index because we
02 thought -- we being Gas Daily -- thought that we would get all
03 the other electronic indexes to participate, such as the ICE,
04 the Intercontinental Exchange, E Speed.
05 As it turned out, there was only one on line
06 entity that provided us prices, which was Enron On Line.
07 So on the particular day that we're talking about
08 here, Enron On Line turned in a price to Gas Daily of 6 dollars
09 and 84.7 cents. So, assuming that that's all of the price that
10 Enron would have done, since anything done on Enron On Line was
11 always done with Enron, I added that back into the number that
12 would have been reported for the midpoint. And you can see that
13 the total revised volume, with the revised price, would have
14 changed the price by almost three cents.
15 All this really proves is that Enron did have an
16 influence on the market, and it gives you a concept of how much
17 volume they could and did report at a particular location.
18 And you can take that assumption and carry it
19 forward to other locations, particularly if we look at -- and
20 this is in your documents -- the locations that they traded and
21 reported through Gas Daily through the electronic exchange.
22 There were approximately 10 or 12 locations where they
23 specifically reported on an ongoing basis, and SoCal gas large
24 packages was one of them.
25 CHAIRMAN DUNN: And as discussed between you and
26 Mr. Drivon earlier, a three-cent change, according to the
27 revisions you did here, "Total Revised Volume," and compared it,
28 is huge.
0146
01 MS. MARKEY: I would have killed to make three
02 cents as a trader. Not literally, of course.
03 MR. DRIVON: I was going to say, that's another
04 violation of the California Penal Code.
05 CHAIRMAN DUNN: We understand, Ms. Markey.
06 Senator Johannessen.
07 SENATOR JOHANNESSEN: The numbers you used, the
08 approximately 700 traders.
09 MS. MARKEY: Yes, sir.
10 SENATOR JOHANNESSEN: That Enron had, the
11 information that we just now received, was that indicative of
12 what they all did? Or was there some specific unit of Enron
13 that did this?

14 I'm assuming they had a lot of offices, but 700
15 people wouldn't be in one boiler factory; would they?
16 MS. MARKEY: That's a very good question.
17 To my knowledge, the numbers at Enron were rolled
18 up and aggregated, but I don't know how many of their
19 subsidiaries made up those numbers. They had several different
20 companies that actually did trade. Enron Energy Services is
21 one; Enron Capital and Trade was another.
22 SENATOR JOHANNESSEN: So, am I correct in
23 assuming then that Enron internally also traded, round robin
24 internally? That maybe subsidiaries of Enron who then would be
25 selling to, who then reported a higher income back in again?
26 MS. MARKEY: That's possible.
27 Certainly, when you look at capacity release,
28 which is the trading of transportation, which is publicly
0147
01 available information, that did consistently happen.
02 SENATOR JOHANNESSEN: And that can be shown by
03 the volumes that in fact was delivered, rather than on paper?
04 MS. MARKEY: As far as the trades or --
05 SENATOR JOHANNESSEN: Yes.
06 MS. MARKEY: It's a possibility, yes.
07 SENATOR JOHANNESSEN: Thank you.
08 MR. DRIVON: Let's talk about partial release for
09 a minute, because that gets us right back to what we were
10 talking about this morning; doesn't it?
11 MS. MARKEY: Yes, it does.
12 MR. DRIVON: So pipeline's a little bit tough for
13 me to think about, because, you know, it's full, or it's not
14 full, or it's only partly full, or it looks like it's full but
15 it hasn't got anything in it, and we've got a lot of hard things
16 to think about.
17 But if we compare it to an apartment building,
18 and we say that El Paso owns this entire apartment building, and
19 it's full of apartments.
20 MS. MARKEY: Correct.
21 MR. DRIVON: And El Paso's got to do something
22 with all those vacant apartments.
23 MS. MARKEY: Yes.
24 MR. DRIVON: So, what they do with that is, they
25 get their subsidiary company, Merchant, to give them a master
26 lease on the apartment house.
27 MS. MARKEY: Yes.
28 MR. DRIVON: So now, they book a profit because
0148
01 they got the empty apartment building off to Merchant.
02 MS. MARKEY: Yes.
03 MR. DRIVON: Now, Merchant's sitting there with
04 it, and they really don't have any native ability to rent all
05 those apartments because they're just not that big. So, they're
06 either taking a huge risk, or they're going to lay it off some
07 place.
08 Are you with me so far?
09 MS. MARKEY: Yes.
10 MR. DRIVON: So they make a deal with Enron to
11 actually rent all those apartments.
12 MS. MARKEY: Yes, they could do that.
13 MR. DRIVON: And then Enron, a partial release
14 would be if Enron then goes and sublets some of those
15 apartments. That would be a partial release, right?
16 MS. MARKEY: Yes, that's correct.
17 MR. DRIVON: So, that's kind of a rough, and I
18 see one of those Brattle fellows back there shaking his head and
19 kind of going like this, so I know the example is not precise,
20 but there is an analogy there.

21 So, when they sublet those individual apartments,
22 it's kind of like a partial release of pipeline capacity. Is
23 that what you're talking about?
24 MS. MARKEY: Yes, that is correct.
25 MR. DRIVON: And so, those partial releases are
26 also tradeable commodities; aren't they?
27 MS. MARKEY: Yes, they are.
28 MR. DRIVON: And the partial releases are the
0149
01 right to transport gas. A partial release would be a right to
02 transport a certain amount of gas over the pipeline; right?
03 MS. MARKEY: Correct.
04 MR. DRIVON: Kind of like subletting an apartment
05 would give you the right to occupy a certain part of the
06 building.
07 MS. MARKEY: Yes.
08 MR. DRIVON: And through the use of these partial
09 releases, somebody who had the master lease could determine what
10 the supply of available apartments was; right?
11 MS. MARKEY: Yes.
12 MR. DRIVON: You could release more of them or
13 fewer of them.
14 MS. MARKEY: You can also start splitting up the
15 rooms within an apartment as well and sublease those in
16 addition. It's called segmenting.
17 MR. DRIVON: And through those mechanisms, you
18 can affect supply?
19 MS. MARKEY: Yes.
20 MR. DRIVON: And through the affecting of supply,
21 you can affect price?
22 MS. MARKEY: Yes.
23 MR. DRIVON: So, if you put together partial
24 release mechanisms with phony price reporting mechanisms, it's
25 still a duck?
26 MS. MARKEY: Yes.
27 MR. DRIVON: Now you have at least two ways that
28 you can manipulate the market to make money on gas; right?
0150
01 MS. MARKEY: Yes.
02 MR. DRIVON: And then, if in addition to that you
03 happen to also trade electricity, and, say, in the fall of 2000
04 into the spring of 2001, this duck happened to be real long in
05 electricity forward, and you did this stuff with the price of
06 natural gas or some other mechanism we talked about, as well as
07 others, you would be affecting the price of electricity as well;
08 right?
09 MS. MARKEY: That is correct.
10 MR. DRIVON: And if you're long in electricity,
11 and you force price up, what happens?
12 MS. MARKEY: If you're long in electricity, and
13 you force the price up, if the price goes above what you
14 originally paid for it, you make money.
15 MR. DRIVON: Okay. Do you think that's what
16 happened, in your opinion?
17 MS. MARKEY: I think there are a lot of ways to
18 make money in California, and that could have been one of them.
19 MR. DRIVON: Actually two.
20 MS. MARKEY: Two, yes, that's true. Yes, two.
21 CHAIRMAN DUNN: Did you have more?
22 MS. MARKEY: Actually, as far as the slides,
23 there was the example of wash trading back on the original
24 slide.
25 CHAIRMAN DUNN: Right.
26 MS. MARKEY: And if you kind of flip back and
27 forth to the 2, you'll notice that in the TIPROA presentation we

28 start out with a quote.
0151
01 CHAIRMAN DUNN: For those who are following it,
02 we're back into the original packet of the materials that was
03 handed out. The slide that Ms. Markey had stopped at is
04 entitled, "Wash Trading -- How Does It Affect the Indexes?"
05 MS. MARKEY: We can go through this example, and
06 then again we can go back and look at the chart that shows a
07 potential example of wash trading.
08 Basically all I did, if we stare onto the next
09 slide, which says, "Example of How Wash Trades Could Affect
10 Index and Create Volatility," we just simply looked to the
11 example of Company A selling to Company B again at three
12 dollars. Company B sells back to Company A that same 100,000
13 MMBtus at three dollars.
14 And keep in mind when this was done, more or less
15 probably was not scheduled. It was just, again, a paper trade.
16 Could have been done as many times as possible. This is just a
17 one time example.
18 So, when it comes time for the companies to both
19 report to the indexes, Company A reports its 200,000 MMBtus at
20 three bucks, and Company B does the same.
21 Let's go on to the next slide. So, a total of
22 400,000 MMBtus is reported to the price survey vis-a-vis both
23 companies.
24 Let's assume for a time that the total aggregated
25 volumes of all other companies is 600,000, and an average price
26 of 3.10 If that 400,000 had not been included, the price that
27 would have been reported for the midpoint index that day would
28 have been 3.10. However, with the inclusion of 400,000 at three
0152
01 dollars, it ultimately lowered the price by four cents, to
02 3.06.
03 And if I can just now step you back over to your
04 slides again, this will be the one where it says, "Columbia,
05 APP, August 11, 2001."
06 CHAIRMAN DUNN: This is where we had the two
07 identical reports.
08 MS. MARKEY: That is correct.
09 It's probably possible to look at some of these
10 other volumes and prices, but this one stuck out to me because
11 it was so very high, because it was a volume that exceeded
12 anything else that anybody else would have done, and it was done
13 by two individuals.
14 The transactional data that I actually have in my
15 data base also has a time at which these were reported. These
16 were reported within 15 minutes of each other.
17 I can't say for a fact that this is a wash trade,
18 but using Mr. Drivon's example, it sure does smell like a duck
19 to me.
20 I don't really have any other examples, other
21 than to go on to the final example or the final slide, the final
22 two slides in the TIPROA presentation.
23 And this is basically the limitations of the
24 survey itself. Unfortunately what happened with the price
25 surveys is, they became a formalized tool that they were
26 intended to become. There never was any formal process of
27 tracking trades. No audits were ever conducted. And in fact,
28 they never really captured the entire market.
0153
01 Reporters being able to subjectively cull
02 questionable trades, there was no science to that. In other
03 words, how did they feel that day if, in fact, they even did it
04 at all.
05 And most importantly, these newsletters were in

06 the business to report what they heard in the market for their
07 market. The market, of course, were the largest trading
08 houses.
09 There were some possible solutions. At the time
10 I did this, I didn't realize to the extent of how many people
11 were going to come out and start admitting as to their
12 falsifying information.
13 Since then, in rethinking all this, and thinking
14 particularly how it affects my current employer, I think it's
15 very, very important that either at a state level or a federal
16 level that the reporting of prices have some kind of oversight.
17 Right now, the publications themselves truly do not have any
18 kind of means of which to gain accurate and credible prices.
19 The other thing they don't have the ability to do
20 is to publish the individual trades as they're reported, unlike
21 what you see when you trade on the NYMEX or the New York Stock
22 Exchange. There's no way of actually seeing the individual
23 trades.
24 And as somebody mentioned to the Committee
25 earlier, and what we've heard recently is that a lot of
26 companies have quit reporting to the publications as whole.
27 That is probably a more serious issue than anything else,
28 because what are we, the producer, going to price our gas at,
0154
01 considering the Northeast indexes? And we have relied upon them
02 after all these years, as well as a lot of utilities and the end
03 users who do likewise.
04 CHAIRMAN DUNN: Would it also be saying -- and I
05 know we've got our representatives from the PUC here as well --
06 without that information, it would make the setting of rates by,
07 say, a CPUC more difficult?
08 MS. MARKEY: Very difficult.
09 MR. DRIVON: Did you know before you came here
10 today that California law required the CPUC to use an index as
11 part of their rating structure?
12 MS. MARKEY: I was aware, actually, based from my
13 days at Nevada Power, that California had incorporated some of
14 the indexes, but I didn't know to what extent the indexes played
15 a part in their rate making.
16 MR. DRIVON: So, now we have a system of indexes
17 that are created not for the purpose of reporting a market, but
18 just to report what's said. And yet, those same indexes are
19 mandated to be used in setting a price that people are going to
20 pay out of their wallet for this commodity.
21 MS. MARKEY: Yes, that's true. Interestingly
22 enough, a lot of the documents that I've provided to you
23 gentlemen today, they're pretty much wide spread examples of not
24 only the CPUC, but quite a number of other utilities as well as
25 public utility commissions in other states that also use these
26 prices for the same purposes that the CPUC does as well.
27 MR. DRIVON: A purpose for which it originally
28 was not at all the intent that they be used.
0155
01 MS. MARKEY: That is correct.
02 MR. DRIVON: I wanted to use this opportunity to
03 tap your expertise with respect to one other area having to do
04 with wash trades.
05 MS. MARKEY: All right.
06 MR. DRIVON: You showed us an example few minutes
07 ago of two transactions at identical prices, identical volumes
08 within 15 minutes of each other. That is probably a wash
09 trade. But that would be a very simple example of how a wash
10 trade could be done.
11 In other words, Company A sells to Company B, who
12 sells back to Company A for the same amount of money; same

13 volume, same amount, same commodity.
14 MS. MARKEY: Yes.
15 MR. DRIVON: That's one way it can be done.
16 It could also be done where there was an
17 agreement between companies to spread those transactions over
18 time, like the next day or the next week?
19 MS. MARKEY: It could be that. It could be done
20 that way.
21 MR. DRIVON: That would make it more difficult to
22 track; wouldn't it?
23 MS. MARKEY: Yes, it would.
24 MR. DRIVON: In addition to that, you could work
25 out by agreement effective wash transactions that mixed
26 commodities, for instance, selling gas at one price and buying
27 back electricity at a price that reflected the spark spread, and
28 therefore neutralize the transaction.
0156
01 MS. MARKEY: That could occur, yes.
02 MR. DRIVON: And you could do that either on the
03 same day, concurrently, or you could do it over time.
04 MS. MARKEY: Yes.
05 MR. DRIVON: In addition to that, if you wanted
06 to get even more sophisticated, you could begin buying and
07 selling for amounts that cancelled each other an almost
08 limitless number of derivatives.
09 MS. MARKEY: Yes.
10 MR. DRIVON: Forward contracts, or delivery
11 contracts, or pipeline capacity. And then you could mix all of
12 those up.
13 MS. MARKEY: Yes.
14 MR. DRIVON: By agreement, you could effectively
15 wash these trades, which cost nobody anything because all the
16 prices for buying and selling whatever commodity is used, all
17 cancel each other out. That's the definition of it; right?
18 MS. MARKEY: Correct.
19 MR. DRIVON: And through the use of those
20 mechanisms, you could affect not only the gas market, you could
21 affect also the electricity market and financial markets.
22 MS. MARKEY: Yes.
23 MR. DRIVON: If I understand it correctly, the
24 only thing that really would prevent, to the extent that it
25 might be prevented, that sort of activity would be the feeling
26 of moral restraint and responsibility by whoever the company was
27 that was considering doing it; right?
28 MS. MARKEY: Yes.
0157
01 MR. DRIVON: And that appears to be a commodity
02 that was in short supply, at least during that period of time
03 that we've been talking about, as far as you can tell.
04 MS. MARKEY: There was a lot of pressure on
05 people to make a lot of money during that period of time.
06 MR. DRIVON: And a lot of money was made.
07 MS. MARKEY: Yes, there was.
08 MR. DRIVON: Some of the traders that were
09 involved in these transactions, just the traders themselves,
10 some of them became millionaires over this; didn't they?
11 MS. MARKEY: I've heard of that. Wasn't me or
12 one of my friends.
13 MR. DRIVON: That's let alone what the companies
14 may have made.
15 MS. MARKEY: Correct.
16 MR. DRIVON: What do you think of the idea of
17 mandating the reporting of pricing data with the name of the
18 parties that are involved? Names of the parties could be held
19 confidential for some period of time, but mandatory reporting of

20 pricing, including volumes, with criminal penalties for false
21 reporting.
22 How do you think that would affect the
23 transparency of the market?
24 MS. MARKEY: I think it would provide an amazing
25 amount of transparency that we don't have available right now.
26 MR. DRIVON: And that kind of transparency would
27 likely have an affect of taking away a lot of the volatility
28 that we're seeing by reason of the opacity in the market;
0158
01 correct?
02 MS. MARKEY: Correct. However, the market will
03 always be volatile to a certain extent because of weather and
04 supply-demand features.
05 I think the type of excessive volatility that you
06 saw during the period of 2000-2001 would be diminished
07 substantially, if not completely, if prices had been made to be
08 transparent, and more of the players and their participants be
09 basically put in front of everybody to see.
10 MR. DRIVON: Well, if the kind of trading volumes
11 that we saw in that chart that we looked at before, on this
12 chart here, if this increase in trading volume could be
13 explained by weather, it would be a cold day in hell; wouldn't
14 it?
15 MS. MARKEY: Yes, I think that's a good
16 explanation.
17 CHAIRMAN DUNN: It's similar, Michele, to the
18 duck question.
19 MS. MARKEY: Similar to the duck question, yes.
20 CHAIRMAN DUNN: Here's what I want to do, if I
21 may, Ms. Markey. For us lay people trying very hard to
22 understand, obviously, the total implications of, A, what you
23 said, and B, certainly the complexities of the profession that
24 you've operated in now for a number of years, I just want to
25 give a quick lay person summary to see if my understanding is
26 somewhere in the ballpark.
27 Then I want to just cover real quickly, this is
28 the first opportunity that we've had to review these documents.
0159
01 We obviously need to take time and go through them.
02 Independently, I suspect, we'll have many follow-up questions at
03 a later date regarding those documents.
04 MS. MARKEY: Yes.
05 CHAIRMAN DUNN: But you and/or your counsel were
06 gracious enough to prepare a brief index to those documents as
07 well. I just want to touch upon them so I have a general
08 understanding of the various categories that are there.
09 My lay person's understanding, Ms. Markey, comes
10 down to as follows. In listening to the testimony of both Paul
11 and Matt earlier today, what I heard was there is the ability to
12 impact the price of natural gas through the control of the
13 capacity.
14 MS. MARKEY: That's correct.
15 CHAIRMAN DUNN: The PUC representatives testified
16 that there is another very important factor on price, and that
17 is the published indexes. And the PUC representative testified
18 how important the published indexes are to the PUC to accomplish
19 their tasks, as well as touching upon other important roles the
20 indexes play within the industry.
21 MS. MARKEY: Yes.
22 CHAIRMAN DUNN: You've been gracious enough to be
23 here for the past few hours. What I've heard you say is, in
24 addition to that control of the capacity as a means of impacting
25 price, the price can be impacted by, in effect, controlling the
26 published index prices through exaggeration of volume or price,

27 or under reporting, or not reporting at all.
28 And if we accept the PUC's testimony earlier,
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01 where those published indexes are in error, whether by
02 fraudulent means or other deliberate acts, it's going to have a
03 dramatic ripple effect on the pricing throughout the industry.
04 MS. MARKEY: Yes, that's a very true statement.
05 CHAIRMAN DUNN: I missed kind of the focus point
06 of what you've been saying this afternoon?
07 MS. MARKEY: For a lay person, you got it right
08 on target.
09 CHAIRMAN DUNN: Let me just cover real quickly
10 the index. If you could, Counsel, if you've got a copy, or
11 Michele, you're probably intimately familiar with it.
12 So we all have an understanding of what
13 generically is contained in the documents that were produced.
14 MS. MARKEY: We basically divided the documents
15 up into several different categories. Number one, examples of
16 widespread use of Gas Daily Index, for instance, from NPR
17 coverage, to the Massachusetts PUC, to FERC and the Cal ISO
18 themselves using Gas Daily prices in price mitigation.
19 Gas Daily indexes were intensely used throughout
20 not only the industry themselves, but also within regulatory
21 bodies throughout the United States.
22 CHAIRMAN DUNN: Let's go to the Cal ISO for just
23 a second.
24 MS. MARKEY: Sure.
25 CHAIRMAN DUNN: I believe you referenced that Cal
26 ISO used them for price mitigation.
27 MS. MARKEY: Yes. I said gas cost proxy.
28 CHAIRMAN DUNN: In lay terms, what does that
0161
01 mean?
02 MS. MARKEY: Basically it means that if they
03 didn't know exactly what the cost of gas was, they used a basket
04 of California indices in order to price out the gas component of
05 the cost of electricity.
06 CHAIRMAN DUNN: In other words, when you're
07 dealing with the cost of electricity for the Cal ISO, one of the
08 claims by the wholesale sellers of electricity was what they
09 claimed to be incredibly high cost of natural gas.
10 MS. MARKEY: Yes.
11 CHAIRMAN DUNN: And in the price mitigation,
12 determining what that gas price was, was important?
13 MS. MARKEY: Very important.
14 CHAIRMAN DUNN: And if that published gas index
15 price was artificially high, for example, it's going to impact
16 the mitigation process of the Cal ISO.
17 MS. MARKEY: Absolutely.
18 CHAIRMAN DUNN: All right. Again, we're just
19 flushing out for us lay folks.
20 MS. MARKEY: Sure.
21 The next category are the categories of the
22 possible price manipulation of the Gas Daily Index in which
23 there are actually a couple of significant e-mails and/or
24 letters and transcripts of conversations that we had with
25 several companies.
26 I'll frankly point out that the one that's
27 probably most critical in looking at this is the March 12th,
28 2001 transcript, where various electric traders at AEP called up
0162
01 David Behrman to complain that they did not want to see Enron On
02 Line included in our transactions. And the gist of the
03 conversation was that they knew that Enron was in the habit of
04 manipulating prices.

05 Later on, there is a letter where the particular
06 traders at AEP who had complained were, in fact, ex-Enron
07 traders who knew that Enron provided false information.
08 The next set of documents, there's also, let's
09 see, right. The next set of documents is Enron-related
10 documents.
11 CHAIRMAN DUNN: I'm sorry, Michele. I'm going
12 to take you back.
13 One that strikes my interest, and again, I know
14 that this is just a brief listing of the documents. June 28th,
15 2001, Duke Reduces Communications with Gas Daily. What is that
16 referring to?
17 MS. MARKEY: Duke used to send us a fax with all
18 of their prices. And at this time we were also asking them to
19 provide their forward market pricing, interestingly enough, at
20 the suggestion of Enron and several others. And they refused to
21 participate. In fact, were not wanting to give us any
22 information, didn't want us calling any of the traders.
23 They never would give us any other reason, other
24 than, just, we don't wish to talk with you.
25 CHAIRMAN DUNN: You reference, at Enron's
26 encouragement.
27 MS. MARKEY: Actually, in a lot of the particular
28 instances where Enron would come up -- this kind of relates to
0163
01 the next set of documents -- Enron was fond of calling us up and
02 asking us to either support new products that they were creating
03 or to actually create new price points based at their
04 direction. In the particular example --
05 CHAIRMAN DUNN: Wait, would you say that sentence
06 again.
07 MS. MARKEY: They were in the habit of calling us
08 up and asking us to promote certain products that they were
09 supporting, such as basis swaps, and they were also encouraging
10 us to actually set up particular price points.
11 CHAIRMAN DUNN: All right.
12 MS. MARKEY: And the one where it was a response
13 with Duke, I believe Duke was one of the parties that they
14 wanted us to talk to about doing a certain basis spot swap
15 product, and they had us actually get them to participate in
16 providing this information and price data for that.
17 Which does get us to the next set of
18 Enron-related documents, which is kind of two-fold. One, it
19 does talk about how Enron had to do with the creation of the
20 AECO Same-Day price hub. In effect, Enron gave us the
21 methodology and dictated to us how that price index was going to
22 be created. And we set it up at basically their behest.
23 Although we did encourage the industry to send us
24 their feelings about this, we basically went with the Enron
25 methodology on how to set up the particular AECO price point,
26 called AECO Same-Day.
27 CHAIRMAN DUNN: We'll call that the Enron Hub?
28 MS. MARKEY: A lot of people used to call us
0164
01 Enron Daily, and there was a reason for that.
02 In addition, throughout most of these e-mails,
03 there are detailed plans for establishing the electronic trading
04 indexes which, as I explained earlier, was initially going to be
05 a basket of all various different companies who reported
06 electronically, but ultimately became only EOL, and ultimately
07 was the whole reason why AEP quit reporting to us, because they
08 thought that Enron was going to be providing us false data
09 through that particular electronic index.
10 Additionally, this is what we ultimately tried to
11 audit Enron on, was their information that they provided to us

12 on this electronic exchange.
13 CHAIRMAN DUNN: Senator Johannessen.
14 SENATOR JOHANNESSEN: Thank you.
15 How many subsidiaries or businesses did Enron
16 control? Sounds to me like they're a spider sitting in the web,
17 and tentacles reaching out. And most of them, in order to
18 survive or whatever, that they would go along with Enron.
19 MS. MARKEY: Yes, actually there's another e-mail
20 incorporated in this set where it's an announcement that NGX,
21 which is the Canadian Exchange for AECO, also was planning to
22 include Enron On Line's numbers, as well as Houston Street,
23 which was another electronic exchange.
24 So they did -- they touched all of us.
25 SENATOR JOHANNESSEN: I appreciate that. I just
26 want to tell you, for a while now I have been listening to more
27 horse pucky than I like to think. It's refreshing to someone
28 filling in the blanks. We expected as much, but really
0165
01 appreciate someone coming out to do that.
02 MS. MARKEY: Thank you, sir.
03 SENATOR JOHANNESSEN: There's a lot of effort on
04 your part, I know, and it takes a lot of backbone to do it. I
05 just want you to know we appreciate it, because I think we've
06 got it pretty well lined up who the bad guys were, and I hope
07 that they get the appropriate due.
08 But I thank you personally, because I really
09 appreciate the fact that you come out to do this.
10 CHAIRMAN DUNN: Michele, there's one, and it's
11 your Number 10 under the Enron-related documents, December 1st,
12 2000, includes statements that producers prefer nontransparent
13 prices.
14 MS. MARKEY: Yes. Actually, this was an e-mail
15 that was supposedly a public document that was talking about
16 Enron's establishment of their on line exchange. And within the
17 e-mail, it talks about how Enron On Line was going to provide
18 more price transparency to the market, and that producers were
19 deathly afraid of Enron On Line, because for many years, they
20 enjoyed the benefits of nontransparent prices.
21 Frankly, I think that's rather than ironic in
22 this time and age that they would have made a statement like
23 that when, in fact, they were encouraging the exact opposite.
24 CHAIRMAN DUNN: If you'd continue going
25 through.
26 MS. MARKEY: Right.
27 I think that pretty much -- oh, there is one
28 other thing. Enron came to us in I believe it was March of
0166
01 2001, and they wanted us to start up another set of indices for
02 industrial products. They wanted us to get into pulp, paper,
03 lumber, metals. They had a whole grocery shopping list that
04 they wanted FT Energy to set up similar to the way we had set up
05 Gas Daily. And there's a significant amount of back and forth,
06 of us looking at that. And because we were in the process of
07 being acquired, we never took it any place.
08 CHAIRMAN DUNN: I think Mr. Drivon wants to hunt
09 some ducks.
10 MR. DRIVON: One of the commodities that they
11 were talking about indexing and trading was water; wasn't it?
12 MS. MARKEY: Yes.
13 MR. DRIVON: So now they're going to get indexes
14 going that make sure we stay warm enough, that we can see at
15 night, and we have something to drink.
16 And Enron, by the way, they weren't all by
17 themselves in all of this misreporting of prices, and of all
18 these other shenanigans we've been talking about. I mean, they

19 had company; didn't they?
20 MS. MARKEY: Yes.
21 MR. DRIVON: And that little list of ten suspects
22 up there is what you, in your opinion, believe their main
23 company to have been?
24 MS. MARKEY: Yes.
25 MR. DRIVON: We've talked a lot about Enron here,
26 but we're not doing that because we want to leave out anybody,
27 are we? We want to be fair.
28 MS. MARKEY: Well, the next set of documents that
0167
01 we have was some -- a board of discussions that we were having
02 with Williams.
03 Williams had a rather unique idea. They had a
04 whole list of Gas Daily price points that they wanted to
05 basically put in a basket and create a thing called the UE
06 Index, which I believe stood for Universal Energy.
07 And the only reason we didn't go forth with it
08 was because they were going to combine it with other data they
09 had internally, and they would not let me see the formula as to
10 how they were going to use our data as well as their own data.
11 So I said, until you provide me the actual formula, I'm not
12 going to give you the Gas Daily process.
13 Interestingly enough, on Energy News Live, which
14 is their website that they wanted to put this out -- and they
15 also wanted us to publish this index as well in their
16 publication -- they ended up publishing a UE Index.
17 And I can't tell you to this day how they used it
18 or why they used it, but I suspect it was going to be their kind
19 of answer of, here in arbitrage, we're going to use Gas Daily
20 basket and trade these baskets, and we're going to ask you to
21 buy on our UE Index, and guess what? We're the only ones who
22 know how the formula works, so we're kind of the ones holding
23 the bag, more or less.
24 So, we backed away from it.
25 So now, I don't mean to just necessarily point
26 out Enron, but Williams did try to jump in the ball game fairly
27 late as well.
28 CHAIRMAN DUNN: In other words, no really "trust
0168
01 us," justification.
02 MS. MARKEY: That's correct.
03 MR. DRIVON: Back to their moral imperative that
04 they were so responsive to; right?
05 MS. MARKEY: Yes.
06 Last but not least, one of the other attempts
07 while I was at FT Energy was, I thought if we at least put all
08 the individual transactions that people would report to us
09 during the day out on our real-time website, where people would
10 see the transactions as they were being reported, that maybe
11 people would be a little less likely to exaggerate or try to
12 manipulate prices.
13 That product was developed and was in beta
14 test. Several companies did very enthusiastically jump up and
15 become beta testers, two of which was Dynegy and El Paso.
16 Interestingly enough, when I went to Enron's
17 office, I only had a chance to demo in front of the techie guys.
18 I never got in front of the traders. And the techie guys just
19 didn't see any value in it.
20 But a number of the other trading houses saw
21 immediately. In fact, CMS Energy would have signed up had
22 ultimately the product been taken off the shelf.
23 So, one of the things that I believe Dynegy and
24 El Paso at least had the benefit of through the beta test was
25 that they could see each one of the individual transactions as

26 it was being reported, and ultimately knew what the ultimate
27 index would have been, which is actually where a lot this data
28 comes from that you guys now have, is from backups to the beta
0169
01 test.
02 MR. DRIVON: Let me take a wild guess.
03 This was an attempt that you were making to try
04 to get some mediation into this false reporting, manipulation
05 process; right?
06 MS. MARKEY: I was trying to show the Emperor's
07 clothes were not there.
08 MR. DRIVON: Yes, and my while guess is, you ran
09 into the same spot as the audit?
10 MS. MARKEY: Yes.
11 MR. DRIVON: And then because, or maybe because,
12 they didn't want you to have any more pipe dreams, they took you
13 off that desk.
14 You don't need to answer that question.
15 CHAIRMAN DUNN: Michele, I want to go to the last
16 category of documents that you've got listed, that you listed as
17 general. Just real quickly, the October 5th, 2000, Enron
18 Reliance Sole Contributors to Electric Forward Pricing Table,
19 what is that one?
20 MS. MARKEY: Oh, right. We were going to start,
21 or we did start, an electric forwards pricing table. And in
22 this, we established where some of the information was going to
23 be coming from.
24 And to get started, we were going to basically
25 just use Enron and Reliance faxes that they sent to us every day
26 in order to put forward a forwards market price. So, they would
27 basically be the two contributors giving us the prices.
28 CHAIRMAN DUNN: What I want to do at this point,
0170
01 I want to just take about five minutes so I can discuss with
02 both Larry and Chris if we have any follow-up questions, there
03 may be just a few. So, why don't we take just five minutes,
04 everybody, and then we'll wrap up quickly after that.
05 MS. MARKEY: Thank you.
06 [Thereupon a brief recess
07 was taken.]
08 CHAIRMAN DUNN: Why don't we get you back in and
09 try to wrap it up here. I have just a few questions first.
10 I want to go back to Gas Daily.
11 MS. MARKEY: Yes.
12 CHAIRMAN DUNN: To your knowledge, Ms. Markey,
13 was management at Gas Daily aware of the potential of
14 exaggerated reporting occurring, resulting in their publication
15 of incorrect data?
16 MS. MARKEY: Yes.
17 CHAIRMAN DUNN: And at any time are you aware
18 that they took any actions to correct that situation?
19 MS. MARKEY: I'm not aware of any.
20 CHAIRMAN DUNN: At any time did Gas Daily
21 undertake any efforts to investigate for future use to ensure
22 the accuracy of the data that it reported?
23 MS. MARKEY: As far as pursuing a plan?
24 CHAIRMAN DUNN: We could do it that way.
25 The question really is, okay, I'm Gas Daily.
26 I'm aware that we're getting inaccurate reports, exaggerated
27 reports.
28 MS. MARKEY: Yes.
0171
01 CHAIRMAN DUNN: From this point forward, did Gas
02 Daily take any steps to investigate the reports that it
03 received?

04 MS. MARKEY: Yes. There was an example. In
05 fact, in January 10th of 2001, this is one of the letters, and
06 it had to do with price discovery in Chicago. And we had a
07 utility complain bitterly about the high prices. And we went to
08 Enron, and to Aquila, Reliant, PG&E, National, and tried to get
09 them to give us their transactional data.
10 CHAIRMAN DUNN: And they would not?
11 MS. MARKEY: And they would not.
12 CHAIRMAN DUNN: And that was the end of that
13 investigation?
14 MS. MARKEY: That's as far as you can normally
15 take it.
16 CHAIRMAN DUNN: So, despite the fact that it
17 couldn't even complete its investigation, it just continued
18 publishing its data in the same way?
19 MS. MARKEY: Yes.
20 CHAIRMAN DUNN: To your knowledge, did FERC or
21 any state PUC, for that matter, ever question the validity of
22 the prices reported in the indexes?
23 MS. MARKEY: No. As a matter of fact, they
24 thought they were the most accurate out there. In fact, when
25 FERC chose Gas Daily, they chose Gas Daily over several other
26 publications because, supposedly, the prices were so accurate
27 and reliable.
28 CHAIRMAN DUNN: Do you know if any entity ever
0172
01 complained or reported to FERC its concerns about the inaccuracy
02 of the Gas Daily published prices?
03 MS. MARKEY: I'm not personally aware, no.
04 CHAIRMAN DUNN: Have you heard that through any
05 source, that someone may have complained to FERC directly?
06 MS. MARKEY: I've heard, but I don't know any
07 specifics.
08 CHAIRMAN DUNN: Are you aware if FERC ever made
09 inquiry to Gas Daily about the accuracy of its published prices?
10 MS. MARKEY: No, not that I'm aware of.
11 CHAIRMAN DUNN: I know you're not there now, but
12 have you heard even up to today whether FERC has explored this
13 issue?
14 MS. MARKEY: Yes, they actually have subpoenaed
15 Platts for documents regarding prices.
16 CHAIRMAN DUNN: Do you know approximately when
17 that subpoena was served? Again, I know you're not there.
18 MS. MARKEY: Sometime in September.
19 CHAIRMAN DUNN: So, several months ago.
20 MS. MARKEY: Yes.
21 CHAIRMAN DUNN: Any other subpoenaes that you are
22 aware of that have been issued on Platts from any source?
23 MS. MARKEY: Not that I'm aware of.
24 CHAIRMAN DUNN: Mr. Drivon.
25 MR. DRIVON: I just want to take this opportunity
26 to say that I personally, and on behalf of all the rest of us
27 who have worked on this for so long, because as you know, this
28 Committee has been working on this piece for almost a year now,
0173
01 and I want to express my personal appreciation to you for the
02 courageous move that you've made in coming forward with these
03 documents and this testimony.
04 I suspect and I believe that you suspect that
05 there may be some personal price that you'll have to pay for
06 having done this. And I want to tell you that I recognize and
07 commend you for what I believe to have been a very valuable
08 public service, not only to the people of the State of
09 California, but to the people across the United States, because
10 this is an issue that most people don't realize the magnitude of

11 in terms of what it costs each individual person and the
12 economy.
13 So, thank you very, very much.
14 MS. MARKEY: Thank you.
15 CHAIRMAN DUNN: Michele, I want to underscore
16 what Larry just said. As indicated, I think we met quite
17 sometime ago now, and we've had many discussions along the way.
18 You've been a tremendous source of education, I
19 know, for those of us who have dealt with you. I, too,
20 appreciate the fact that you've come forward today.
21 Counsel, it's also my understanding that we're
22 going to keep this record open, and that there will be a
23 follow-up submission. Counsel, if you would comment, please.
24 MR. KIRTLAND: That's correct. We're going to
25 submit a set of the documents that we gave you that's base
26 leveled, so there'll be individual sequential numbers.
27 And then, there will also be, perhaps, any
28 further important points that Michele thinks is necessary to put
0174
01 on the record.
02 Our understanding is, once we make that
03 submission, which should be in the next couple of days, then the
04 record will be closed.
05 CHAIRMAN DUNN: Yes. We will, as we oftentimes
06 do here as we'll do today, we will not adjourn the meeting. We
07 will recess, and the submission that you're referring to will be
08 considered part of Michele's testimony, subject to the same
09 contiuums as we talked about at the outset of her testimony
10 regarding this presiding officer compelling that testimony under
11 9410, and then the same rights and remedies applying to that as
12 well. It will be a continuation of her testimony.
13 MR. KIRTLAND: Correct.
14 CHAIRMAN DUNN: And then the record will be
15 closed at that point in time.
16 Mr. Drivon.
17 MR. DRIVON: Unless the Committee decides that
18 further testimony may be valuable, in which case we will notify
19 you so that arrangements can be made for further response to the
20 subpoena.
21 CHAIRMAN DUNN: And it will be, of course, done
22 through you, Counsel.
23 MR. KIRTLAND: Right, that's fine. You have our
24 contact information.
25 MR. DRIVON: What I want to be sure we do is that
26 we don't foreclose further testimony by this witness without the
27 necessity of further subpoena. We don't envision that at this
28 point, but that may be, and if it is, we will contact you to
0175
01 arrange for that at a convenient time.
02 MR. KIRTLAND: That's fine.
03 CHAIRMAN DUNN: Let me close simply by offering
04 a heart-felt thank you to you, Michele, for coming here today.
05 I know you've come a long way.
06 Counsel, I know you've come a long way.
07 Also to Paul and to Matt. You two have also come
08 an extraordinarily long way to assist the Committee today in our
09 continued investigation and understanding of what occurred here
10 in California. It helps tremendously as we move forward with
11 crafting legislative solutions here at the state level.
12 Also to Bill and to Trina as well from the PUC,
13 we appreciate your presence here as well.
14 Without anything further from the Committee, we
15 are recessed at this time. Thank you.
16 [Thereupon this portion of the
17 Senate Select Committee hearing

was terminated at approximately.
4:55 P.M.]

--ooOoo--

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CERTIFICATE OF SHORTHAND REPORTER

I, EVELYN J. MIZAK, a Shorthand Reporter of the State of California, do hereby certify:

That I am a disinterested person herein; that the foregoing transcript of the hearing of the Senate Select Committee to Investigate Price Manipulation on the Wholesale Energy Market was reported verbatim in shorthand by me, Evelyn J. Mizak, and thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said hearing, nor in any way interested in the outcome of said hearing.

IN WITNESS WHEREOF, I have hereunto set my hand this _____ day of _____, 2002.

_____

EVELYN J. MIZAK
Shorthand Reporter

WINTER 2002-03

2003 NATURAL GAS MARKET ASSESSMENT

STAFF REPORT BY THE

OFFICE OF MARKET OVERSIGHT AND INVESTIGATIONS

FEDERAL ENERGY REGULATORY COMMISSION

WINTER 2002-03

PREFACE

This market assessment results from the Federal Energy Regulatory Commission's (FERC) committee to identify and monitor the significant issues facing wholesale electric and natural gas markets.

The assessment focuses primarily on natural gas. The Office of Market Oversight and Investigations (OMOI) seeks to identify issues important to customers and market participants and to signal the areas of greatest concern and vigilance for the Commission at this time. The Federal Energy Regulatory Commission created the OMOI in April 2002 to focus its efforts in energy market oversight. Any errors are the responsibility of the OMOI alone and not of the Commission as a whole.

We encourage readers to provide feedback on this OMOI product by sending comments to an e-mail address specifically set up for this report, natural.gas.assessment@ferc.gov, or by contacting staff referenced in the acknowledgements. They can be reached as follows:

Office of Market Oversight and Investigations
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426
202-502-8100

A fair energy marketplace is everyone's responsibility. Please do your part. If you encounter inappropriate energy market behavior, contact our Enforcement Hotline toll-free by telephone at 1-877-FERC-MOI or via e-mail at hotline@ferc.gov.

Thank you,

WILLIAM P. HEDERMAN
Director
Office of Market Oversight and Investigations

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2003 NATURAL GAS MARKET ASSESSMENT

The North American natural gas marketplace has shown itself to be remarkably robust through the many trials of recent years. Nevertheless, wholesale natural gas markets face challenges as 2003 gets underway. Quick, thoughtful and effective action can address these challenges successfully and can maintain the benefits of a competitive natural gas industry for customers and the overall economy.

The healthy functioning – or distress – of natural gas markets has profound effects on the overall economy. In 2001, customers spent $142 billion on natural gas in the United States,[1] about 1.4 percent of the gross domestic product.[2] Almost one-quarter of the natural gas sold was used by residential customers.[3] The average annual natural gas bill for residential customers that year in the contiguous 48 states, stated in 2002 dollars, was $844.[4] Other uses include the generation of electricity and the manufacture of other goods and services and for transportation fuel.

Competitive forces have created benefits for natural gas customers. Reform of natural gas markets in the United States by Congress and the Federal Energy Regulatory Commission generated significant customer benefits over the past quarter century. Prior to passage of the Natural Gas Policy Act (NGPA) of 1978,[5] the natural gas industry faced chronic supply shortages arising from uneconomically low regulated wellhead prices.

Wellhead prices are prices paid by producers at the well, before the gas enters an interstate pipeline.

The NGPA permitted suppressed market forces to work by phasing out price caps on wellhead natural gas prices. During the late 1970s and in the early 1980s, prices rose to meet high interim price caps as an incentive for drilling for more supply. By the latter half of the

[1] OMOI analysis of statistics compiled by the Energy Information Administration and published in *Natural Gas Monthly*, December 2002

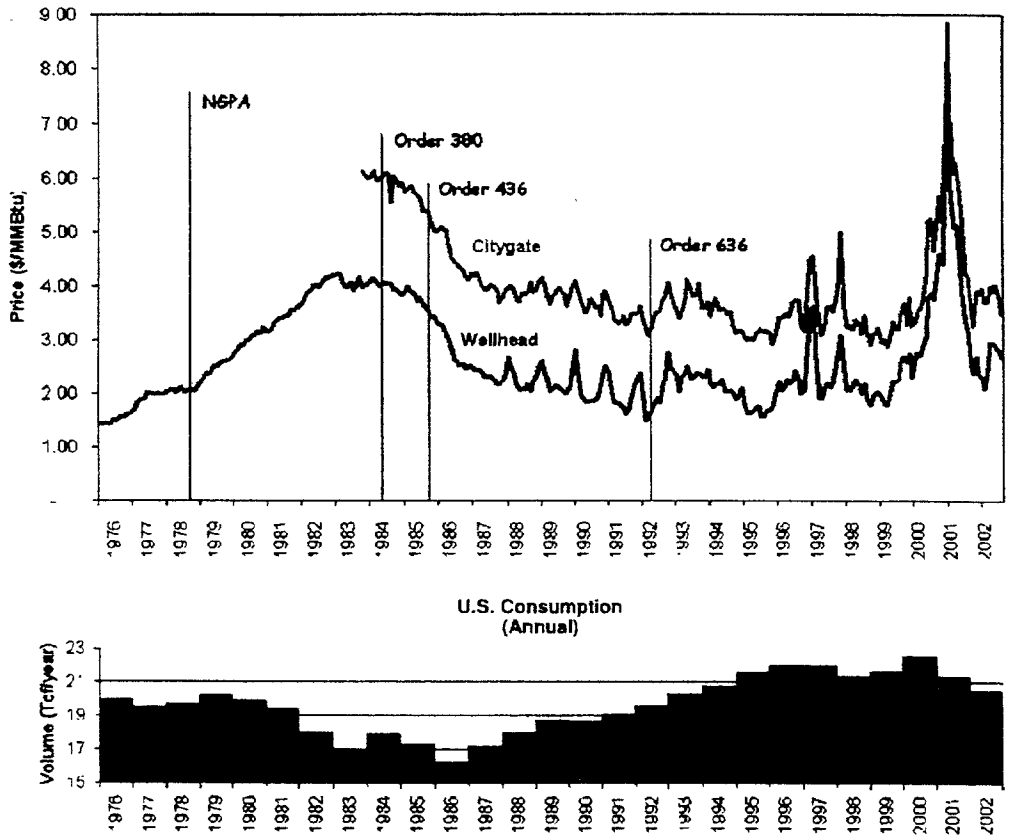
[2] U.S. Department of Commerce, Bureau of Economic Analysis, National Accounts Data, "Current-Dollar and 'Real' Gross Domestic Product," at www.bea.gov

[3] Energy Information Administration, *Natural Gas Annual 2002*, Table 1, "Summary Statistics for Natural Gas in the United States, 1996-2000," pp. 5-6

[4] Energy Information Administration, Natural Gas Use in American Households, at www.eia.doe.gov/emeu/consumptionbriefs/recs/natgas/nat_gas_piece.html. 2002 value was derived from EIA estimate of $10.07 per Mcf residential fuel cost at 1997 residential consumption level of 83 Mcf. OMOI inflated this value using a 1% GDP deflator obtained from the U.S. Department of Commerce, Bureau of Economic Analysis

[5] 15 U.S.C. 3301-3432

Figure 1: Natural Gas Market Growth and Price Moderation After Passage of the NGPA (1976-2002, in 2002 Dollars)



Sources: Energy Information Administration at www.eia.doe.gov, Bureau of Economic Analysis at www.bea.gov

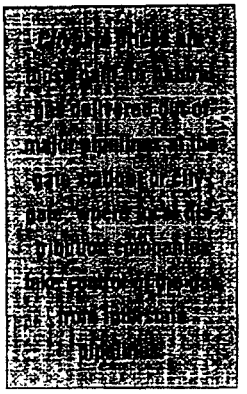
> The spot market is the natural gas market for commercial commodities that are short-term (usually a month or less) and that begin in the near future (usually the next day).

1980s, prices fell in direct response to oversupply. That oversupply lasted through most of the 1990s. Figure 1 tracks prices through this period, showing how they rose and fell.

Subsequent Commission orders that addressed evolving market conditions, including Order Numbers 380 (1984), 436 (1985) and 636 (1992), contributed to the efficient operation of market forces to benefit customers. Order 380 enabled utilities to purchase spot market gas, and Orders 436 and 636 provided for open access on pipelines, ended bundled pipeline sales service and introduced capacity release and other innovative rate designs.

In 2000 and 2001, natural gas prices rose for slightly more than a year. That price pattern marked the end of more than a decade of oversupply within the production segment of the North American gas market, and it was driven by a variety of factors. These market-changing factors included a tighter supply-demand balance, regional occurrences of pipeline congestion and participant behavior, factors we will discuss in greater detail later in this assessment.

With the exception of the period of the price plateau, real wellhead prices have remained below those of the early 1980s. Figure 1 also shows that competitive markets have brought close to 20 years of moderate prices for gas delivered to the citygate. Importantly, competitive markets have increased the efficiency of long dis-



tance transportation. The wholesale delivery cost of natural gas – the difference between citygate and wellhead prices – has fallen in real terms about 40 percent between 1984 and 2002, a compound reduction of 2.8 percent per year.

The Commission's Office of Market Oversight and Investigations (OMOI) has prepared this report to provide the Commission and the public with an assessment of current developments, trends and issues in natural gas markets. In particular, OMOI explores the effectiveness of competition in natural gas markets and focuses on industry and government actions to address any problems or identified threats. This assessment does not release privileged information related to current investigations; it does discuss current issues and industry, regulatory and investigatory efforts to deal with these issues.

The Issues

Based on our analysis, OMOI considers the five most pressing concerns for natural gas markets as of the winter of 2002-03 to be:

1. ***Deteriorating financial conditions of market participants***
Natural gas companies heavily engaged in trading – in a trend shared with electric traders – are in the forefront of a traumatic financial shakeout. Many past leaders of energy trading are either out of business or retrenching Their problems have adversely affected other natural gas companies as well. This serious financial situation could cause price increases and (in the longer run) delivery problems for natural gas customers. Thus far this winter, however, there have been no reports of significant delivery problems.

2 ***Managing credit exposure***
Managing credit is one of the most important components of long-term financial health of energy market participants. Poor risk management of credit exposure contributed to recent financial problems New approaches to managing credit that have not been extended to energy markets in the past are being introduced to natural gas companies. Introducing these sophisticated new tools in effective ways will be critical for the successful control of risk associated with volatile natural gas prices.

3. ***Shaken confidence in price discovery methods***
Reports of wash trades and intentional false reporting of transactions and prices by industry sources over the past half-year have undermined the credibility of published natural gas price indexes. Given the importance of these indexes to customer confidence as well as to the functioning of many natural gas contracts, the industry must respond effectively.

4. ***Continuing need for efficient investment in infrastructure***
The natural gas industry requires ongoing investment to maintain adequate supply, delivery facilities and operational flexibility. As competitive markets for natural gas have evolved, they have provided a basis for investment designed to benefit customers and provide adequate returns from facilities' market value. Assuring adequate investment in infrastructure aligned with competitive market forces is a critical and continuing need for the natural gas industry.

5. ***Continuing potential for manipulation***
The potential for manipulation of energy markets remains a concern. Without proper monitoring, the likelihood of successful manipulation could increase under the current tight supply conditions. Market manipulation can adversely affect the dependability, affordability and competitiveness of gas markets. Solutions require a commitment to vigilant oversight.

The remainder of this assessment will focus on each of these challenges We document the issues and present highlights of current efforts by industry and the Commission to resolve them.

OMOI considers the issues facing the effective competitive functioning of the industry to be manageable. Both industry participants and regulators must seek out and aggressively promote solutions to assure efficient, cost-effective and reliable natural gas service to all U.S. customers.

Issue 1 DETERIORATING FINANCIAL CONDITIONS OF MARKET PARTICIPANTS

The energy sector faces unprecedented financial challenges. While initially affecting trading companies, financial stress has touched electric utilities, pipelines and distributors as well. In response to these new challenges, some companies have abandoned energy trading. Having fewer, less financially strong market participants could result in the less-efficient functioning of competitive energy markets. We will focus on the effects on natural gas markets, though these conclusions could extend to electricity as well.

The Situation

Financial weakness currently extends across many industries. Every segment of the energy industry important to the Commission's jurisdictional markets has recently experienced difficulties. Figure 2 shows 2002 changes in stock prices for a group of 111 key market participants in the energy sector. Financial conditions for the energy sector overall deteriorated dramatically in 2002

Problems for companies heavily engaged in natural gas trading are even greater than they appear in Figure 2. While Figure 2 groups companies by service, energy companies often tend to be integrated across fuel and activities. This point deserves a brief discussion. The group of companies identified as predominantly natural gas distributors has seen almost no reduction in share values, but these companies have not been at the forefront of natural gas trading Pipelines ("mid-stream gas" in Figure 2) and electric wholesalers ("utility parent w/significant wholesale"), which were far more likely to be active in natural gas trading, have dropped substantially in value.

In 2001 and 2002, energy traders revealed a variety of impropriety in financial reporting and trading activity The malfeasance initially associated with Enron, and to varying degrees with other specific energy trading companies, has led to the financial challenges that now confront the entire industry. Market discomfort remains, a natural response to uncovered deceptions and to numerous ongoing investigations of trading activity by government agencies.

The difficulties have cascaded to debt-holders, reducing company credit ratings. Rating downgrades by the major rating agencies – Standard & Poor's (S&P), Moody's and Fitch – recognize this financial stress and contribute to the challenge Figure 3 shows the trend toward downgrades for energy companies by S&P.

There is potential for further financial instability stemming from the amount of energy-company debt scheduled to be renegotiated over the next few years. Figure 4 shows the maturities of long-term debt for selected classes of energy companies Overall, about a third of long-term debt will mature for energy companies over the next five years, from 2003 through 2007 Short-term debt maturities will put additional stress on the system. It is likely that some companies will not be able to manage through these debt maturities and will fail Many of these companies are active participants in the natural gas market.

To manage investor and debt-holder concerns about viability, many companies either withdrew from or announced reductions in energy trading activity in late 2001 and in 2002, including:

- Allegheny Energy
- American Electric Power
- Aquila
- Calpine
- CMS
- Dynegy
- El Paso Energy
- Enron
- IdaCorp
- Mirant
- PG&E
- Reliant
- TXU
- USB Warburg
- Williams

Figure 2: Most Energy Stock Prices Declined in 2002

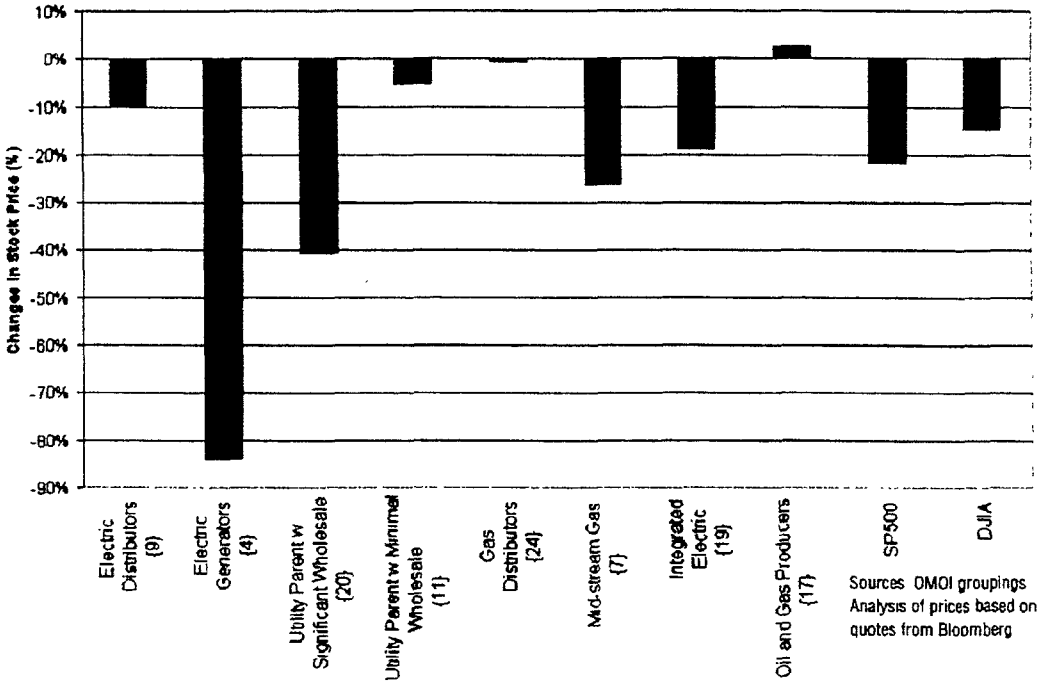
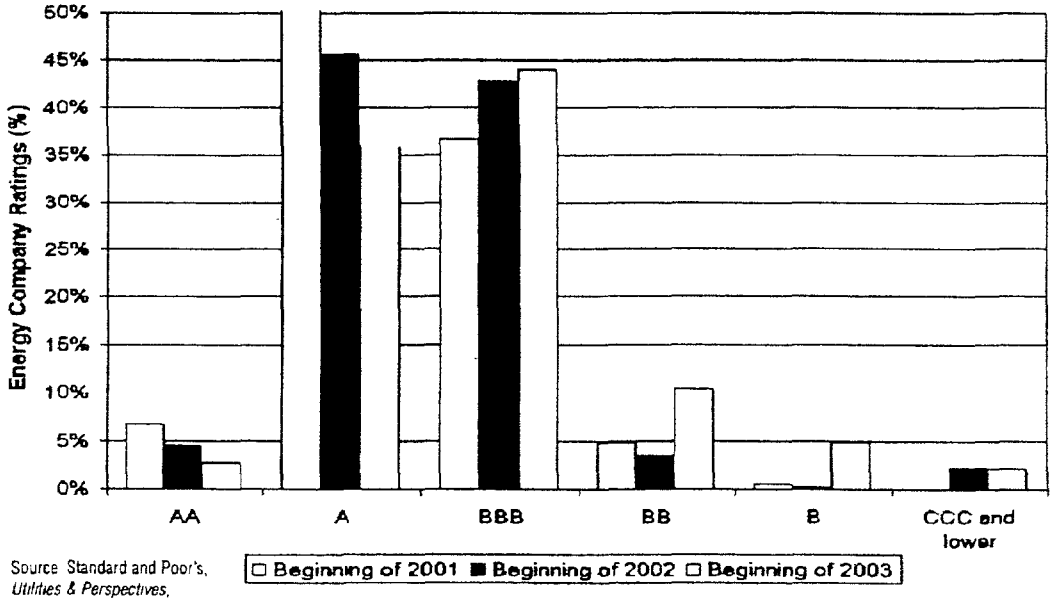
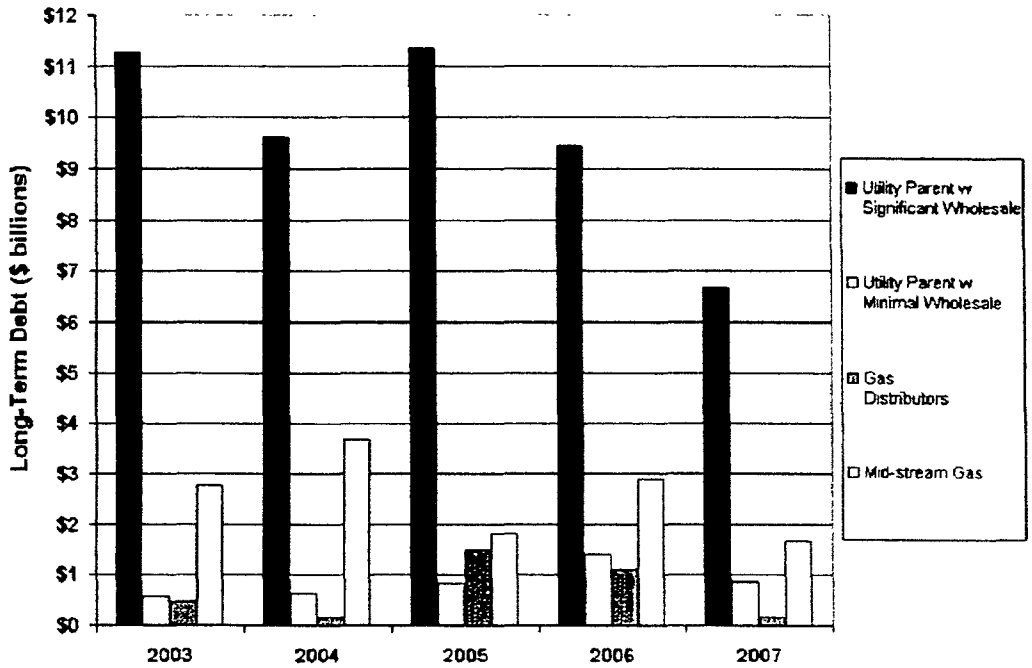


Figure 3: Decline in Quality of S&P Energy Company Ratings, 2001–2003



Source Standard and Poor's, *Utilities & Perspectives*, January 20, 2003

Figure 4: Magnitude of Long-Term Debt Coming Due for Energy Companies in the Next Five Years



Source OMOI groupings Analysis of debt projections based on data from Bloomberg.

Market liquidity *describes the ease with which a buyer can buy or a seller can sell at the prevailing price in a marketplace.*

Market power *can include the ability of a firm to the ability of a firm to raise its price or withhold its output with the effect of raising market prices above competitive levels for a sustained period of time.*

Deterioration in the financial condition of energy companies has many serious implications for natural gas markets, such as:

Companies ceasing natural gas trading can impair markets and cause higher prices for consumers. The reduction in the number of energy traders in the marketplace reduces market liquidity – the ability of a market participant to buy and sell readily in a marketplace at a prevailing price

The reduction in the number of natural gas traders is particularly troublesome in the natural gas marketplace because there are so many regional markets, already somewhat illiquid due to fragmentation. Dividing these markets by fewer traders can give remaining traders market power, permitting them to increase above competitive levels the difference between what they are willing to pay sellers and demand in payment from buyers. Some difference in prices paid and charged – the bid-ask spread – is necessary for traders to exist. In particularly thin markets, however, if a trading company increased the bid-ask spread beyond competitive levels, it could be exercising inappropriate market power

Bid-ask spread *is the difference in price between what a buyer will pay for a commodity and what a seller charges for it.*

Agency agreements *allow traders to manage their customers' natural gas assets as agent in exchange for the additional value they derive from them.*

Reduced use of agency agreements can shift risk away from marketers and toward consumers. Through agency agreements (also known as asset management contracts), natural gas traders contract with gas purchasing companies such as natural gas distributors and electric generators to manage their fuel supply

portfolios, including pipeline transmission, storage assets, daily purchases and seasonal supply. These agreements allow natural gas purchasing companies and their customers to share profits derived from remarketing unused capacity and supply with the marketer. At the same time, the marketer assumes some of the associated price risk and ensures availability.

Competition for agency agreements among marketing companies had, until the recent collapse of the business, been intense. But as merchants abandon wholesale trading, the number of asset management arrangements between trading companies and distribution companies is declining.[6] This decline will shift many of the risks the marketers had been bearing back to their customers, many of whom may not have the necessary risk management skills. Depending on the trading ability, planning skills, regulation and financial incentives of utility staff, price risks to end-use customers may increase.

Constrained finances could lead to deferral of necessary infrastructure maintenance, harming reliability. As we have seen, energy companies often are integrated across functions, so energy traders often have pipelines or electric utilities as affiliated companies. There are indications – most recently from Williams[7] – that trading-related financial problems can cause personnel cutbacks in regulated affiliates. Lack of maintenance could decrease service or safety.

Constrained finances could lead to deferral of infrastructure builds. The erosion in industry funding may eventually hinder development of additional energy infrastructure. Recent credit downgrades mean higher interest rates and costlier projects. Energy companies are finding it difficult to complete costly new power plant projects. Delays and cancellations have increased.[8] These delays and cancellations can affect the efficacy of pipeline expansion.

Actions

Both industry and government agencies can help resolve financial issues related to natural gas companies

[6] OMOI conversations with multiple market participants in fall 2002 and winter 2002-03

[7] "Williams Cutting Jobs at Pipelines Amid Losses at Trading Units," Bloomberg News Wire, November 27, 2002

[8] "U.S Energy Sector Has Hit a Credit Crisis, S&P Reports," Rebecca Smith, *The Wall Street Journal*, October 14, 2002

Industry Actions

Where possible, market participants are working constructively to address their own deteriorating financial condition as well as manage deterioration in the financial strength of the companies with which they do business. These efforts include:

Improving finances. Natural gas players are cutting costs, renegotiating debt, selling assets and making other adjustments to improve financial strength. Many have announced asset sales, raising concerns that forced sales may be under-valuing these assets. However, firms with strong finances are acquiring good assets. For example, Mid-American Energy Holdings (owned by Berkshire Hathaway) purchased two large pipelines in 2002, the Kern River Gas Co., from Williams, and Northern Natural Gas Pipeline, a former Enron asset, from Dynegy.[9]

Developing best practices for energy trading and general business behavior. Since late spring 2002, industry has sponsored several efforts to improve industry performance in energy trading. These include:

▶ Chief risk officers from more than 30 integrated energy companies (most of which have energy merchant arms) formed the Committee of Chief Risk Officers (CCRO) to develop recommendations for best practices.[10] Among the CCRO's recommendations are financial disclosures more informative than the minimum required by the Securities and Exchange Commission (SEC), enhanced approaches to managing credit among traders, active use of state-of-the-art approaches to monitoring the risks taken on by corporations through energy trading and strict governance and control procedures.

▶ In June 2002, the Electric Power Supply Association (EPSA) launched an initiative directed by a high-level steering committee to describe and codify ethical standards for the power supply and trading industry. EPSA will require certification of these standards as a condition of membership.[11]

[9] Berkshire Hathaway has indicated that it has $10 billion to invest in energy assets. See "Editor's Notebook," Jeff Share, *Pipeline & Gas Journal*, January 2003

[10] www.ccro.org/bestprac.html

[11] Electric Power Supply Association, "Code of Ethics and Sound Trading Practices for Electric Power Suppliers," at www.epsa.org/Positions/index.cfm?section=positions

▶ Seven brokers formed the Energy Brokers Association[12] to establish best practices and standards of conduct and to engage in other efforts to help restore confidence in the energy financial markets.

Increased use of exchanges. Initially, natural gas trading took place between buyers and sellers on telephones. In 1990, the New York Mercantile Exchange (NYMEX) introduced natural gas futures trading with a product associated with an existing liquid cash market at Henry Hub in Louisiana. Other attempts at exchange-traded futures contracts for natural gas have failed, but the Henry Hub contract remains and the terms of its trading contracts continue to lengthen, indicating greater faith by participants in this forward market.

NYMEX saw a record year in 2002 for natural gas futures volumes; more contracts were traded than for any other physical commodity but oil. The year-over-year increase in trading natural gas futures contracts was 48 percent, rising to 24.4 million contracts traded. The high level of trading is a positive sign for natural gas, possibly signaling a move by remaining natural gas traders away from the telephone and toward the visible, secure trading of a regulated exchange.

Other NYMEX trading data yield mixed signals. Figure 5 shows the level of open interest in the NYMEX Henry Hub natural gas market at the opening of each month in 2001 and 2002. Open interest is a good measure of how actively companies are participating in the futures market.

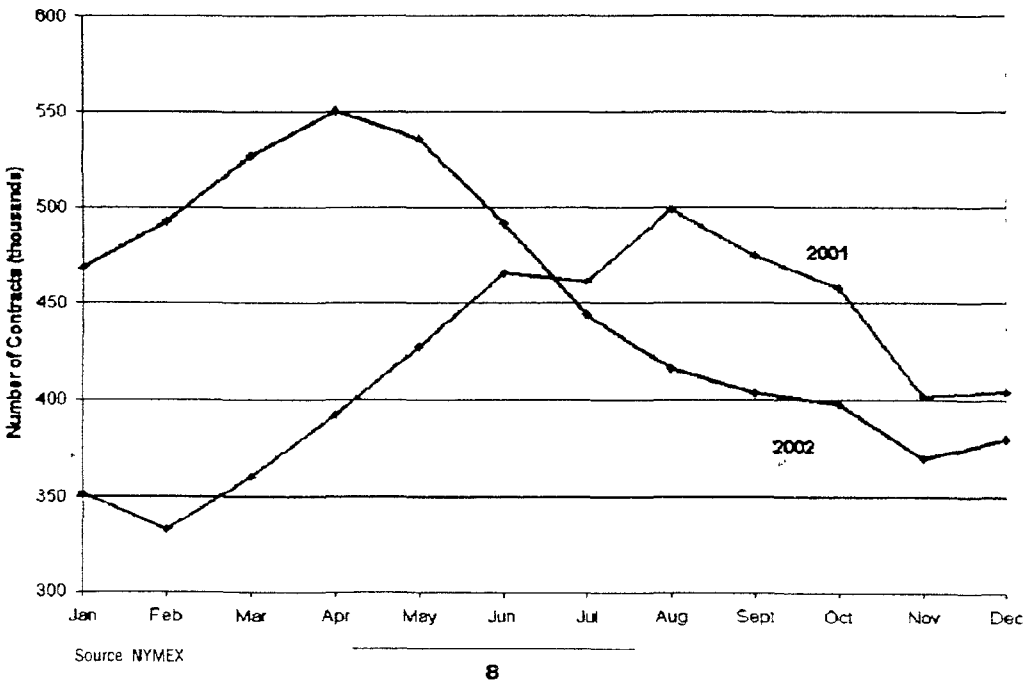
Open interest is the number of contracts that are still outstanding at a particular time for a particular futures contract.

Figure 5 shows that open interest in a month-to-month comparison has been higher in the first half of 2002 compared to 2001 and lower in the second half of 2002 compared to 2001. The pattern suggests that natural gas market participants began to reduce their activity in April 2002, four months earlier than the apparently seasonally driven reductions starting in late 2001.

In August 2000, a number of active energy traders launched the IntercontinentalExchange (ICE), which manages trading of a variety of physical natural gas and electric contracts[13]. ICE reports more than 100 equity partners, including energy and metals traders, brokers and

[12] The seven are Amerex, APB Financial, GFI Group, Natsource, Prebon Energy, Starsupply Petroleum and TFS Energy. Further information is available at www.energybrokersassoc.org.

Figure 5: Recent Relative Decline in Nymex Natural Gas Open Interest



Source NYMEX

bankers. ICE also reports that its trading system is installed on more than 6,000 desktops, with the capability to trade more than 600 products in metals, petroleum, natural gas and power[14] Figure 6 shows the activity in natural gas volumes traded on ICE.

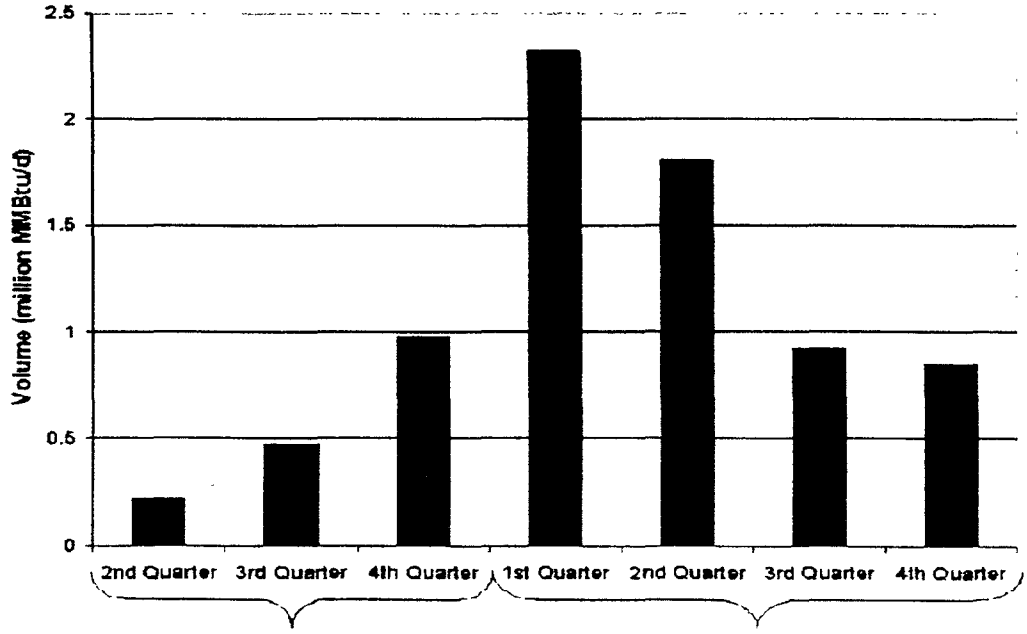
Encouraging new entrants. New entrants, mainly financial players, are increasing their energy trading activity to provide risk management services and liquidity, supplementing the physical deliveries and energy trading of asset-based marketers. Banks and brokerage firms have financial stability, good credit ratings and cash, reducing the need for large borrowing and debt levels. They also have hedging and trading experience with other commodities that can be leveraged into diversified energy markets. Other advantages they bring include experience with regulatory bodies and tight risk control processes. Companies increasing their activity or entering energy trading include:

- American International Group
- Bank of America
- Centarus Energy
- Citadel
- ConocoPhilips
- Credit Lyonnais
- Goldman Sachs
- Louis-Dreyfus
- Morgan Stanley
- RWE

The positive effects of this new participation do not yet represent successes that balance the recent failures of trading leaders OMOI expects that the services provided by the new entrants will be more expensive than past offer-

[13] ICE's original equity partners included BP Exploration & Oil Inc., Deutsche Bank Sharps Pixley Inc., Goldman Sachs Group Inc., MS Capital Group Inc. (Morgan Stanley), Societe Generale Financial Group, ST Exchange Inc. (Royal Dutch/Shell Group) and TFE Investment Inc. (TotalFinaElf). It was later joined by AEP Energy Services, Aquila Southwest Processing LP, Duke Energy Trading Exchange LLP, El Paso Merchant Energy Holding Co., Mirant Americas Energy Marketing LP and Reliant Energy Trading Exchange Inc. ICE acquired London's International Petroleum Exchange (IPE) in mid-2001.
[14] www.intcx.com/about.html.

Figure 6: Growth in Physical (Day-Ahead Henry Hub) Natural Gas Volumes Traded on ICE Was Affected by Trading Downturn



Note ICE trades at areas other than Henry Hub, but because Henry Hub has existed the longest, OMOI is using it as a representative point to illustrate our line of reasoning

Source www.intcx.com/Subscriber?operation=gasIndexForm&hub=All

ings because they will likely incorporate more realistic credit risks into prices. Companies such as Enron and Dynegy were determined to create liquid markets in energy necessary for meeting their growth projections and profitability.

Together, these industry actions indicate a significant effort to address the financial challenges that natural gas markets face today. As long as that commitment continues, it provides a positive indication that these issues can be resolved.

Commission Actions.

Within the scope of its authority, the Commission seeks to play a positive role in the resolution of these financial issues. As the year progresses, the Commission plans the following actions to address deterioration in the financial condition of natural gas market players:

The Commission will continue to make policy as necessary to address the ramifications of the deteriorated financial condition of the industry.

Recent efforts include:

- Development of guidance on cash-management practices between regulated subsidiaries and their parent companies.
- Establishment, on a case by case basis, of the creditworthiness standards that interstate pipelines may require in their tariffs.

The Commission will continue to monitor the financial health of natural gas companies, with significant consideration of the implications of financial difficulties on the safe and dependable delivery of natural gas to customers.

OMOI will continue to monitor the behavior of natural gas markets, with particular concern for the reduction of market liquidity due to exits from natural gas trading and with attention to the potential for parent companies that are in financial straits to undermine the financial strength of unregulated subsidiaries.

Issue 2 MANAGING CREDIT EXPOSURE

Credit management approaches used in financial markets – approaches not extended to energy markets in the past – are being adapted and used in natural gas and electric markets. Given the large cash flows associated with energy contracts, managing credit well is one of the most important drivers of long-term financial health of energy traders. Using credit tools in effective ways will be critical for success.

While generally valuable, some of these new approaches are not well understood and their misuse could have unintended consequences. In particular, certain uses of credit clearing techniques have more limited benefits than is generally understood by energy-market participants. The first step toward a better credit management structure for the industry is better understanding of the available tools.

The Situation

One novel credit tool is over-the-counter (OTC) credit clearing. OTC transactions are not traded on exchanges, but are negotiated between two parties. Table 1 compares over-the-counter trading to exchange and bilateral deals. However, unlike other contracts negotiated between buyers and sell-

Credit clearing is a mechanism for netting mutual claims, the result of which is that one risk taker comes by money due to fulfill its contract is pooled among many companies.

Table 1: Characteristics of Types of Trading

Bilateral	OTC	Exchange-Based
Contracts are negotiated directly between the two contract counterparties.	Contracts are negotiated via a broker who helps the two parties find each other and reach agreed terms.	Deals are made through a multilateral exchange, which provides a managed marketplace
▶ Contracts are often highly customized, and of long duration. ▶ Trading counterparties are known to each other. ▶ Pricing is opaque ▶ Execution is lengthy and expensive. ▶ Credit protections are customized and negotiated as part of the contract.	▶ Contract parameters can vary significantly, though customization is generally allowed. ▶ Anonymity of trading varies widely. ▶ Pricing is opaque ▶ Execution time and cost can vary significantly. ▶ Credit protections are customized and negotiated as part of the contract.	▶ Contracts are highly standardized. ▶ Trading is anonymous. ▶ Execution is quick and cheap. ▶ Processes often exist to safeguard market integrity. ▶ Credit exposure is to the exchange member, who is protected from other members through mandatory credit clearing mechanisms

Source: Office of Market Oversight and Investigations

ers – known as bilateral contracts – OTC trades are sufficiently standardized that they can be assigned readily to others.

Until recently, market participants relied on the credit quality of their counterparties to back each bilateral transaction. Not many used contractual provisions to net transactions between counterparties to limit financial exposure to each other.

Even fewer used a central clearing entity, or clearinghouse, to do multilateral netting to further limit credit exposure, where the clearinghouse would be backed by an entire group of financially strong clearing or participating members.[15] However, the International Swaps and Derivatives Association (ISDA), the Edison Electric Institute (EEI) and other industry groups have recently developed standardized agreements to enable greater use of bilateral netting across multiple transactions to limit exposures between two counterparties.

(EEI) and other industry groups have recently developed standardized agreements to enable greater use of bilateral netting across multiple transactions to limit exposures between two counterparties.

OTC credit clearing is still in its formative stages in the United States, having been established by the Commodity Futures Modernization Act of 2000. Since early 2002, Nymex and ICE have offered OTC credit clearing services for transactions executed in OTC markets in addition to their exchange-traded energy services. According to NYMEX representatives who spoke with OMOI staff, from May 31 through the end of 2002, Nymex cleared more than $5 billion worth in notional value of transactions that were executed in OTC markets and converted into futures contracts during the NYMEX clearing process. Similarly, ICE representatives stated that, starting in March, ICE cleared notional value surpassing $16 billion through year-end. Start-ups EnergyClear and Virtual Market Assurance Corp. (VMAC) also began offering clearing services jointly.[16] Table 2 summarizes the main features of these three offerings.

NYMEX and ICE have introduced many new OTC credit clearing products.[17] They include clearing services for longer-term contracts, energy at a variety of geographical locations and options. The expansion of these services has the potential to significantly increase the value of tools available to energy traders and customers to manage their risk.

There are several market implications of the introduction of new methods for managing credit exposure in the energy industry, such as:

Traditional methods of managing credit exposure that rely on the credit quality of counterparties are being supplemented by new methods and increasing the robustness of credit management in the energy industry. The traditional method of credit management failed when many major energy counterparties either went bankrupt or could no longer meet their obligations due to debt downgrades. As a result, the quantity of energy trades has been severely reduced, resulting in a less-liquid and less-efficient market. New methods for managing risk can reduce the likelihood of contract failure due to credit failure. In its white paper, CCRO estimated that companies can save 75-90 percent of the collateral required to support transactions by going to this type of credit clearing from historical approaches embedded in bilateral contracts. The result would increase credit-related transaction capacity several times, allowing for improved market liquidity.[18]

Credit clearing mechanisms can serve market participants and markets well but market participants need to be aware of the limitations of clearing mechanisms and the differences between the services offered by alternative clearing organizations. One limitation concerns the limited benefits for nonmembers. A clearinghouse only protects members from the financial failure of other members. Some clearinghouses allow nonmembers to conduct business on the clearinghouse through members. If any side of the transaction experiences financial failure, all sides of the transaction

[15] Communication with WJ Berger, graduate student, Harvard Business School

[16] www.energyclear.com, www.vmac.com.

[17] www.nymex.com and www.intcx.com.

[18] Committee of Chief Risk Officers: *Introduction and Executive Summaries of CCRO Recommendations*, Volume 1 of 6, November 19, 2002

Table 2: Summary of Clearing Services

Platform	New York Mercantile Exchange (Nymex)	Intercontinental Exchange (ICE)	EnergyClear
Status	Launched May 2002; Cleared more than $5 billion through the end of 2002.	Launched March 2002; Cleared more than $16 billion through the end of 2002.	Launched October 2002. EnergyClear did not provide information.
Clearing Source	Nymex Membership	Board of Trade Clearing Corp (BOTCC) & London Clearing House (LCH)	EnergyClear with Virtual Markets Assurance Corporation (VMAC) financial guarantees, provided by Financial Security Assurance Ltd.
Financial Backing	Nymex Membership	BOTCC's Guaranteed Clearing Corporation for electricity and LCH for natural gas	$100 million credit facility from a group of leading commercial banks
Areas of Coverage	Natural Gas, Electricity, Crude Oil, Refined Products	Natural Gas, Electricity, Crude Oil	Natural Gas, Electricity
Protected Parties	Exchange Members	Clearing Members	Clearing Members
Business Attributes	• Margin positions are netted against other cleared positions on the Exchange. • Clearing orders are subject to risk acceptance parameter imposed by clearing members authorizing the two principals to submit trades for clearing. Source: www.nymex.com	• Transactions may be cleared by matching directly on the Exchange screen or through privately negotiated block trades. • Block trades can be done for any product cleared on ICE. Source: www.intcx.com	• The energy clearinghouse is not affiliated with an exchange • EnergyClear Corp. is owned by market participants. • EnergyClear Operations Co. is owned by Bank of New York, Prebon Yamane and Amerex, and provides operations and technology support.

Source: OMOI summary of information from www.nymex.com, www.intcx.com, www.energyclear.com and phone calls between OMOI and the clearing services.

are protected except the nonmember. Consequently, energy companies using an exchange with clearing by contracting through a clearing member must understand that they are *not* protected if the clearing member they are working with defaults.

Another limitation results from the need to adapt traditional clearing to energy markets. Traditional clearing settles transactions purely financially. Energy market participants typically demand physical delivery guarantees. Clearinghouses are working with market participants to develop new instruments that mitigate the risks associated with this mismatch between physical and financial delivery.

Actions

The energy industry must become more familiar with sophisticated credit tools. The Commission can help by bringing knowledgeable experts together to discuss these tools.

Industry Actions.

Education. The energy industry is already making use of credit clearing mechanisms in its interactions with NYMEX, ICE, EnergyClear, VMAC and others. Industry players need to master these tools and report on their use

effectively as part of their financial statements.

Legal disputes between some of the leaders (NYMEX and ICE) may hinder progress in this area.

Potential providers of clearing services and energy market participants still need to clearify market needs and craft products and services to meet those needs.

Commission Actions.

The Commission is co-sponsoring a technical conference on credit and credit clearing issues with the Commodity Futures Trading Commission early in 2003. The purpose of the conference is to encourage further self-help on the part of energy industry and promote dialogue among energy industry stakeholders. The conference also will help the Commission assess its future role in clearing and other credit-management solutions as they affect the effective functioning of the energy markets.

The Commission will offer its Alternative Dispute Resolution Services to resolve the NYMEX-ICE dispute.

The Commission also will monitor the use of new methods for managing credit exposure and showcase positive developments.

Issue 3 SHAKEN CONFIDENCE IN PRICE DISCOVERY METHODS

Recent revelations about price indexes and related false reporting by industry have contributed to a crisis of confidence in price discovery. Reports of traders lying to the energy trade press – which compiles and publishes numerous price indices – with the intention of manipulating natural gas prices and volumes have undermined confidence in the industry.

No serious alternative to the trade press-developed price index system exists today. The trade press has not provided adequate details about price development to reach a public interest standard of use by the Commission, citing their First Amendment constitutional rights. Notably, major players appear to have been aware of and have provided for limitations inherent in the price indices. Smaller players, both buyers and sellers, have been disproportionately affected by the recent revelations.

Increasing numbers of natural gas traders have announced that they will not contribute price information to the trade press in fear of lawsuits alleging inaccurate prices.[19] This response is particularly counterproductive because it does not solve central process problems but does reduce meaningful price information. A critical component of any natural gas price discovery solution is the broadest possible participation.

[19] *Foster Electric Report*, "Platts Noticeably Absent from Meeting of Energy Companies and Trade Publications to Devise Appropriate Price Reporting Guidelines," December 11, 2002

The Situation

A key product of any effective market is accurate information about the prevailing price in that market. This revelation of price information – price discovery – helps customers determine the cost of meeting their needs, helps sellers determine the value of their investment and, when working correctly, efficiently allocates resources to the customers who most value them.

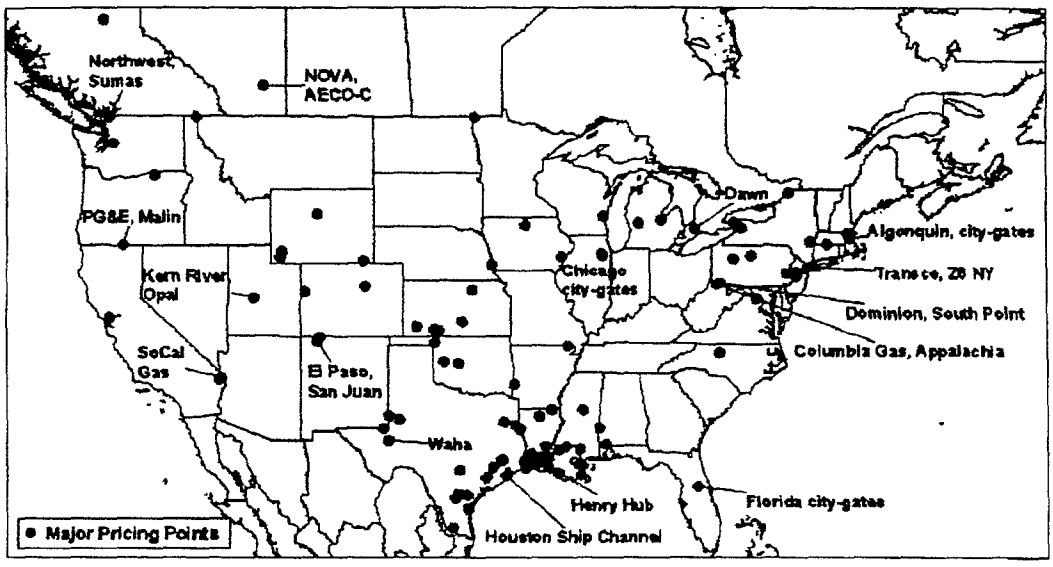
> Price discovery is the revelation, through appropriate market mechanisms, of the prevailing price in a marketplace.

The energy trade press creates natural gas price indices through systematic polling of market participants known to each publication. The quality of these indices depends on the quality of the particular processes used by the trade press when polling participants, as well as the number of active participants trading at a given price point. A drawback of the reported approaches are that the traders who traditionally provide the price quotes often have had financial incentives to influence market prices and behavior. The trade press attempts to adjust for this conflict of interest by using median and average prices to compensate for irregularities or by throwing out outlying price quotes – those that, without explanation, are significantly different than other prices gathered – that may be intended to move the market.

Confidence in indices has weakened with recent allegations and admissions of false reporting of price and volume information. It is not yet possible to quantify the harm caused by false price reporting to index publishers or the extent to which prices might have been distorted. However, doubt has been cast on available price index results.

Accurate and credible price indices for natural gas are crucial because they serve as the basis for many natur-

Figure 7: Selected Natural Gas Pricing Points in North America



Source: GASdat map based on *Gas Daily* pricing points

al gas and electric transactions across the United States.

Natural gas price indices are also difficult to monitor for accuracy because there are so many such indices. There is no one national market for natural gas; there are many regional markets. These markets contain hundreds of price points, including many market hubs, some of the most significant of which are shown in Figure 7.

Price discovery and pricing at hubs has never been completely transparent and some pricing points are more actively used for trading than others. For example, a recent study completed by Energy and Environmental Analysis on behalf of several New York natural gas distributors identified only three hubs that meet their definition of adequate liquidity in the Northeast: Columbia-Appalachian Pool; Dominion-South Point; and Dawn, Ontario.

The study defined "adequate liquidity" as "more upstream capacity than downstream, sufficient volumes at peak periods and year round, more than one pipeline serving the point, presence of storage and electronic trading at the point, reported price indexes, narrow bid-ask spread and sufficient volumes and numbers of buyers and sellers."[20]

[20] Energy and Environmental Analysis, "Analysis of Natural Gas Market Liquidity at Points Affecting New York State LDCs," preliminary draft prepared for the New York Gas Group, November 2002. Final report expected February 2003.

While we might not define liquidity in exactly the same way, the point remains broadly valid. Multiple pricing points will tend to challenge liquidity and, therefore, effective price discovery. On the other hand, as the trade press states, all price points are included because a sufficient number of market participants asked for that point to be included in a list of indices.

The implications for the market of decreased confidence in natural gas price indices include:

Concerns surrounding price indices may lead to the unraveling of existing natural gas contracts. If parties question the validity of the data upon which their contracts are based, they may attempt to dissolve contracts. Without an alternative price discovery mechanism, they would be left without a market basis for determining prices for new contracts.

Concerns surrounding price indices may affect the willingness of parties to enter new contracts. If parties are reluctant to enter into new contracts, the efficiency of gas markets and dependent electric markets could decrease. Disarray in natural gas price discovery could hinder traders, suppliers and customers from entering the market and creating liquidity. The result could be a dysfunctional system.

Actions

While the Commission can play a supporting role here, industry must develop and implement effective solutions to the current crisis. Both industry and Commission actions are discussed below.

Industry Actions.

Industry has taken confidence problems with natural gas price indices quite seriously. The most visibly constructive efforts include the following:

Developing best practices for price reporting. The CCRO is working on best practices for reporting natural gas prices with the hope that recommendations will be available for adoption by industry participants within the first quarter of 2003.

The Coalition for Energy Market Integrity and Transparency (EMIT), which includes independent natural gas producers, royalty owners, electric generators, energy distributors, consumers and others, has issued a challenge to the industry to produce a list of protocols publishers should follow in reporting and publishing prices.[21]

Some trade publications themselves are actively reviewing their price index development procedures to look for ways to increase confidence.

Shifting transactions to exchanges, where prices are more transparent. As noted in the discussion of the financial difficulties of market players, exchange-traded markets, such as ICE, have added new volume. To the extent that this creates more price information, it is a good sign. Price and trading information at NYMEX is transparent, in part because of its regulation by the CFTC. The transparency of price and trading information from ICE is less clear. ICE has begun marketing its price and volume data online under its brand name "10x." This pricing service may, in time, compete with the trade press. Because its regulatory requirements are different from NYMEX, however, it does not provide the same level of information to regulators as NYMEX.

Commission Actions.

On January 15, 2003, staff reported concerns regarding price index formation to the Commission at its open meeting. In addition to reviewing the current situation, staff explained the Commission's interest in price index formation, reviewed the public evidence that raises questions about price index formation, defined the high-level criteria important to developing trustworthy price information in the future and proposed some next steps.

Specifically, the Commission approves pipeline tariffs that refer to market price data. There are three areas where these references tend to happen:

Cash-out provisions. On most major pipelines, when deliveries and receipts of natural gas are not in balance, the differences may be valued and sold to the shipper or purchased by the pipeline using market price information. These cash-out provisions allow the industry to quickly and efficiently account for and eliminate imbalances.

Penalties. In the determination of pipeline penalties, the Commission sometimes allows pipelines to use market prices to deter shipper conduct that could threaten system operations.

Basis Differentials. Many negotiated rate transportation contracts establish transportation rates using the basis differentials between two or more price index trading points.

Staff proposed that in the future, the Commission require that natural gas price indexes meet certain minimum standards before natural gas pipelines are permitted to use these indexes in new tariffs or for other new regulatory purposes.

Staff proposed that evidence for these new filings would need to be presented and reviewed to assure that any referenced price index meet minimum index formation standards. In particular, the index would need to accurately reflect the market. For approval, a new tariff containing a reference to an index would need to demonstrate:

1. Confidence in the accuracy of price reporting – that is, the ability to verify that reporting is for deals actually done, not simply aggregate opinions.

2. Adequacy of coverage – that is, the ability to assure the collection of adequate information to represent prices across the relevant marketplace.

3. Information about market liquidity or some insight into

[21] Federal Energy Regulatory Commission, presentation by Arthur C. Corbin on behalf of Coalition for Energy Market Integrity and Transparency, October 25, 2002, at www.ferc.fed.us/gas/10-25-02-conf/EMIT-STATEMENT.pdf.

how much trading is going on at a particular point in order to generate warnings when markets are thin and confidence when they are liquid.

4. Verifiability – that is, the ability to assure integrity of the process through independent review by a trustworthy third party (preferably not by a governmental entity).

Staff suggested that only after assuring the Commission that these characteristics have been met should a natural gas price index be approved for use in a new pipeline tariff.

The Commission is analyzing natural gas price index issues in its Fact-Finding Investigation of Potential Manipulation of Electric and Natural Gas Prices in Western Markets (Docket No. PA02-2-000). On August 13, 2002, Commission staff made the initial report public. Staff inquired into the characteristics of publicly-reported price indices, including natural gas spot prices at California delivery points used in the California refund proceeding. Staff found significant problems with published price indices. The Commission response will depend in part on the findings of its fact-finding investigation. That investigation task force reported a number of price index concerns in 2002. The Commission has announced its intention to conclude this investigation in early 2003.

At the direction of the Commission, OMOI has begun planning a technical conference to address price index issues.

Issue 4 Continuing Need for Efficient Investment in Infrastructure

Despite its current financial problems, the natural gas industry requires continued investment to maintain adequate supply, delivery facilities and operational flexibility and safety. The challenge to the industry is to maintain adequate, efficient levels of investment in a competitive environment.

Competitive natural gas markets created more than a decade of moderate wholesale natural gas prices following the decontrol of significant volumes of wellhead prices in January 1985, which provided an enormous benefit to natural gas customers. To achieve these benefits, competitive forces restructured the way the industry functions. One change has been the direct linkage of investment to market signals.

In the 1960s and early 1970s, the federally regulated interstate market combined with the deregulated intrastate market created a dysfunctional dichotomy that led to shortages of delivered natural gas in the interstate markets in the mid-to-late 1970s and adequate supplies in major intrastate markets. That failure to serve interstate customers, especially during the harsh winter of 1975-76, became the impetus for Congressional passage of the Natural Gas Policy Act of 1978 (NGPA), which provided for the phased decontrol of the wellhead price of gas, starting substantially in January 1985.

Natural gas markets since the NGPA was passed have provided an investment environment that has benefitted customers and provided adequate returns for the gas industry. Regulatory policy continues to play a significant role as well, encouraging investment when necessary. For instance, to stimulate investment, the Commission recently signaled it will set a new policy in regulating new liquefied natural gas (LNG) projects where markets are competitive and other criteria are met.[22]

The Situation

In this section, we will address the challenge that current prices pose for developing gas supplies, the challenge of shifting supply and demand for maintaining sufficient transmission and delivery infrastructure, and the need for additional infrastructure as a result of current levels of operational flexibility.

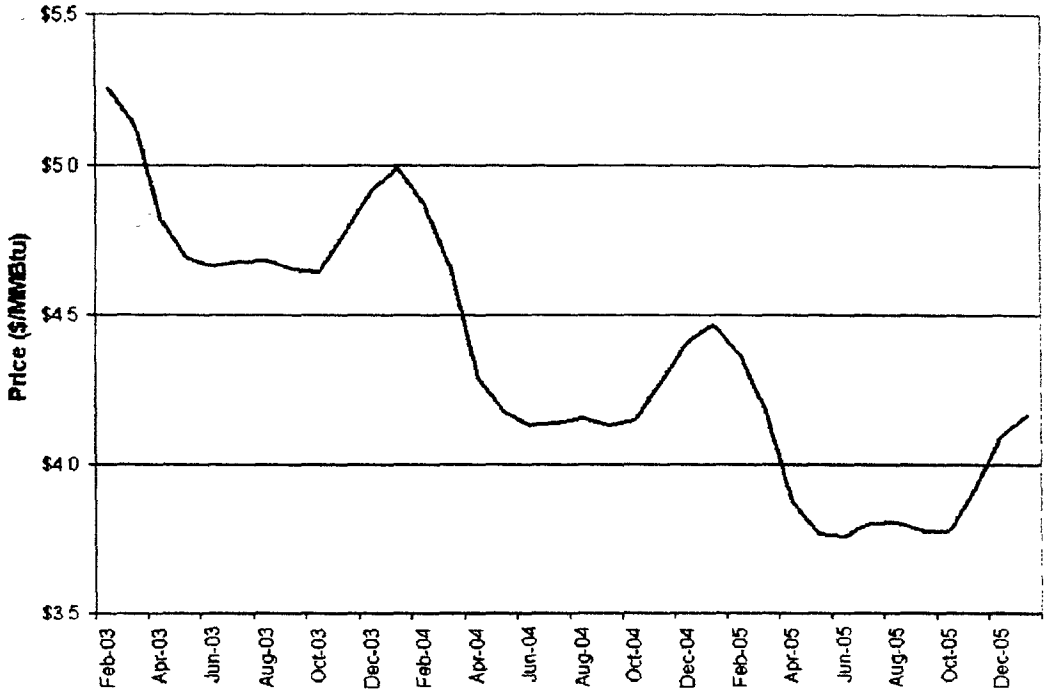
The Challenge that Current Prices Pose for Developing Gas Supplies

Price levels this winter have increased because of tightened market conditions due to a return of incremental heating load as compared to last year's unusually warm winter (the fifth warmest winter since records began in the late 1800s).[23] Without the threat of a supply shortage, the sustained early cold of the winter of 2002-03 created support for natural gas prices in the $4 to low $5/MMBtu range at Henry Hub. November 2002 was 11

[22] In a preliminary determination on December 18, 2002, to approve the Hackberry LNG project in Louisiana, the Commission said it would not require Commission-approved cost-based rates or an open-access tariff for the new LNG terminal service because its sponsors will bear the full economic risk of the project and customers will not be adversely affected by the project's costs. This approach is expected to remove economic and regulatory barriers to the development of onshore LNG import terminals (Docket No. CP02-374-000, et al.)

[23] www.noaanews.noaa.gov/stories/s878.htm.

Figure 8: Natural Gas Futures Prices Show Declining Pattern for the Next 3 Years



Source NYMEX

percent colder than November 2001 and storage withdrawals this heating season reached 728 Bcf at the end of 2002 (December 31) versus 265 Bcf at the end of 2001.[24]

As shown in Figure 8, however, market participants appear not to expect that the current high prices will last. NYMEX futures prices for delivery of natural gas over the next three years show prices generally lower each year for the same month. This is a futures market phenomenon known as backwardation, which indicates that support for higher prices is short term.

Backwardation is the situation in futures markets where prices for a commodity for delivery in future months are lower than for the near months.

The challenge then is for the industry to continue to invest in natural gas exploration and production in this shifting price environment. There is general consensus among industry observers that gas supply should be adequate to meet demand this winter.[25] However, there are lingering concerns – and some mixed predictions – about the outlook for U.S. gas production, imports and total gas supply.

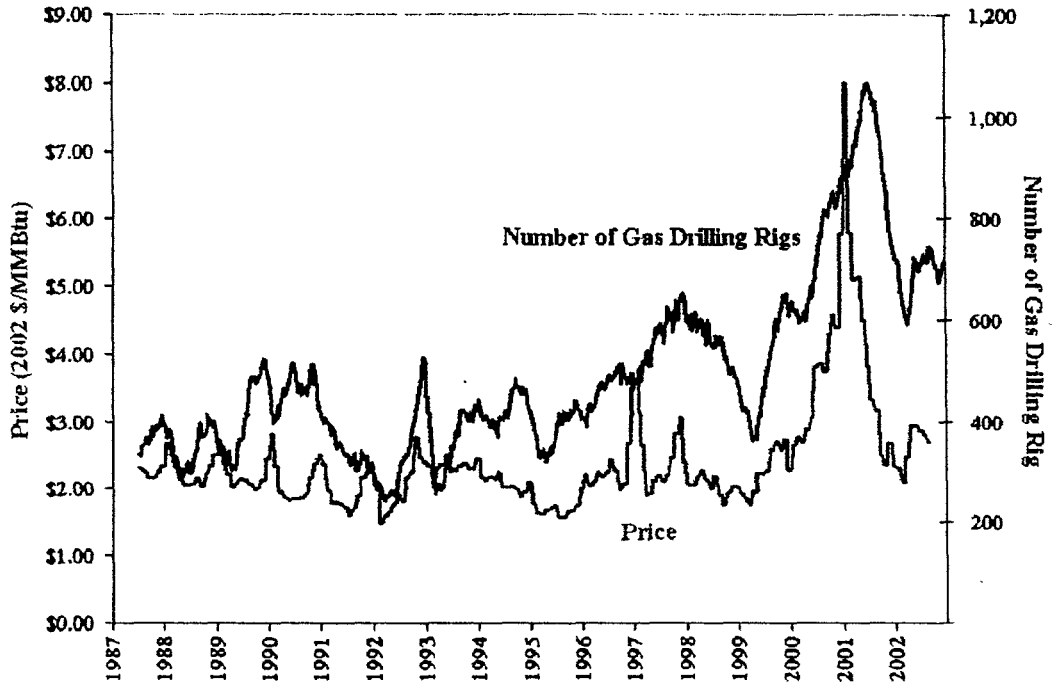
The Energy Information Administration (EIA) last November expected dry gas production plus imports to decline slightly for the fourth quarter of 2002 and first quarter of 2003 as compared to the same periods in 2001 and 2002.[26] By January, however, EIA was predicting slight increases for those quarters as well as slight but steady annual increases in production and imports for 2003 and 2004.[27] Some financial analysts reviewing quar-

[24] Energy Information Administration

[25] Sources of information underlying this broad assessment include the Energy Information Administration, *Short-Term Energy Outlook*, December 2002; Cambridge Energy Research Associates, "CERA Monthly Briefing: High Anxiety," December 17, 2002; Natural Gas Supply Association, "NGSA Expects Upward Pressure in the Natural Gas Market This Winter," press release, September 19, 2002; American Gas Association, "Natural Gas Supply Fundamentals for Winter 2002-2003," October 1, 2002

[26] Energy Information Administration, *Short-Term Energy Outlook*, November 2002.

Figure 9: Prices and Drilling Interact Over Time (Natural Gas Prices and Natural Gas Drilling Rigs, 1987—2002)



Sources: Baker-Hughes rig count from Bloomberg; Energy Information Administration, "Average Natural Gas Prices: U.S. Natural Gas Wellhead Price ($/Mcf)," 1976-2002

terly filings last fall predicted production declines (year-on-year) of 5 percent to 6 percent, or an annual differential of almost 1.2 to 1.4 Tcf.[28] In January, EIA estimated that 2002 U.S. gas production would be down only 30 Bcf, or 0.15 percent, from the 2001 level.

Figure 9 shows that the overall number of drilling rigs searching for natural gas today has increased over time but decreased recently. This pattern does not raise as much concern as it might have in the past given the increased efficiency in the exploration and production sector. Nevertheless, exploration and production activity deserves continuing attention.

Current price patterns have several implications for natural gas infrastructure, such as:

Prices in competitive natural gas markets change more quickly than drilling decisions, resulting in price cyclicality. Figure 9 shows this tendency, common to many commodities. Cyclicality of natural gas prices results from a lag between the time the market signals a demand increase and the time it takes to increase supply through drilling and related development. In the short term, supply remains tight even though demand has risen, leading to higher prices. Later, as additional capacity is added, supply outstrips demand, driving down prices. As long as natural gas is considered a basic need, that cyclicality in prices will have a negative effect on customers' perceptions of reliability, price and fairness

Competitive natural gas markets show volatility when demand and supply are closely balanced.

Volatility is a measure of how much uncertainty there is about a price and is usually expressed as the rate of change in a price over a specified period of time.

[27] Energy Information Administration, *Short-Term Energy Outlook*, January 2003.

[28] Salomon Smith Barney, "Exploration and Production, Third Quarter 2002 Preview," October 3, 2002, and Lehman Brothers, "Oil & Gas: E&P (Large Cap)," October 25, 2002.

In the short term, sharp increases in demand result in sharp increases in price. In the short term, price spikes can be painful for customers just as short-term price drops are painful for producers. In the longer run, higher prices result in new supplies being developed. Customers and producers can manage price volatility by obtaining fixed prices or engaging in other forms of risk management.[29]

The Challenge of Shifting Supply and Demand for Maintaining Sufficient Delivery and Transmission Infrastructure

The demand for natural gas supply shifts geographically as load centers grow or shrink in size and industrial and other uses of natural gas contract or increase. Similarly, the location of natural gas supply can shift over time. For instance, offshore Gulf of Mexico supply has increased recently while on and near shore Gulf of Mexico supply has decreased. These shifts in supply and demand can result in the need for expanded natural gas transmission capacity.

Places where delivery capacity is limited generally signal any tightness through prices. The difference between prices in different places is a useful indicator of the value of moving natural gas from one place to another. These differences are known as "basis" – a term that refers to the difference in prices between any two markets. In the U.S. natural gas industry, basis usually refers to geographical differences and typically reflects the value of gas transmission between those points (see Figure 7 for some illustrative geographic locations).

Basis is the difference in prices between identical products but in two different markets. In this report it refers to different geographical markets.

Shifts in supply and demand have resulted in several regions that are now short of transmission capacity. These regions include:

▶ ***The Rockies***, which produces more natural gas than it uses Pipeline capacity from the Rockies has not kept pace with productive capacity. Consequently, prices tend to be low and drilling incentives reduced. The resulting basis differential for natural gas from the Rockies has encouraged new pipeline capacity from the Rockies to California, including a recent doubling of Kern River with expected completion by the second or third quarter of 2003 (under a new owner). Northwest Pipeline is improving its ability to transport gas to the Northwest to compete with volumes flowing from Canada. At least four new and similar pipelines have been proposed in the Rockies to move natural gas eastward; however, none has yet filed at the Commission for certification.

Capacity release is the ability for natural gas transportation service customers to re-sell their rights to another party.

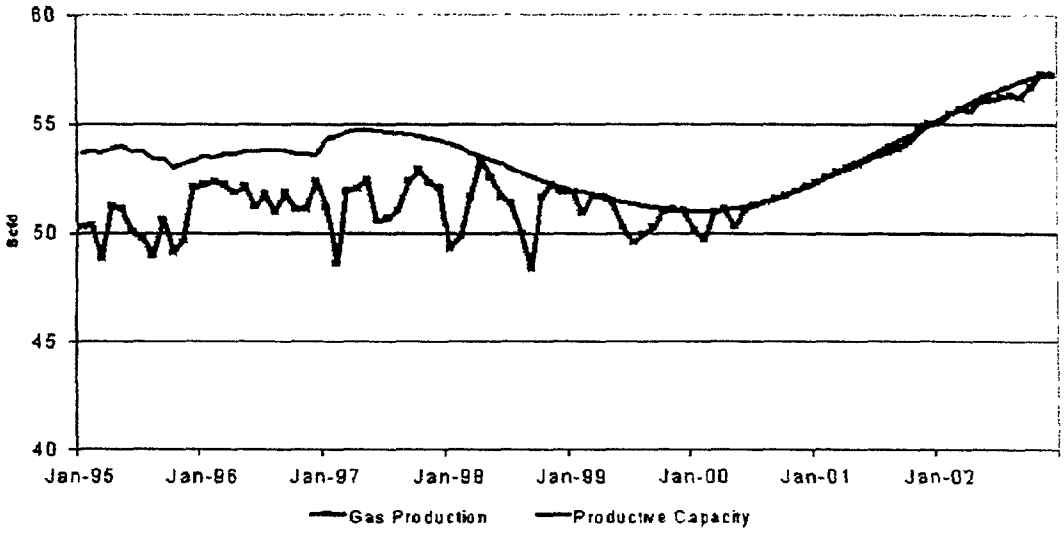
▶ ***The New York metropolitan area*** may need additional capacity to meet its demand. Analysis of capacity resale, or capacity release for pipelines serving the region, shows that transportation values have been high in recent winters, indicating some tightness in capacity.[30] To continue to meet potential demand growth, at least one of the proposed (or similar) pipeline projects into the city would need to be built. However, annual average basis differentials from both Chicago and Niagara to New York City do not yet support the projects. Until the market can support making the binding capacity commitments necessary for financing a project, the viability and timing of any proposals remains uncertain

▶ ***Other areas in the Northeast*** may face capacity constraints as well. Tennessee Gas Pipeline Co. declared five emergency orders during the winter of 2001-02 in its Northeast market area. Tennessee received requests for gas flow in excess of available capacity, limiting the availability of interruptible service to New England and New York City. Analysis of Texas Eastern into New York, Pennsylvania, New Jersey, Delaware, Maryland and Virginia shows that capacity release prices were high during the colder-than-normal winter of 2000-2001. This winter, several pipelines in the Northeast, including Tennessee, Algonquin, Transco and Texas Eastern, have

[29] Natural gas price volatility and the use of risk-management techniques to manage it were discussed extensively in General Accounting Office, *Natural Gas. Analysis of Changes in Market Price*, December 2002 (Report No GAO-03-46)

[30] Staff gathered and analyzed a considerable amount of data on capacity-release transactions over the two-and-one-half year period that the maximum rate ceiling for short-term releases was waived and published its analysis in a paper posted on the Commission's Website (May 30, 2002). Docket No PL-02-4-000 The staff paper was intended to solicit comments regarding the price ceiling for short-term released capacity Among the many points raised by commenters, several stated that the value of released capacity could be an indicator of additional capacity needs, arguing that releases made above the cap could signal that capacity is tight in that region at that time Conversely, these commenters suggested that if capacity is not released above the cap, this could indicate that sufficient capacity exists during that particular time Data on capacity release were downloaded from pipeline databases.

Figure 10: Gas Markets Move Toward Just-in-Time Delivery System for Natural Gas (AGA Graph of Gas Production compared to Capacity from 1995 through 2002)



Source. American Gas Association

restricted services at times. Restrictions have included little or no authorized overrun service, reduced tolerance for imbalances and a variety of warnings to shippers to stay in balance or be subject to operational flow orders.[31]

▶ ***Areas in the Southeast***, including parts of the Carolinas, Georgia and Florida, indicate some tightness in capacity. Analysis of capacity release data for Transco into the Carolinas and Georgia shows that the values for capacity release were high in the past two winters. In addition, Transco issued a number of constraint notices last winter limiting the availability of interruptible transportation service into an area stretching roughly from Alabama through Northern Virginia.

▶ ***Florida***, though a summer peaking market for natural gas deliveries, has experienced winter price spikes due to a lack of storage on Florida Gas Transmission combined with the demand for gas to meet heating load in other downstream markets.

Constrained areas are prone to price spikes and more susceptible to manipulation than non-constrained areas. Both scarcity-related price spikes and manipulation can reduce consumer confidence in markets. The price spikes will continue because of the high cost of building infrastructure to meet peak demand rather than some variation of average anticipated demand. Most customers would not opt to pay the high premium cost in order to avoid the occasional price spike. Nevertheless, despite such a rational economic decision, the presence of price spikes is inefficient for market participants until demand responses are facilitated.

The Need for Additional Infrastructure as a Result of Current Operational Efficiently

The same forces that have produced 20 years of moderate natural gas prices have also rid it of pockets of excess capacity. Markets tend to drive just-in-time approaches to capacity, building facilities that can pay for themselves through their value serving markets. The occasional disruption does not produce enough value to justify the investment required to prevent it.

> Just-in-time is an approach to efficiently delivering services as close as possible to just the amount needed, when it is needed and where it is needed.

[31] Muluple trade press references including *Gas Daily, Natural Gas Intelligence* and *Btu Daily Gas Wire*

This movement toward just-in-time delivery of natural gas is illustrated by Figure 10 – a graph published by the American Gas Association in its recent winter assessment.[32] Figure 10 tells the story of the end of the oversupply situation characteristic of the natural gas industry, starting in the early 1980s as a consequence of the NGPA, known as the "gas bubble." Gas production and productive capacity are charted together. The difference between the two lines is the excess natural gas production capacity that is available but not used.

Starting in the early 1980s (before the period included in Figure 10) the natural gas industry used this flexibility in wellhead production to help manage demand swings. Production, as long as it remained lower than capacity, moved up and down in response to relatively short-term demands. Around 2000, this flexible response diminished as production neared the ceiling of productive capacity with imports (which tripled between the mid-1980s and now) making up some of the volume.

The natural gas industry's experience of managing operational flexibility from the early 1980s through the late 1990s was made easier by the oversupply situation. The erratic nature of demand in the natural gas industry did not disappear in the late 1990s. Consequently, some other part of the industry has had to handle demand swings.

Pipeline operations, storage and distribution operations play a greater role now in volume management than when production capacity had surpluses. Price swings affecting some demand may also play a part. Looking back at Figure 1, we see that prices rose higher and for longer after the end of the oversupply situation than they had over the previous 20 years. The end of the "gas bubble" is not the only reason for the prices of 2000-01, but the shift in where supply flexibility must be managed likely contributed.

The implication of the reduced role of production as a viable source of operational flexibility is the increased demand on existing infrastructure to provide such flexibility.

Actions

Industry and government can take actions to assure adequate investment in gas supplies, constrained areas and infrastructure needed as a result of reduced operational flexibility.

[32] Energy and Environmental Analysis Inc., "Lower-48 Dry Gas Production vs Dry Gas Productive Capacity," presented by the American Gas Association to the Federal Energy Regulatory Commission in a briefing titled "Outlook for Natural Gas Market Conditions," September 6, 2002

Industry Actions

Industry should maintain existing infrastructure. The extensive facilities required to supply and deliver natural gas to customers make them inherently vulnerable to disruptions. Failure of any part of the system – rigs, pipelines, compression, storage, distribution facilities – can result in failure to deliver to certain customers for some period of time. Consequently, natural gas facilities providers must monitor and maintain their physical plant, inventories of replacement parts and safety procedures carefully

Industry should cooperate with improving the performance of price discovery mechanisms. Increased confidence in price discovery mechanisms can increase confidence in price signals, such as increased basis differentials, that provide industry with an indication of the value of investment in new infrastructure such as delivery facilities.

Industry should work to create viable forward markets for capacity. Viable forward markets would provide the mechanism for customers, producers and pipelines to invest in new capacity.

Finally, industry needs to make use of risk management services. As discussed, tightening supply, pipeline constraints and reduced operational flexibility can all increase short-term price volatility to customers. Industry focus on stability is critical for customer confidence. Use of price-risk management techniques, including fixed prices, and effective investment in infrastructure will be key to customer satisfaction.

Commission Actions

The Commission has undertaken efforts to improve the reliability and management of volatility in the natural gas industry. They include the following:

▶ OMOI will continue to monitor and assess regional markets and potential capacity constraints and resulting price and reliability effects.

▶ OMOI believes the Commission should support the development of forward capacity markets to facilitate gas infrastructure investment

▶ The Commission will encourage state regulators to make rules that allow timely price signals to reach retail customers and encourage demand-side alternatives, adding important pricing signals and lower-cost demand flexibility to the natural gas industry.

Issue 5 CONTINUING POTENTIAL FOR MANIPULATION

Evidence indicates that price manipulation has occurred in certain natural gas marketplaces, and may be continuing.

Price manipulation accusations and admissions have had high visibility during this time of stress on energy markets, resulting in dramatic losses in confidence by customers and other participants. To regain lost confidence, natural gas markets must, going forward, develop adequate institutions to manage the potential for manipulation and deter it.

In addition to recent activity by certain market participants, much evidence of manipulation right now is likely the result of a high degree of scrutiny, a natural side effect of building robust market institutions. Nevertheless, it is likely that revelations of improper behavior will continue for some time. The Commission is likely to be at the forefront of much of this revelation.

The Situation

The fair and effective functioning of energy marketplaces requires robust industry institutions designed to prevent manipulation and promote customer confidence. To date, the natural gas industry has not adequately developed these institutions.

The Commission has investigated specific incidences of aberrant market behavior for some time, and it created OMOI in 2002 to help the Commission monitor existing marketplace institutions. OMOI's charge is to oversee market behavior on an ongoing basis and investigate improper behavior, such as the manipulation of energy markets. Manipulation consists of the violation of regulations and the use of market power and deception to profit from other market participants.

Since FERC's Enforcement Division moved to OMOI in August 2002, we have increased the number of active natural gas and electric market-related investigations steadily. Manipulation is more likely where market liquidity is low, price discovery is obscure and capacity is constrained, and this manipulation may move prices in either direction. The ongoing reduction in numbers of wholesale market participants and reduced liquidity and transparency at pricing points may increase the potential for manipulation. Having fewer traders may reduce the statistical significance of reporting for less-active trading points, reduce liquidity, increase bid-ask differentials, increase volatility and increase the potential for distorted price reporting.

> ***Manipulation*** **of energy markets can include, but is not limited to, the exercise of market power, the dissemination of false or deceptive information, or other acts or practices that may or may not constitute violations of Commission-filed tariffs or Commission rules, orders or other applicable requirements.**

The Commission conducts investigations of natural gas market participants using the following five broad categories of price manipulation:

Controlling marketplaces through weak liquidity. As discussed above, the natural gas market consists of many relatively illiquid marketplaces. In some cases, individual trading companies dominate these marketplaces, giving the companies market power Certain trading companies appear to have used market power to affect prices. The Commission, through OMOI and other staff investigations, is looking at particular situations where use of market power arising from weak market liquidity appears to have affected prices

Withholding capacity. Another type of market power arises from control of facilities to or from areas where capacity is tight. In the natural gas business, having capacity generally means having access to transportation, storage or distribution. The Commission investigates cases where it is alleged that companies withheld capacity to the point where a price in a related market was affected.

Manipulating physical marketplaces to affect prices in associated financial marketplaces. Companies may be able to use market power to manipulate prices in physical markets in order to affect associated financial markets.

Communicating market information from pipelines to their marketing affiliates. The Commission has strict rules regarding communication of information from regulated capacity providers – generally pipelines – to their affiliated marketers. Affiliated marketers could use information about regulated capacity availability to take positions in a marketplace more advantageous than their competitors.

Providing false data about prices or volumes to index publishers. As we discussed more thoroughly above in the price discovery section, some companies have admitted lying to the trade press regarding prices. Lying about commodity prices can be a felony. The Commission and others have discovered extensive evidence of lying about prices to trade publications in the past.

This list of categories is not exhaustive, nor does it represent all the potential strategies for manipulating natural gas prices. Effective market oversight will require the ability to identify, investigate and resolve manipulation quickly, and to distinguish manipulation from price movements (up or down) resulting from market forces.

Actions

Coordinated efforts by industry and government can best prevent market manipulation.

Industry Actions

Participants in natural gas markets may, at times, believe that their short-term goals can be furthered through market manipulation. In the longer term, manipulation destroys confidence in the industry. In a real sense, the current situation in the natural gas industry is the direct result of certain participants' failure to consider the long-term consequences of their unethical and illegal actions.

Companies active in natural gas trading must take responsibility to stop manipulation of markets, either by their employees or by others. These efforts fall into two categories:

- Establishing and maintaining internal legal and risk management controls, and
- Reporting suspicious behavior to the appropriate authorities.

OMOI has seen an increasing interest by natural gas traders in both of these approaches. Some companies have taken actions to clean house internally in response to various internal and external investigations. Some companies have reported suspicious behavior to the Commission and other responsible governmental authorities

Collective industry efforts have included those spearheaded by the CCRO related to appropriate controls and by EPSA related to ethical behavior.

Commission Actions

The Commission has made a strategic commitment to vigilant oversight of market manipulation in wholesale natural gas markets. Much of the Commission's efforts in this area, those related to specific investigations, is confidential and cannot be mentioned here. However, certain activities can be reported:

- The Commission formed OMOI in early 2002 explicitly to coordinate market monitoring and investigation capabilities.

CONTINUING POTENTIAL FOR MANIPULATION

▶ The Commission has received energy market briefings developed by OMOI at regular closed meetings since mid-2002. Issues reviewed include price movements, financial conditions, market intelligence, system outages, potential market manipulations and other observed behaviors.

▶ OMOI is developing a set of gas and electric market metrics and thresholds designed so that when anomalies occur, OMOI investigates to determine if the deviations can be explained by physical market imbalances, by market rule problems or by improper market behavior.

▶ The Commission is increasing its coordination with other regulatory bodies, including the Commodity Futures Trading Commission, the Securities and Exchange Commission, the Department of Justice, state commissions and others.

▶ OMOI operates the Commission's toll-free Enforcement Hotline (877-FERC-MOI), which received about 600 calls in 2002. These calls include inquiries, complaints and tips about inappropriate market behavior.

CONCLUSION

Competitive forces have created extraordinary benefits for natural gas customers. However, the competitive wholesale natural gas market faces many critical challenges as 2003 gets underway. These challenges include:

- Deteriorating financial conditions of market participants;
- Managing credit exposure;
- Shaken confidence in price discovery methods;
- Continuing need for efficient investment in infrastructure; and
- Continuing potential for manipulation.

The healthy functioning – or distress – of natural gas markets can have profound effects on the overall economy because of the gas market's size, pervasiveness and the critical needs it meets.

Operation of a competitive wholesale natural gas market generated significant customer benefits over the past quarter-entury Quick, thoughtful and meaningful action can address the current challenges and maintain the benefits of a competitive natural gas industry for its customers and the overall economy.

The issues facing the effective competitive functioning of the natural gas market are manageable over time. Both industry participants and regulators should aggressively seek out and promote solutions to assure efficient, cost-effective, fair and valuable natural gas service to all customers in the United States.

Industry actions indicate a significant, responsible interest in dealing with the challenges that face natural gas markets today. As long as that interest remains, it provides a strong positive indication that these issues can be resolved.

The Commission continues to promote fair, efficient markets through a clear focus on its strategic initiatives to:

- Assure sufficient infrastructure;
- Create balanced market rules; and
- Maintain vigilant oversight and enforcement.

This *Natural Gas Market Assessment* has presented how OMOI is overseeing natural gas markets and enforcing the Commission's rules.

Acknowledgments

The 2003 Natural Gas Markets Assessment was prepared by the Office of Market Oversight and Investigations (OMOI) under the direction of Lisa L. Carter (lisa.carter@ferc.gov), Acting Director, Division of Integrated Market Assessment, and Stephen Harvey, Deputy Director, Market Oversight and Assessment.

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Any errors are the responsibility of the OMOI alone.

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Mailed 11/26/2002

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Investigation into the Gas Market Activities of Southern California Gas Company, San Diego Gas and Electric, Southwest Gas, Pacific Gas and Electric, and Southern California Edison and their impact on the Gas Price Spikes experienced at the California Border from March 2000 through May 2001.	FILED PUBLIC UTILITIES COMMISSION NOVEMBER 21, 2002 SAN FRANCISCO OFFICE INVESTIGATION 02-11-040

ORDER INSTITUTING INVESTIGATION
PHASE I

Summary

The price of natural gas delivered to the California border was extraordinarily high in 2000 and 2001, particularly during the period between December 2000 and May 2001. The Commission has already filed a complaint at the Federal Energy Regulatory Commission (FERC) and litigated against El Paso Natural Gas Company (El Paso) and its marketing affiliate for their manipulation of natural gas supplies to California, which was a substantial cause of the natural gas price spikes. In this investigation, the Commission will examine if there were additional reasons for these price spikes. We will approach this investigation in two phases. In Phase I we name as Respondents the Sempra Energy Companies, Southern California Gas Company (SoCalGas) and San Diego Gas & Electric Company (SDG&E). Respondents in Phase II are Southwest Gas (SW Gas),

Pacific Gas and Electric Company (PG&E), and Southern California Edison Company (Edison). Phase II will commence at a time to be set forth in a future Commission Ruling. In each Phase, respondents are ordered to present evidence which supports all gas market activity that may have affected gas prices during the period March 2000 through May 2001, and to submit testimony explaining the reasons for the natural gas price spikes during this same period. Other non-jurisdictional entities and especially affiliate trading entities of the utilities are also encouraged to submit evidence and testimony related to the reasons for the natural gas price spikes that occurred during this period.

The focus of Phase I of this proceeding is investigatory and fact-finding. The Commission will investigate the past conduct of the respondents with regard to gas price spikes at the California Border from March 2000 through May 2001. The proceeding is categorized as ratesetting. If the investigation reveals that the conduct of respondents contributed to the gas price spikes at the California border during the named period, it may modify or eliminate the respondent's Gas Cost Incentive Mechanism (GCIM), reduce the amount of the shareholder award for the period involved, or order respondents to issue a refund to ratepayers to offset the higher rates paid. If the investigation reveals that statutory laws, or rules or orders of the Commission were violated, the Commission may enter into an ad judicatory phase of this investigation.

Background

Decision 02-06-023

On June 6, 2002, the Commission issued Decision (D.) 02-06-023 in the Matter of the Application of Southern California Gas Company Regarding Year Six (1999-2000) under its Experimental GCIM and Related Gas Supply Matters. During the course of that proceeding, some of the parties raised concerns about

causes of the extreme border price spikes of natural gas in 2000 and 2001. The decision approved SoCalGas' application, with modifications, and ordered the Energy Division to prepare an Order Instituting Investigation (OII) into the causes of the extreme border price spikes during the period December 2000 through spring 2001.

During hearings on Application (A.) 00-06-023, the Southern California Generation Coalition (SCGC) argued that the GCIM should be modified to encourage SoCalGas to purchase gas at or below prevailing market prices, rather than relying on hub services and financial trades to reduce overall cost of gas. Edison faulted the GCIM for relying on wholesale physical and financial transactions with noncore customers rather than encouraging the utility to acquire gas at the lowest possible cost on behalf of core customers.[1] Edison's position was that the GCIM, both in its current form and in settlement form, encourages perverse incentives and market manipulation through the utility's monopoly position in its storage services, intrastate transmission, and core procurement. Edison argued that since noncore customers are on the other side of swaps or other ancillary transactions that benefit core customers, consumers ultimately pay for this benefit when electric generators and others pass on the costs to consumers through increased prices. SoCalGas testified in rebuttal that the high price of gas in winter 2000/2001 was caused by factors beyond the control of SoCalGas, in particular, unusually cold weather, reduced supplies of

[1] Core customers are defined as those who lack alternatives to natural gas service. Most core customers are residential and small commercial customers. Noncore customers are relatively large and are generally capable of switching from natural gas to an alternative fuel, such as oil.

hydroelectric power, increased electric generation gas load, the rupture and shutdown on an El Paso pipeline, and inefficient use of gas storage by generators. SoCalGas testified that it represents only 3% to 4% of the total volumes on which the benchmark indices are based.

The California Natural Gas Infrastructure Outlook Report

In November 2001, the Commission issued its "California Natural Gas Infrastructure Outlook Report."[2] In Chapter 2 of that report, there is a discussion about the "skyrocketing prices experienced in California in 2000 and 2001." The report concludes that the following four factors were responsible for California's gas price spikes: (1) anticompetitive actions by El Paso, the owner of an interstate pipeline, drove up gas prices at the California border; (2) low rainfall limited the supply of hydroelectric generation, resulting in increased demand of gas-fired electric generation; (3) noncore customers did not have sufficient gas in storage; and (4) gas prices were higher, not only in California, but across the country, during that period.

Demand: The report attributes price spikes at the southern California border to the high demand for gas by electric generators along with the low precipitation in 2000 and 2001 in California and the Pacific Northwest. The report estimates that demand for natural gas in California increased 22 per cent during the period from 1996 to 2000. Low precipitation in 2000 and 2001 in California and the Pacific Northwest limited the amount of hydroelectric generation available to California. The report also states that when California's restructured electricity market began to collapse in May 2000, gas demand from

[2] California Public Utilities Commission, 2002-2006, California Natural Gas Infrastructure Outlook, Natural Gas, November 2001.

gas-fired power plants soared. PG&E and SoCalGas' gas deliveries increased nearly 20% over the previous year, and SDG&E was forced to curtail noncore gas customers in the winter of 2000-2001 because of unusually high electric generation demand.

Storage: The report notes the neglect of noncore customers to inject enough gas into storage as another reason for the high price spikes. When demand increased, noncore customers could not rely on stored gas to meet their requirements and had to transport gas across the border, further exacerbating escalating prices.

Although the Natural Gas Infrastructure Report identifies factors both external to California (the El Paso contract, dry hydro conditions in the Pacific Northwest and higher gas prices across North America), and internal to California (dry hydro conditions in California, failure of California noncore customers to store adequate gas, and increased demand of California's electric generators) as reasons for high price spikes at the California border, it did not investigate any gas trading activities of regulated utilities or other entities at the border. We open this proceeding because gas trading activities of utilities under California jurisdiction as one possible cause of the gas price spikes experienced at the southern California border in the winter of 2000/2001 remain unexplored.

FERC Review of Gas Activity at the California Border

The San Juan and Permian Basins are natural gas reserves located in New Mexico and Texas. The price of gas from these basins was historically used as a benchmark for the Southern California border price. In March 2000, El Paso Merchant Energy contracted for 1,220 million cubic feet per day (MMcfd) of El Paso pipeline capacity. By the summer of 2000, the price of gas at the border began to reflect a substantial mark-up from these southwest producing basins'

prices. On April 4, 2000, the Commission filed a Complaint with the FERC arguing that a 15-month contract between El Paso (the owner of the pipeline) and El Paso Merchant Energy (an affiliate of El Paso) had the potential for market power and affiliate abuse. On March 28, 2001, the FERC dismissed the affiliate abuse aspects of the complaint, but set for hearing the issue of "whether El Paso Pipeline and/or El Paso Merchant Energy had market power and, if so, exercised it."[3] Shortly after the El Paso Merchant Energy contract expired in May 2001, California border prices again corresponded to San Juan Basin prices. The Commission and others filed requests for rehearing on the affiliate abuse issue and on June 11, 2001, the FERC issued its Order on Rehearing which set for hearing, "the allegations of affiliate abuse and possible violations of the Affiliate Standards raised by the complaint."[4]

On October 9, 2001, in the Initial Decision on the CPUC v. El Paso complaint, the FERC's Chief Administrative Law Judge (Chief Judge) agreed that El Paso violated the FERC affiliate abuse regulations and that El Paso and El Paso Merchant Energy had the ability to exercise market power. This decision, however, ruled that no clear evidence was shown to demonstrate an exercise of market power.[5] The Commission, Edison, and PG&E appealed this finding to the FERC. On December 27, 2001, the FERC subsequently agreed that additional

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[3] Public Utilities Commission of the State of California v. El Paso Natural Gas Company, et al., 94 FERC ¶ 61,338 at 62,255 (2001).

[4] Public Utilities Commission of the State of California v. El Paso Natural Gas Company, et al., 95 FERC ¶ 61,368 at 62,397 (2001).

[5] Public Utilities Commission of the State of California v. El Paso Natural Gas Company, et al., 97 FERC ¶ 63,004 (2001).

hearings were warranted. Additional hearings were held in March and April 2002. The FERC Chief Judge issued a new initial decision on September 23, 2002, this time concluding that El Paso Corporation exercised market power when it withheld large amounts of capacity that it could have flowed to its California delivery points. The ruling states that El Paso's actions significantly increased the price of natural gas flowing to California and substantially tightened the supply of natural gas at the California border.[6]

On February 13, 2002, the FERC issued an Order entitled "Order Directing Staff Investigation."[7] In this Order, FERC directed its Staff to "undertake a fact-finding investigation into whether any entity, including Enron Corporation, manipulated short-term prices in electric energy or natural gas markets in the West or otherwise exercised undue influence over wholesale prices in the West, for the period January 1, 2000 forward."[8] On August 13, 2002, FERC Staff published its *Initial Report on Company-Specific Separate Proceedings and Generic Reevaluations; Published Natural Gas Price Data; And Enron Strategies* ("Initial Report").[9] Among other things, the Initial Report states that, "While Staff is continuing to investigate whether there was actual manipulation of spot gas

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[6] Public Utilities Commission of the State of California v. El Paso Natural Gas Company, et al., 100 FERC ¶ 63,041 (2002)

[7] Public Utilities Commission of the State of California v. El Paso Natural Gas Company, et al., 98 FERC ¶ 61,165 (2002)

[8] Public Utilities Commission of the State of California v. El Paso Natural Gas Company, et al., 98 FERC at 61,614

[9] Docket # PA02-2-000 http://www.ferc.gov/Electric/bulkpower/PA02-2/Initial-Report-PA02-2-000.pdf

prices, we have preliminary indications that this may have occurred. Also, market participants had the incentive to manipulate spot prices upward for natural gas at the California delivery points."[10]

[10] *Id.*

Nevada Antitrust Suite

On November 1, 2002, the Nevada Attorney General filed an antitrust suite through the Nevada Bureau of Consumer Protection, alleging that several interstate gas pipelines and local distribution companies conspired to overcharge Nevada consumers for gas and electricity over the past five years. The suit alleges that the companies including El Paso and Sempra Energy engaged in an elaborate conspiracy to manipulate the supply of natural gas and refrain from competing against each other thereby causing the tremendous natural gas spikes in the Western energy markets. The suit further claims the defendants plotted to exercise market dominance and stifle the construction of competing pipelines serving the southwestern U.S. and northern Mexico beginning in 1996 and lasting through June 2001. The suit alleges that the conspiracy between El Paso and SoCalGas drove up prices in the southern California gas market, which harmed consumers.

Preliminary Scoping Memo

The scope of this proceeding shall include all issues raised in this order, but will not be limited to these issues. Any party may suggest related issues for the Commission's consideration.

In D.02-06-023, the Commission ordered the Energy Division to prepare an OII of the cause of border price spikes experienced during the period from December 2000 through spring 2001. We are broadening the specified time period of this investigation back to March 2000 to coincide with the commencement of the El Paso contract with El Paso Merchant Energy.

At a minimum, we are interested in investigating the following questions:

1. Did any of the entities under our regulatory jurisdiction play a role in causing the increase in California border prices between March 2000 and May 2001?

2. Did any of the utilities' affiliates or parent companies play a role in causing the increase in border prices? Did concerns about affiliates or parents' financial position cause utilities to take actions that may have increased gas costs?

3. What were the primary factors that caused the increase in prices? In addition to the increase in gas costs caused by El Paso's actions, what other factors may have caused gas prices to increase to such high levels? Did recently acknowledged inaccurate reporting of gas price information to energy trade publications by energy trading companies have any affect on published index prices?

4. Did the utilities' gas cost incentive mechanisms create perverse incentives to increase or otherwise manipulate natural gas prices at the California border? We shall examine whether SoCalGas' Year 7 and Year 8 operations under the GCIM, enabled them to exercise market power and/or anticompetitive behavior. If so, should these incentive mechanisms be modified or eliminated to prevent such activity?

We now order Phase I of an investigation into the gas transactions of SoCalGas, SDG&E, and Sempra Energy Trading for the period March 2000 through May 2001. We prefer to initially focus on the Sempra Energy Companies to more fully explore the issues raised in SoCalGas' GCIM proceeding, A.00-06-023, as well as other evidence to be obtained in the course of this investigation. Phase II of this Investigation will address the transactions of PG&E, PG&E Energy Trading, SW Gas, Alenco Gas Services Inc., Conwest Exploration, Ltd., Edison, and Edison Mission Energy for the same period. Phase II of this investigation will commence at a time to be set forth in a future Commission Ruling.

We expect cooperation in this investigation from other non-jurisdictional entities, especially from the affiliate trading entities of the utilities.

Discovery in Phase I of this investigation may commence upon issuance of this OII.

This OII is today served on the parties on the service lists of SoCalGas A.00-06-023, and on the service list of SoCalGas' most recent Biennial Cost Allocation Proceeding (BCAP) A.01-09-024, SDG&E BCAP A.01-10-005, PG&E BCAP A.00-04-002, SW Gas General Rate Case (GRC) A.02-02-012, and Edison GRC A.02-05-004.

The rules and procedures implementing many of the reforms contained in Senate Bill (SB 960) are found in Article 2.5 of the Rules of Practice and Procedure (Rules), which are posted on the Commission's website. Pursuant to Rule 4(a) the rules in Article 2.5 shall apply to this proceeding. As per the provisions of SB 960, Phase I of the present investigation is categorized as a Ratesetting proceeding and is expected to require a hearing.

The assigned Commissioner and Administrative Law Judge shall convene a prehearing conference (PHC) within 60 days of this Order to develop a service list for this proceeding and to delineate further issues related to scope and schedule for this proceeding. Notice of the PHC will be provided by a ruling.

Any person who objects to the categorization of this investigation must file an appeal no later than ten days after the date of this OII, pursuant to Rule 6.4(a).

The temporary service list is attached to this order and shall be used for service until a service list for this proceeding is established at the PHC. Persons who want to become a party to this proceeding shall appear at the PHC, or at the formal hearing, and fill out the "Notice of Party/Non-Party Status" form (appearance form).

Those persons who do not want to be parties, and only want notice of the hearings, rulings, proposed decisions, and decisions, may either appear either at the PHC or at the formal hearing and fill out an appearance form, or they may mail a written request to the Process Office requesting that they be added to the service list for information only.

Those persons employed by the State of California who are interested in this proceeding may be added to the "state service" section of the service list by appearing either at the prehearing conference or at the formal hearing and filling out an appearance form, or they may mail a written request to the Process Office requesting that they be added to the state service list. All of the names appearing on the state service list shall be served with all documents that parties may submit or file in connection with this proceeding.

The Process Office shall develop an initial service list based on the appearances at the first PHC. This initial service list shall be posted on the Commission's website, www.cpuc.ca.gov, as soon as it is practicable.

Any party interested in participating in this investigation who is unfamiliar with the Commission's procedures should contact the Commission's Public Advisor Office in Los Angeles at (213) 649-7055, or in San Francisco at (415) 703 2074.

Consistent with Rule 6(e), we expect this proceeding to be concluded within 18 months.

Ex Parte Communications

This proceeding is subject to Rule 7(c) of the Commission's Rules of Practice and Procedure. In addition to placing specific requirements on ex parte communications, Rule 7 (c) also requires parties to report ex parte communications pursuant to Rule 7.1.

ORDER

IT IS ORDERED that:

1. An investigation is instituted into the gas market activity of Southern California Gas Company (SoCalGas), San Diego Gas & Electric Company (SDG&E), Sempra Energy Trading, Southwest Gas (SW Gas), Pacific Gas and Electric Company (PG&E), PG&E Energy Trading, Alenco Gas Services, Conwest Exploration, Ltd., Southern California Edison Company (Edison), and Edison Mission Energy which may have affected prices at the California border during the period from March 2000 through May 2001.

2. SoCalGas, SDG&E, PG&E, SW Gas, and Edison are made respondents to this proceeding.

3. The respondents are required to retain all documents which pertain to transactions affecting gas prices at the California border during the period March 2000 through May 2001.

4. We will approach this Investigation in two phases: Phase I will address the activities of the Sempra Energy Companies of SoCalGas, SDG&E, and Sempra Energy Trading. Phase I will commence immediately.

5. Phase II will focus on the transactions of SW Gas, PG&E, PG&E Energy Trading, Alenco Gas Services, Conwest Exploration, Ltd., Edison, and Edison Mission Energy. Phase II of this investigation will commence at a time set forth in a future Ruling of the Commission in this proceeding.

6. Phase II will focus on the transactions of SW Gas, PG&E, PG&E Energy Trading, Alenco Gas Services, Conwest Exploration, Edison, and Edison Mission Energy. Phase II of this investigation will commence at a time set forth in a future Ruling of the Commission in this proceeding.

7. Discovery in Phase I of this proceeding may commence immediately.

8. At a hearing to be scheduled by the Assigned Commissioner and Administrative Law Judge, Phase I respondents shall appear and show cause demonstrating why gas prices at the California border dramatically increased during the period from March 2000 through May 2001.

9. Respondents in Phase I shall file and serve written testimony in accordance with the schedule set forth in the assigned Commissioner Scoping Memo issued after the first PHC. Other parties may file and serve testimony in accordance with the schedule set forth in the Assigned Commissioner's Scoping Memo.

10. The Executive Director shall cause this Order Instituting Investigation to be served on the respondents and on the service lists of SoCalGas Gas Cost Incentive Mechanism Application (A.) 00-06-023, SoCalGas Biennial Cost Allocation Proceeding (BCAP) A.01-09-024, SDG&E BCAP A.01-10-005, PG&E BCAP A.00-04-002, SW GAS General Rate Case (GRC) A.02-02-012, and Edison GRC A.02-05-004.

11. The temporary service list is attached and shall be used for service of all pleadings until a service list for this proceeding is established. An initial service list for this proceeding shall be created by the Process Office and posted on the Commission's website (www.cpuc.ca.gov) as soon as it is practicable after the first prehearing conference. Parties may also obtain the service list by contacting the Commission's Process Office at (415) 703 2021.

12. The category of the investigation is determined to be Ratesetting as that term is defined in Rule 5(c) of the Commission's Rules of Practice and Procedure.

Deccanodups

LOCATION	WASHID	TRADE_DATE	TRADE_DATE	LEGAL_NM
SCAL/El Paso/3200322	800	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	797	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	798	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	808	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	797	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	798	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	799	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	800	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	799	12/1/2000	12/1/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	812	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	807	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	803	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	805	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	802	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	802	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	803	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	806	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	804	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	805	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	806	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	807	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	808	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	804	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	809	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	809	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	810	12/1/2000	12/1/2000	Enron North America Corp.
SCAL/El Paso/3200322	810	12/1/2000	12/1/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	812	12/1/2000	12/1/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	818	12/4/2000	12/4/2000	Enron North America Corp.
SCAL/El Paso/3200322	821	12/4/2000	12/4/2000	Enron North America Corp.
SCAL/El Paso/3200322	819	12/4/2000	12/4/2000	Enron North America Corp.
SCAL/El Paso/3200322	820	12/4/2000	12/4/2000	Enron North America Corp.
SCAL/El Paso/3200322	815	12/4/2000	12/4/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	817	12/4/2000	12/4/2000	Enron North America Corp.
SCAL/El Paso/3200322	815	12/4/2000	12/4/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	817	12/4/2000	12/4/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	818	12/4/2000	12/4/2000	Enron North America Corp.
SCAL/El Paso/3200322	819	12/4/2000	12/4/2000	Enron North America Corp.
SCAL/El Paso/3200322	820	12/4/2000	12/4/2000	Enron North America Corp.
SCAL/El Paso/3200322	821	12/4/2000	12/4/2000	Enron North America Corp.
SCAL/El Paso/3200322	833	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	834	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	835	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	831	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	824	12/5/2000	12/5/2000	Enron North America Corp.
PGEN/Malin/MALI	827	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	838	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	839	12/5/2000	12/5/2000	Enron North America Corp
SCAL/El Paso/3200322	840	12/5/2000	12/5/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	837	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	823	12/5/2000	12/5/2000	Enron North America Corp.

Deccanodups

SCAL/El Paso/3200322	824	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	832	12/5/2000	12/5/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	825	12/5/2000	12/5/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	826	12/5/2000	12/5/2000	Enron North America Corp.
PGEN/Malin/MALI	827	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	823	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	829	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	829	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	830	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	831	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	832	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	833	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	834	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	835	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	830	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	836	12/5/2000	12/5/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	825	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	836	12/5/2000	12/5/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	826	12/5/2000	12/5/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	837	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	838	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	839	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	840	12/5/2000	12/5/2000	Enron North America Corp.
SCAL/El Paso/3200322	856	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	857	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	855	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	853	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	854	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	851	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	852	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	845	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	845	12/6/2000	12/6/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	847	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	849	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	850	12/6/2000	12/6/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	847	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	849	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	850	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	851	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	852	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	853	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	854	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	855	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	856	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	857	12/6/2000	12/6/2000	Enron North America Corp.
SCAL/El Paso/3200322	858	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	859	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	858	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	859	12/7/2000	12/7/2000	Enron North America Corp
SCAL/El Paso/3200322	860	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	862	12/7/2000	12/7/2000	Enron North America Corp
SCAL/El Paso/3200322	863	12/7/2000	12/7/2000	Enron North America Corp.

PG&E/City Gate/CG0202N	867	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	864	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	865	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	875	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	876	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	862	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	863	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	864	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	865	12/7/2000	12/7/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	867	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	874	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	872	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	873	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	869	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	870	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	869	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	870	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	872	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	873	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	874	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	875	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	876	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	877	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	877	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	881	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	882	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	878	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	879	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	879	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	878	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	860	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	881	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	882	12/7/2000	12/7/2000	Enron North America Corp.
SCAL/El Paso/3200322	892	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	887	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	887	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	888	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	888	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	889	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	890	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	891	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	892	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	893	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	893	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	889	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	890	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	891	12/8/2000	12/8/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	894	12/8/2000	12/8/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	894	12/8/2000	12/8/2000	Enron North America Corp.
SCAL/El Paso/3200322	901	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	926	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	899	12/11/2000	12/11/2000	Enron North America Corp.

SCAL/El Paso/3200322	928	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	902	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	933	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	931	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	909	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	929	12 11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	930	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	903	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	937	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	936	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	931	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	932	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	910	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	933	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	934	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	935	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	934	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	904	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	927	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	921	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	928	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	930	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	936	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	937	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	938	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	938	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	935	12/11/2000	12/11/2000	Enron North America Corp.
SCAL/El Paso/3200322	941	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	942	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	943	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	944	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	944	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	943	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	942	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	948	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	947	12/12/2000	12/12/2000	Enron North America Corp.
PGEN/Malin/MALI	945	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	949	12/12/2000	12/12/2000	Enron North America Corp.
PGEN/Malin/MALI	945	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	950	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	941	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	947	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	948	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	949	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	950	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	951	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	951	12/12/2000	12/12/2000	Enron North America Corp.
SCAL/El Paso/3200322	954	12/13/2000	12/13/2000	Enron North America Corp.
SCAL/El Paso/3200322	954	12/13/2000	12/13/2000	Enron North America Corp.
SCAL/El Paso/3200322	956	12/14/2000	12/14/2000	Enron North America Corp.
SCAL/El Paso/3200322	956	12/14/2000	12/14/2000	Enron North America Corp.
SCAL/El Paso/3200322	957	12/14/2000	12/14/2000	Enron North America Corp.

PGEN/Malin/MALI	958	12/14/2000	12/14/2000	Enron North America Corp.
PGEN/Malin/MALI	958	12/14/2000	12/14/2000	Enron North America Corp.
SCAL/El Paso/3200322	957	12/14/2000	12/14/2000	Enron North America Corp.
PGEN/Malin/MALI	959	12/14/2000	12/14/2000	Enron North America Corp.
PGEN/Malin/MALI	959	12/14/2000	12/14/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	961	12/15/2000	12/15/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	961	12/15/2000	12/15/2000	Enron North America Corp.
SCAL/El Paso/3200322	962	12/18/2000	12/18/2000	Enron North America Corp.
SCAL/El Paso/3200322	962	12/18/2000	12/18/2000	Enron North America Corp.
SCAL/El Paso/3200322	977	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	970	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	971	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	973	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	968	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	969	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	974	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	975	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	976	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	968	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	969	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	970	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	971	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	972	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	973	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	974	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	975	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	976	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	972	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	977	12/19/2000	12/19/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	980	12/19/2000	12/19/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	980	12/19/2000	12/19/2000	Enron North America Corp.
SCAL/El Paso/3200322	981	12/20/2000	12/20/2000	Enron North America Corp.
SCAL/El Paso/3200322	981	12/20/2000	12/20/2000	Enron North America Corp.
SCAL/El Paso/3200322	982	12/21/2000	12/21/2000	Enron North America Corp.
SCAL/El Paso/3200322	982	12/21/2000	12/21/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	987	12/21/2000	12/21/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	987	12/21/2000	12/21/2000	Enron North America Corp.
PGEN/Malin/MALI	997	12/28/2000	12/28/2000	Enron North America Corp.
PGEN/Malin/MALI	997	12/28/2000	12/28/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	999	12/28/2000	12/28/2000	Enron North America Corp.
PG&E/City Gate/CG0202N	999	12/28/2000	12/28/2000	Enron North America Corp.
SCAL/El Paso/3200322	1004	12/29/2000	12/29/2000	Enron North America Corp.
SCAL/El Paso/3200322	1003	12/29/2000	12/29/2000	Enron North America Corp.
SCAL/El Paso/3200322	1003	12/29/2000	12/29/2000	Enron North America Corp.
SCAL/El Paso/3200322	1004	12/29/2000	12/29/2000	Enron North America Corp.
Count	304	12/29/2000		
Count/2	152	12/29/2000		
Min		12/29/2000	12/1/2000	
Max			12/29/2000	
		12/1/2000		
		12/29/2000		

Deccanodups

CP_LEGAL_NM	AFFLIATE	START_DTM	STOP_DTM	PS	FIRMNESS_CD
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Coastal Merchant Energy, L.P.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	P	F
Reliant Energy Services, Inc.	N	12/2/2000	12/4/2000	S	F
Coastal Merchant Energy, L.P.	N	12/2/2000	12/4/2000	P	F
Aquila Energy Marketing Corporation	N	12/5/2000	12/5/2000	S	F
Reliant Energy Services, Inc.	N	12/5/2000	12/5/2000	S	F
Reliant Energy Services, Inc.	N	12/5/2000	12/5/2000	S	F
Reliant Energy Services, Inc.	N	12/5/2000	12/5/2000	S	F
Reliant Energy Services, Inc.	N	12/5/2000	12/5/2000	S	F
AEP Energy Services, Inc.	N	12/5/2000	12/5/2000	S	F
Reliant Energy Services, Inc.	N	12/5/2000	12/5/2000	P	F
AEP Energy Services, Inc.	N	12/5/2000	12/5/2000	P	F
Aquila Energy Marketing Corporation	N	12/5/2000	12/5/2000	P	F
Reliant Energy Services, Inc.	N	12/5/2000	12/5/2000	P	F
Reliant Energy Services, Inc.	N	12/5/2000	12/5/2000	P	F
Reliant Energy Services, Inc.	N	12/5/2000	12/5/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Cook Inlet Energy Supply L.L.C.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Duke Energy Trading and Marketing, L.L.C.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F

Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Coast Energy Canada, Inc.	N	12/6/2000	12/6/2000	P	F
Duke Energy Trading and Marketing, L.L.C.	N	12/6/2000	12/6/2000	P	F
Cook Inlet Energy Supply L.L.C.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	S	F
Coast Energy Canada, Inc.	N	12/6/2000	12/6/2000	S	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Duke Energy Trading and Marketing, L.L.C.	N	12/6/2000	12/6/2000	S	F
Duke Energy Trading and Marketing, L.L.C.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/6/2000	12/6/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Duke Energy Trading and Marketing, L.L.C.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	S	F
Duke Energy Trading and Marketing, L.L.C.	N	12/7/2000	12/7/2000	S	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/7/2000	12/7/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F

Coastal Merchant Energy, L.P.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Coastal Merchant Energy, L.P.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	S	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/8/2000	12/8/2000	P	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	S	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	S	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	P	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	P	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	S	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	P	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	P	F
Duke Energy Trading and Marketing, L.L.C.	N	12/9/2000	12/11/2000	P	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	P	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	P	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	S	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	S	F
Reliant Energy Services, Inc.	N	12/9/2000	12/11/2000	S	F
Duke Energy Trading and Marketing, L.L.C.	N	12/9/2000	12/11/2000	S	F
Coastal Merchant Energy, L.P.	N	12/9/2000	12/11/2000	S	F
Coastal Merchant Energy, L.P.	N	12/9/2000	12/11/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F

Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F

Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	P	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/12/2000	12/12/2000	S	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	P	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	P	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	P	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	P	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	S	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	S	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	S	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	S	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	S	F
Cook Inlet Energy Supply L.L.C.	N	12/13/2000	12/13/2000	P	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	S	F
Cook Inlet Energy Supply L.L.C.	N	12/13/2000	12/13/2000	S	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	S	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	S	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	P	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	P	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	P	F
Reliant Energy Services, Inc.	N	12/13/2000	12/13/2000	P	F
Southern California Gas Company	N	12/13/2000	12/13/2000	S	F
Southern California Gas Company	N	12/13/2000	12/13/2000	P	F
Reliant Energy Services, Inc.	N	12/14/2000	12/14/2000	S	F
Reliant Energy Services, Inc.	N	12/14/2000	12/14/2000	P	F
Reliant Energy Services, Inc.	N	12/15/2000	12/15/2000	P	F
Reliant Energy Services, Inc.	N	12/15/2000	12/15/2000	S	F
Sempra Energy Solutions	N	12/15/2000	12/15/2000	P	F

Deccanodups

Coral Energy Resources, L.P.	N	12/15/2000	12/15/2000	S	F
Coral Energy Resources, L.P.	N	12/15/2000	12/15/2000	P	F
Sempra Energy Solutions	N	12/15/2000	12/15/2000	S	F
Dynegy Marketing and Trade	N	12/15/2000	12/15/2000	P	F
Dynegy Marketing and Trade	N	12/15/2000	12/15/2000	S	F
El Paso Merchant Energy - Gas, L.P.	N	12/16/2000	12/18/2000	P	F
El Paso Merchant Energy - Gas, L.P.	N	12/16/2000	12/18/2000	S	F
Reliant Energy Services, Inc.	N	12/19/2000	12/19/2000	S	F
Reliant Energy Services, Inc.	N	12/19/2000	12/19/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	S	F
Reliant Energy Services, Inc.	N	12/20/2000	12/20/2000	P	F
Aquila Energy Marketing Corporation	N	12/20/2000	12/20/2000	S	F
Aquila Energy Marketing Corporation	N	12/20/2000	12/20/2000	P	F
R liant Energy Services, Inc.	N	12/21/2000	12/21/2000	S	F
Reliant Energy Services, Inc.	N	12/21/2000	12/21/2000	P	F
Reliant Energy Services, Inc.	N	12/22/2000	12/22/2000	P	F
Reliant Energy Services, Inc.	N	12/22/2000	12/22/2000	S	F
Coral Energy Resources, L.P.	N	12/22/2000	12/22/2000	P	F
Coral Energy Resources, L.P.	N	12/22/2000	12/22/2000	S	F
Cook Inlet Energy Supply L.L.C.	N	12/29/2000	12/31/2000	P	F
Cook Inlet Energy Supply L.L.C.	N	12/29/2000	12/31/2000	S	F
Enron Energy Services, Inc.	Y	12/29/2000	12/31/2000	S	F
Enron Energy Services, Inc.	Y	12/29/2000	12/31/2000	P	F
Reliant Energy Services, Inc.	N	1/1/2001	1/2/2001	S	F
Reliant Energy Services, Inc.	N	1/1/2001	1/2/2001	S	F
Reliant Energy Services, Inc.	N	1/1/2001	1/2/2001	P	F
Reliant Energy Services, Inc.	N	1/1/2001	1/2/2001	P	F
					Sum
					Sum/2
					Weighted Average
					Min
					Max

Deccanodups

QTY	FEE	qty*fee	INDEX_NM	INDEX_PRODUCT	INDEX_SOURCE	EOL_ID	BROKER
10000	18	180000	1*			644053	
10000	18.5	185000	1*			644055	
10000	18.5	185000	1*			644056	
10000	19	190000	1*			644068	
10000	18.5	185000	1*			644631	
10000	18.5	185000	1*			644633	
10000	18.5	185000	1*			644635	
10000	18	180000	1*			644638	
10000	18.5	185000	1*			644805	
5000	16.5	82500	1*			644826	
10000	19.25	192500	1*			644942	
10000	19.5	195000	1*			644951	
10000	19.75	197500	1*			644959	
10000	20	200000	1*			644961	
10000	20	200000	1*			644985	
10000	19.5	195000	1*			644991	
10000	19.75	197500	1*			645000	
10000	19.5	195000	1*			645010	
10000	19.75	197500	1*			645038	
10000	19.75	197500	1*			645040	
10000	19.25	192500	1*			645050	
10000	19	190000	1*			645056	
10000	19.5	195000	1*			645088	
10000	19.25	192500	1*			645095	
10000	19.25	192500	1*			645119	
10000	19.25	192500	1*			645178	
10000	19.25	192500	1*			645548	
5000	16.5	82500	1*			646138	
5000	20.5	102500	1*			649809	
10000	21.5	215000	1*			649814	
10000	22	220000	1*			649829	
10000	22	220000	1*			649840	
10000	21.75	217500	1*			649845	
5000	21	105000	1*			650211	
10000	21.75	217500	1*			650254	
5000	21	105000	1*			650306	
5000	20.5	102500	1*			650621	
10000	22	220000	1*			650901	
10000	22	220000	1*			650904	
10000	21.5	215000	1*			651459	
10000	26.5	265000	1*			656993	
10000	26.5	265000	1*			657008	
10000	26.5	265000	1*			657010	
10000	26.75	267500	1*			657019	
10000	27	270000	1*			657068	
5000	26	130000	1*			657096	
10000	27.75	277500	1*			657315	
10000	27.75	277500	1*			657322	
10000	27.75	277500	1*			657330	
5000	26.75	133750	1*			657377	
10000	27.25	272500	1*			657411	

10000	27	270000	1*	657417
10000	26.75	267500	1*	657444
5000	26.75	133750	1*	657596
5000	26.5	132500	1*	657607
5000	26	130000	1*	657615
10000	27.25	272500	1*	657777
10000	27.25	272500	1*	657782
10000	27.25	272500	1*	657876
10000	27.25	272500	1*	657881
10000	26.75	267500	1*	657931
10000	26.75	267500	1*	657937
10000	26.5	265000	1*	657994
10000	26.5	265000	1*	657998
10000	26.5	265000	1*	658001
10000	27.25	272500	1*	658295
10000	27.25	272500	1*	658299
5000	26.75	133750	1*	658324
10000	27.25	272500	1*	658396
5000	26.5	132500	1*	658511
5000	26.75	133750	1*	658592
10000	27.75	277500	1*	658964
10000	27.75	277500	1*	658966
10000	27.75	277500	1*	658968
10000	35	350000	1*	663480
10000	35	350000	1*	663482
10000	36	360000	1*	663486
10000	38	380000	1*	663497
10000	37.5	375000	1*	663570
10000	38.5	385000	1*	663638
10000	38.5	385000	1*	663641
10000	41	410000	1*	663853
10000	41	410000	1*	663870
5000	36	180000	1*	664016
10000	39.5	395000	1*	664026
10000	39.5	395000	1*	664031
5000	36	180000	1*	664129
10000	39.5	395000	1*	664506
10000	39.5	395000	1*	664510
10000	38.5	385000	1*	664517
10000	38.5	385000	1*	664521
10000	38	380000	1*	664532
10000	37.5	375000	1*	664537
10000	36	360000	1*	664779
10000	35	350000	1*	664900
10000	35	350000	1*	664902
10000	41	410000	1*	668542
10000	41	410000	1*	668545
10000	41	410000	1*	668548
10000	41	410000	1*	668550
10000	40	400000	1*	668558
10000	43	430000	1*	668623
10000	43	430000	1*	668625

5000	36	180000 1*	668639
10000	44	440000 1*	668668
10000	44	440000 1*	668697
10000	45	450000 1*	668709
10000	45	450000 1*	668713
10000	43	430000 1*	668721
10000	43	430000 1*	668724
10000	44	440000 1*	668799
10000	44	440000 1*	668800
5000	36	180000 1*	668822
10000	47	470000 1*	668946
10000	48	480000 1*	668992
10000	48	480000 1*	669091
10000	50	500000 1*	669097
10000	50	500000 1*	669098
10000	50	500000 1*	669130
10000	50	500000 1*	669134
10000	48	480000 1*	669193
10000	48	480000 1*	669194
10000	47	470000 1*	669201
10000	45	450000 1*	669266
10000	45	450000 1*	669268
10000	42	420000 1*	669280
10000	42	420000 1*	669548
10000	42	420000 1*	669627
10000	42	420000 1*	669694
10000	39	390000 1*	669741
10000	36	360000 1*	669749
10000	36	360000 1*	669763
10000	39	390000 1*	669771
10000	40	400000 1*	669853
10000	42	420000 1*	669885
10000	42	420000 1*	669888
10000	57	570000 1*	673404
10000	58	580000 1*	673408
10000	58	580000 1*	673576
10000	58	580000 1*	673577
10000	58	580000 1*	673580
10000	58	580000 1*	673745
10000	58	580000 1*	673748
10000	57	570000 1*	673809
10000	57	570000 1*	673980
10000	57	570000 1*	673985
10000	57	570000 1*	674049
10000	58	580000 1*	674097
10000	58	580000 1*	674100
10000	57	570000 1*	674214
5000	53.5	267500 1*	674730
5000	53.5	267500 1*	674824
10000	60	600000 1*	677548
10000	60	600000 1*	677551
10000	62	620000 1*	677555

10000	64	640000 1*	677559
10000	64	640000 1*	677560
10000	66	660000 1*	677563
10000	63	630000 1*	677712
10000	64	640000 1*	677718
10000	64	640000 1*	677720
10000	64	640000 1*	677721
10000	66	660000 1*	677724
10000	66	660000 1*	677726
10000	64	640000 1*	677728
10000	62	620000 1*	677742
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10000	60	600000 1*	677759
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10000	63	630000 1*	677763
10000	64	640000 1*	677767
10000	66	660000 1*	677773
10000	66	660000 1*	677782
10000	66	660000 1*	677783
10000	64	640000 1*	677803
10000	64	640000 1*	677805
10000	62	620000 1*	677808
10000	62	620000 1*	677809
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10000	63	630000 1*	677862
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10000	65	650000 1*	677870
10000	65	650000 1*	677921
10000	65	650000 1*	677938
10000	64	640000 1*	677942
10000	65	650000 1*	677968
10000	65	650000 1*	677971
10000	65	650000 1*	678037
10000	63	630000 1*	678041
10000	64	640000 1*	678104
10000	63	630000 1*	678106
10000	62	620000 1*	678109
10000	61	610000 1*	678112
10000	62	620000 1*	678119
10000	64	640000 1*	678157
10000	63	630000 1*	678158
10000	61	610000 1*	678160
10000	60	600000 1*	678167
10000	59	590000 1*	678170

10000	58	580000 1*	678173
10000	59	590000 1*	678177
10000	60	600000 1*	678178
10000	61	610000 1*	678179
10000	62	620000 1*	678181
10000	60	600000 1*	678198
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10000	60	600000 1*	678218
10000	61	610000 1*	678221
10000	61	610000 1*	678237
10000	60	600000 1*	678240
10000	62	620000 1*	678259
10000	60	600000 1*	678272
10000	57	570000 1*	678280
10000	56	560000 1*	678286
10000	57	570000 1*	678339
10000	58	580000 1*	678345
10000	59	590000 1*	678349
10000	62	620000 1*	678362
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10000	61	610000 1*	678487
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10000	54	540000 1*	678551
10000	54	540000 1*	678872
10000	56	560000 1*	678875
10000	32	320000 1*	682725
10000	31	310000 1*	682727
10000	29	290000 1*	682733
10000	28	280000 1*	682737
10000	28	280000 1*	682749
10000	29	290000 1*	682750
10000	31	310000 1*	682755
10000	30	300000 1*	682787
10000	31	310000 1*	682789
5000	19	95000 1*	682878
10000	28	280000 1*	682965
5000	19	95000 1*	683112
10000	26	260000 1*	683277
10000	32	320000 1*	683620
10000	31	310000 1*	683629
10000	30	300000 1*	683631
10000	28	280000 1*	683640
10000	26	260000 1*	683654
10000	26	260000 1*	683664
10000	26	260000 1*	683764
10000	21	210000 1*	687009
10000	21	210000 1*	687362
10000	19.5	195000 1*	690999
10000	19.5	195000 1*	691321
5000	17	85000 1*	691475

5000	12	60000	1*	691748
5000	12	60000	1*	691886
5000	17	85000	1*	692035
5000	12.5	62500	1*	692056
5000	12.5	62500	1*	692120
5000	12.25	61250	1*	694689
5000	12.25	61250	1*	694970
10000	20.5	205000	1*	698844
10000	20.5	205000	1*	699054
10000	20	200000	1*	702620
10000	21	210000	1*	702628
10000	21	210000	1*	702630
10000	21	210000	1*	702631
10000	21.5	215000	1*	702635
10000	21.5	215000	1*	702640
10000	21	210000	1*	702692
10000	21	210000	1*	702694
10000	21	210000	1*	702697
10000	21.5	215000	1*	702781
10000	21.5	215000	1*	702783
10000	21	210000	1*	702870
10000	21	210000	1*	702872
10000	20.5	205000	1*	702878
10000	21	210000	1*	703047
10000	21	210000	1*	703050
10000	21	210000	1*	703052
10000	21	210000	1*	703056
10000	20.5	205000	1*	703234
10000	20	200000	1*	703264
5000	13.8	69000	1*	703329
5000	13.8	69000	1*	703629
10000	21	210000	1*	706305
10000	21	210000	1*	706629
10000	20	200000	1*	710365
10000	20	200000	1*	710797
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Volume No. 12

Official Stenographers Report

Before the

FEDERAL ENERGY REGULATORY COMMISSION

IN THE MATTER OF:	DOCKET NO:
SAN DIEGO GAS & ELECTRIC COMPANY, COMPLAINANT v. SELLERS OF ENERGY AND ANCILLARY SERVICES INTO MARKETS OPERATED BY THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION AND THE CALIFORNIA POWER EXCHANGE, RESPONDENTS.	EL00-95-031
INVESTIGATION OF PRACTICES OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR AND THE CALIFORNIA POWER EXCHANGE	EL00-98-030 EL00-98-033
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION	RT01-85-000 RT01-85-001
INVESTIGATION OF WHOLESALE RATES OF PUBLIC UTILITY SELLERS OF ENERGY AND ANCILLARY SERVICES IN THE WESTERN SYSTEMS COORDINATING COUNCIL	EL01-68-000 EL01-68-001
LOCATION: WASHINGTON, D.C.	PAGES: 567 - 714

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DATE: MONDAY, JULY 9, 2001

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(202) 347-3700

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IB/eah

1 MR. BILAS: I'd like to present Mr. Stout who
2 will make a presentation. He also has an affidavit which is
3 being copied right now, and as soon as it's available, we'll
4 make copies available to Your Honor and the reporter and the
5 participants here today.
6 PRESIDING JUDGE: Since you're going to be a
7 witness, could you raise your right hand?
8 Whereupon,
9 JOHN H. STOUT
10 was called as a witness herein, and having been first duly
11 sworn by the Presiding Judge, was examined and testified as
12 follows:
13 PRESIDING JUDGE: Give your full name and addr ss
14 to the reporter.
15 MR. STOUT: My name is John H. Stout, 4314 Sao
16 Paulo Street, Pasadena, Texas.
17 PRESIDING JUDGE: Do you want to sort of pick the
18 mike up?
19 MR. STOUT: Okay. Can you hear me now?
20 PRESIDING JUDGE: Yes, I can. Can you hear him?
21 It's important that she hears you.
22 MR. STOUT: I guess in my judgment, we've not
23 reached a settlement. In fact, we really haven't even come
24 close in these proceedings. And now the dilemma exists for
25 Judge Wagner to make recommendations to the Commission, and

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1 the Commission will have to make ultimate decisions,
2 decisions about who, if anyone should refund revenues, how
3 that allocation of revenues takes place between parties.
4 But there's another aspect of this case that has really not
5 received any discussion to speak of, and this once refunds
6 are established, there is yet another allocation process
7 that the Commission will have to deal with which takes those
8 refunds and allocates them to the parties that purchase
9 power from the ISO and PX.
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1 FERC is likely to need some manner of consistent
2 methodology in order to evaluate that allocation of refunds
3 and returns.
4 They indicated in some of the correspondence that
5 they would like for the ISO to do some evaluation of that.
6 They hinted perhaps the June 19th Order has some of the key
7 elements that they would like to see in that sort of
8 allocation. And the ISO did come back with a calculated
9 number.
10 But I want to point out very clearly for the
11 record that the calculations that were done by the ISO are
12 clearly not the June methodology that was advocated by the
13 Commission.
14 To the economists that testified yesterday, they
15 indicated that they thought the ISO had picked the key
16 elements and one economist I guess testified that it was the
17 intent of the June Order from FERC that they try to capture.
18 But to a business person, such as myself, it
19 doesn't appear that way. It appears instead that they took
20 the elements from the June Order that tend to inflate the
21 refund calculation, and those that might tend to deflate it,
22 they took those out and substituted alternative mechanisms
23 which further tend to inflate that calculation.
24 The model that the ISO has used is a secret black
25 box. We have been requesting information ever since the

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1 results of that model was first published several months
2 ago, information not on our competitors, but at least just
3 on our results. How did you determine the number for
4 Reliant and what was the number for Reliant?
5 The data, the model, and the results have never
6 been given the kind of validation, scrutiny that's necessary
7 for that sort of calculation to form a basis for a
8 Commission recommendation.
9 In fact, the only data that we've been allowed to
10 receive from that model, and it's been I think identified as
11 going to be released publicly, are some heat rate numbers.
12 When we went back and examined those heat rate
13 numbers, which were supposed to represent the highest actual
14 incremental heat rate in the system for each hour between
15 October and May, what we discovered is that 38 percent of
16 those hours, we had units operating that had substantially
17 higher heat rates than what the ISO had indicated were in
18 fact the highest heat rates in operation at the time.
19 That's not a very good track record with regard to the
20 quality of the model.
21 Contrary to the assertions that were made by the
22 state in their closing comments yesterday that they've been
23 forthright with answers, the fact is that ever since this
24 model was first introduced, the ISO, and now the state have
25 been reluctant to answer and in fact have refused to answer

many of the questions that have been asked by reliant.

The biggest problem that's inherent in the model used by the state has to do with gas prices. You've heard LADWP talk about that this morning. You've heard me talk about it several times during this conference.

And there are three problems with the way gas prices are evaluated in this model. Any time you artificially distort the gas prices downward, you're going to get a large refund calculation. That's what you're after, so be it.

But it distorts the results below the actual cost of the people who are producing the power. The first issue is the fact that the use of bid week monthly index price does match the way most people buy gas for transactions in the spot markets. As I mentioned before, prudent risk management requires that if you're going to sell into a long-term market, you might buy monthly gas or long-term gas.

But if you're selling into a spot market where you don't know from day to day exactly how much gas you need or when you're going to need it, it's impossible to arrange that gas on a month-ahead basis. Instead, you basically have to get that gas as you're dispatched by the ISO. Therefore, you're buying it at daily spot prices, not month-ahead index prices.

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1 When we went back and looked to see what sort of
2 difference that makes, to look at the daily prices for
3 Southern California, large gas packages, and the bid week
4 monthly prices during the period from May through October,
5 it turns out that monthly prices result in a value that's 16
6 percent less than the average of the actual daily prices.
7 That introduces basically a 16 percent error in the
8 calculation.
9 The second issue with the gas price calculation
10 is it clearly does not recognize the physical delivery
11 constraints that exist in the gas infrastructure in
12 California. You simply cannot get gas from Northern
13 California delivery points to Southern California.
14 We tried. Last year was a perfect example of an
15 opportunity where gas prices in the south were at record
16 levels, gas prices in the north, in some cases, were less
17 than half or maybe even a third of what they were in the
18 south.
19 We had 200 gas traders on our trading floor,
20 everyone of them trying to figure a way to get gas from
21 north to south so we could save money on our gas bill, and
22 the physical delivery infrastructure simply didn't exist to
23 get it there.
24 It's physically impossible for generators in the
25 south to procure two-thirds of their gas from delivery

1 points in the north from PG&E's City Gate and Malin, and
2 deliver it to their burner tips in the south. Yet that was
3 the foundation of the gas price calculation that was used by
4 the ISO.
5 There has been absolutely no testimony by the ISO
6 to refute the fact that that gas price calculation is not
7 going to give the right answer. In fact, the testimony from
8 their economist said you need to use actual costs, and
9 actual costs from places that you cannot get gas have no
10 bearing in trying to evaluate the actual cost in Southern
11 California.
12 I guess you might as well use gas price indices
13 from New York and Florida just as well as from Malin and
14 PG&E.
15 When we went back and looked at the impact that
16 the use of the blended average price has on the cost of gas
17 compared to, once again, the Southern California gas price,
18 we find that from October through May, the Southern
19 California gas costs are approximately 39 percent higher
20 than the gas prices found at Malin and PG&E's City Gate.
21 The third and final problem with the gas cost
22 calculation is it does not include the charges that are
23 imposed under CPUC regulations for local intra-state gas
24 transportation. For those of us in Southern California,
25 that's another 35 to 40 cents per mmBtu.

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1 Now I mentioned earlier to a business person it
2 seemed like the ISO or the state had taken the parts of the
3 Order that seemed to escalate the refund amount and that
4 they'd taken other parts of the order that tended to de-
5 escalate it and discount those.
6 The other two parts that they changed, which have
7 a tremendous impact on the calculation of refund have to do
8 with ancillary services and how you establish the cap on
9 price during non-emergency periods.
10 The FERC orders that have been issued to date
11 clearly indicate how ancillary service prices are capped.
12 They're capped at the energy cost.
13 But that's not what the ISO used in their
14 calculation. They went back and took the calculated proxy
15 energy price and subtracted from that some sort of heat rate
16 times gas price. To this point in time, we have been unable
17 to find out what it is they subtracted other than it's a
18 heat rate and a gas price.
19 But we do know that when you subtract something,
20 it's going to reduce the number, so we don't know yet how
21 they came up with an ancillary service refund. We do know
22 that it is not consistent with FERC's June Order.
23 And finally, and most importantly, the FERC order
24 had a very significant attribute of how it established
25 prices during non-emergency periods. It said you take the

1 price during the preceding emergency period stage one, and
2 you discount it 85 percent, and that sets a price ceiling
3 during the other periods of the year.
4 The ISO didn't do that in their methodology.
5 They used a continuously varying price, one that is based on
6 their estimated heat rate of the actual units in production,
7 which I've already pointed out was fatally flawed. And as a
8 result, it produced price caps in the market substantially
9 lower than would have been produced with the methodology,
10 such as used by FERC, using the 85 percent rule.
11 Let's talk a little bit about what the results of
12 those calculations were. Any time you use biased
13 calculations, you'll get results that are unjust and
14 unreasonable.
15 And to explain the results as they compare to
16 Reliant Energy, let me describe to you something known as
17 operating margin. I'll use this in my example.
18 Operating margin is what you have left after you
19 take your revenue and you subtract out the cost of fuel,
20 your variable O&M and your nox costs associated with
21 generating power.
22 Our operating margins in year 2000 did not go up
23 on a per-megawatt-hour basis; they actually went down by 26
24 percent compared to what we made two years earlier in 1998.
25 Our revenues went up substantially but the reason for that

1 was not because we were trying to extract higher margins
2 from the market, not because we were trying to gouge the
3 market; it was because our fuel costs went up by a factor of
4 sevenfold from what it was in 1998.
5 Between October and May, the transactions that we
6 sold into the ISO and PX, taking into account the deductions
7 that I mentioned earlier with regard to calculating
8 operating margin, results in an operating margin of $130
9 million.
10 The ISO has indicated in a document, which we now
11 understand is a public document, that they sent to Congress
12 in fact, that they expect refunds from Reliant Energy not
13 for the period from October through May, but just for
14 October through February. Their methodology calculates
15 refunds of $376 million. Their refund demand is more than
16 what we have in operating margin.
17 Simply stated, if we were to refund that amount
18 of money, we could not even recover our fuel costs.
19 The state threatened in its opening statement
20 yesterday that if we actually go to litigation on this case,
21 that their litigation position will be cost-of-service based
22 rates. I guess my conclusion from that would be cost-of-
23 service rates might be of benefit to us compared to their
24 current offer.
25 Now let me talk a little bit about what Reliant

1 has offered in terms of settling this for the public record.
2 MR. KAHN: Excuse me, Your Honor.
3 If Reliant would like to place their settlement
4 misconduct in the record, we will then feel free to respond
5 and reveal what's gone on in the last two weeks. I thought
6 that the rules were that what went on in the last two weeks
7 in settlement were not to be discussed.
8 If you noted yesterday, in my statement, I didn't
9 say one word about the settlement conduct of the parties
10 here. If either Reliant or the Generators would like to
11 make this public forum a debate about who behaved well and
12 who didn't behave well in the last two weeks, we welcome the
13 opportunity, but then we think we should have the first
14 opportunity.
15 I think that Reliant ought not to do that at this
16 point. As I understood what we're doing here is we're
17 discussing methodologies, not debating how the parties
18 behaved in the last two weeks.
19 PRESIDING JUDGE: Well, I didn't think Mr. Stout
20 was talking about how parties behaved, and each party can
21 make their own position public or anything they want to do
22 with it, but they can't talk about anybody else's position.
23 Now the state has made its position public. Its
24 made it clear that the governor said the settlement figure
25 is $8.9 billion, and that it could be paid for in several

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1 kinds of currencies, which was reported in an interview the
2 governor I had with, I believe, the Mercury.
3 And so if Mr. Stout wants to say what his offer
4 is, that's fine, but he can't tell what anybody else's offer
5 is, so the only offer that should be public should be, at
6 this point in time, the state's since they've made it
7 public.
8 If Mr. Stout wants to make Reliant's offer
9 public, that's his business.
10 MR. STOUT: And that is what I wish to do, Your
11 Honor.
12 You indicated to us that you needed a settlement
13 on three issues; credit, refunds, and future power
14 purchases. And I feel that we've addressed all three of
15 those.
16 In terms of credit, in the affidavit that we
17 filed this afternoon, we will have a written document which
18 describes what we feel like are the credit solutions that
19 are needed in the market.
20 With regard to future power purchases, our two
21 cent offer is still on the table. It's been on the table
22 since December of last year.
23 Based on news reports that have been publicly
24 released regarding the contracts, the long-term contracts
25 that have been entered into by the Department of Water

1 Resources, it's been indicated they have an average capacity
2 component of about four cents per kilowatt hour.
3 That makes the offer we have on the table about
4 half the cost of the existing DWR contracts. I will
5 acknowledge I have not gone back in detail and reviewed the
6 DWR contracts. I'm basing that statistic on what the media
7 has reported.
8 But that would indicate that the offer that we
9 have on the table should be an attractive offer for the
10 state. And we have over 500 megawatts available that
11 escalates to several thousand megawatts in future years if
12 they are interested.
13 With regard to the refund, the big issue that we
14 talked about for most of the conference, I'd like to
15 describe a little bit about what Reliant has done and what
16 we have offered.
17 Our calculations basically came from two
18 different methodologies. The first was to take the FERC
19 March 9th methodology and make that a 24 by 7 methodology by
20 using it to calculate a proxy price and during non-emergency
21 hours, using 85 percent of that proxy price to determine
22 what the price cap would be in the market.
23 We also evaluated the refund amounts that would
24 be generated from a calculation that works from the bottom
25 up, that works from our actual costs. We took our actual

1 fuel costs and variable O&M and nox costs and added to that
2 a capacity adder similar to what was proposed by Governor
3 Gray Davis, Governors Locke and Kitzaufer in their letter to
4 FERC earlier this year.
5 Our calculated capacity adder was based on a
6 number that was actually about the same as what our capacity
7 adder was in the year 1998 when power prices were about
8 three cents a kilowatt hour, and it's actually lower than
9 what we make in other regions of the company with a
10 similarly-sized portfolio.
11 Both of those calculations resulted in almost
12 identical refund amounts. Those refund amounts that we
13 proposed, and let me qualify this by saying that this was
14 only in the context of a comprehensive global solution where
15 we solve all the other issues, such as the litigation
16 issues, the credit issues, that sort of thing.
17 Those would result in a refund amount of slightly
18 under $50 million from Reliant. And you will have attached
19 to my affidavit this afternoon, the actual settlement
20 proposal which we presented to the Judge earlier this week.
21 As a result of these calculations, we were
22 essentially offering to refund, as part of a comprehensive
23 global settlement, approximately one-third of the operating
24 margin that we actually achieved over the relevant refund
25 period October through May for the PX and ISO transactions.

U. S. Department of Ju tice
U. S. Attorney's Office
Southern District of Texas
News Release

Michael T. Shelby • U. S. Attorney

FOR IMMEDIATE RELEASE:

December 4, 2002

Kesha Handy
P. O. Box 61129 Houston, TX 77208
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FORMER EL PASO VP INDICTED FOR REPORTING BOGUS TRADES TO MANIPULATE PRICE OF NATURAL GAS MARKET
Contact: John R. Lewis, Assistant U.S. Attorney
Phone: 713/567-9732

(HOUSTON) United States Attorney Michael Shelby, a member of the President's Corporate Fraud Task Force, announced today the unsealing of a two count indictment charging **Todd Geiger**, 38, a natural gas trader and former Vice President of El Paso Corporation ("El Paso"), with knowingly causing the transmission of a false trade report used to calculate the "index" price of natural gas. A warrant ordering Geiger's arrest issued on Monday, December 2, 2002 following the return of the indictment by a federal grand jury in Houston. Geiger, who was arrested last night as he arrived at Bush Intercontinental Airport on a flight from Detroit, Michigan, is expected to appear before United States Magistrate Judge Frances Stacy today.

"On July 9th of this year, The President called for a new ethic of personal responsibility in America's business community. Our mission is to expose through investigation and punish through prosecution those whose criminal conduct threatens to erode confidence in the integrity of U. S. markets. Today's indictment is another step toward establishing that new ethic and accomplishing that mission," said Shelby.

The federal investigation prompting the indictment was conducted by United States Postal Inspectors and the Federal Bureau of Investigation, both member agencies of the Corporate Fraud Task Force. Irregularities were discovered during a review of El Paso's natural gas trades required by the Federal Energy Regulatory Commission earlier this year. El Paso is a publicly-traded corporation headquartered in Houston, Texas, and a provider of natural gas services.

The indictment alleges that on November 30, 2001 Geiger, then an El Paso Vice President responsible for trading natural gas through El Paso's "Canada desk", caused the transmission of a report to Inside FERC Gas Market Report ("Inside FERC"), a trade

industry newsletter, that included volume and price data for forty-eight trades of natural gas by El Paso's Merchant Energy Group knowing that none of the forty-eight trades actually occurred.

Inside FERC uses information provided by traders during monthly surveys -- including the price and volume of fixed price natural gas trades during a period of time at the end of each month, called "bid week" – to calculate index prices. On the first day of each month, Inside FERC publishes the results of their calculations. Natural gas traders make their physical trades at fixed or "indexed" prices. Movement in index prices often affects the size of the profits that traders are able to generate. Electric utilities purchase billions of dollars of natural gas at prices that often are tied to the index priced published in industry publications including "Inside FERC." Consequently, false information reported to Inside FERC and used in the calculation process has the effect of pushing index prices up or down, and potentially costing consumers of natural gas and electricity throughout the country great sums of money.

Geiger is alleged to have fabricated the list of 48 trades and caused El Paso to report the trades to "Inside FERC" for use in calculating a December 2001 index price. Geiger is also alleged to have discussed the fictitious trades with an editor of the "Inside FERC" as if the trades had actually occurred. If convicted, Geiger faces up to 5 years in prison and a fine of $500,000 on the false reporting count, and up to 5 years in prison and a fine of $250,000 on the wire fraud count.

An indictment is a formal accusation of criminal conduct, not evidence. The defendant is presumed innocent unless and until convicted through due process of law.

021204-geiger

United States Courts
Southern District of Texas
FILED
DEC - 2 2002
Michael N. Milby, Clerk of Court

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF TEXAS

HOUSTON DIVISION

UNITED STATES OF AMERICA	§	
	§	
v.	§	CRIMINAL NO. CR H-02-712
	§	
TODD GEIGER,	§	False Reporting; 7 U.S.C. § 13(a)(2)
	§	Wire Fraud; 18 U.S.C. § 1343
Defendant	§	

INDICTMENT

THE GRAND JURY CHARGES:

COUNT ONE
(False Reporting -- 7 U.S.C. § 13(a)(2))

A. Introduction.

At all times material to this indictment:

1. Natural gas was a commodity that traveled in interstate commerce through a vast network of pipelines that spanned Canada, the United States and Mexico.

2. El Paso Corporation ("El Paso") was a publicly traded Delaware corporation with its headquarters in Houston, Texas. El Paso described itself as North America's leading provider of natural gas services. El Paso was organized along four separate business units, one of which, the Merchant Energy Group, traded natural gas.

3. Defendant **TODD GEIGER** was employed by El Paso's Merchant Energy Group in Houston, Texas, as a natural gas trader. GEIGER, an El Paso Vice President, was responsible for trading natural gas through El Paso's "Canada desk".

4. Natural gas traders such as **GEIGER** were in the business of buying and reselling natural gas for a profit. Traders could enter into transactions calling for the physical delivery of natural gas. Such transactions were called "physical" trades. Physical trades occurred at fixed prices or at "index" prices. Movements in index prices often affected the size of the profits that traders such as **GEIGER** were able to generate.

5. Electric utilities often purchased natural gas at prices tied to index prices. In addition, the prices of natural gas futures contracts were often based on index prices.

6. Certain index prices were published by an industry newsletter, *Inside FERC Gas Market Report* (*"Inside FERC"*), on the first day of each month. *Inside FERC* calculated those index prices by using information it received from traders during monthly surveys. That information included the price and volume of fixed price, physical natural gas trades during a period of time at the end of each month called "bid week".

7. Traders who reported false information to *Inside FERC*, if not detected, pushed index prices up and down, and potentially cost consumers of natural gas and electricity throughout the country great sums of money.

B. <u>False Reporting</u>.

On or about November 30, 2001, in the Houston Division of the Southern District of Texas, defendant,

TODD GEIGER,

did knowingly deliver and cause to be delivered for transmission through interstate commerce by telephone and other means of communication false and misleading and knowingly inaccurate reports concerning market information that affected and tended to affect the price of natural gas, a

commodity in interstate commerce, that is, defendant GEIGER caused El Paso to send an email from Houston, Texas, to *Inside FERC*, in Washington, D.C., that included volume and price data for forty-eight trades of natural gas by El Paso's Merchant Energy Group when GEIGER knew that none of the forty-eight trades actually occurred.

In violation of Title 7, United States Code, Section 13(a)(2).

COUNT TWO
(Wire Fraud – 18 U.S.C. § 1343)

A. Introduction.

The allegations of Section A of Count One are repeated and realleged as if fully set forth herein.

B. The Scheme to Defraud.

In or about November, 2001, in the Houston Division of the Southern District of Texas, and elsewhere, the defendant,

TODD GEIGER,

did knowingly devise and intend to devise a scheme and artifice to defraud and for obtaining money and property by means of material false and fraudulent pretenses, representations and promises.

C. The Manner and Means of the Scheme.

1. It was a part of said scheme that defendant GEIGER would and did fabricate a list of forty-eight fictitious trades of natural gas by El Paso's Merchant Energy Group.

2. It was a further part of said scheme that defendant GEIGER would and did cause El Paso to report the forty-eight fictitious trades to *Inside FERC* for use in calculating a December, 2001, index price.

3. It was a further part of said scheme that defendant GEIGER would and did discuss the forty-eight trades over the telephone with an editor of *Inside FERC*.

D. The Execution of the Scheme.

On or about November 30, 2001, for the purpose of executing the aforementioned scheme to defraud and intending to do so, the defendant did transmit and cause to be transmitted in interstate and foreign commerce writings, signals and sounds, that is, the defendant, in Houston, Texas, spoke over the telephone with an editor of *Inside FERC* in Washington, D.C.

In violation of Title 18, United States Code, Section 1343.

A TRUE BILL:

FOREPERSON OF THE GRAND JURY

MICHAEL T. SHELBY
UNITED STATES ATTORNEY

By:
John R. Lewis
Assistant United States Attorney

U. S. Department of Justice
U. S. Attorney's Office
Southern District of Texas
News Release

Michael T. Shelby • U. S. Attorney

FOR IMMEDIATE RELEASE:

January 27, 2003

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FORMER DYNEGY SENIOR TRADER INDICTED FOR REPORTING BOGUS TRADES TO INSIDE FERC

Contact: John Braddock or Eric Reed, Assistant U.S. Attorneys
Phone: 713/567-9728 713/567-9725

(HOUSTON) United States Attorney Michael Shelby, a member of the President's Corporate Fraud Task Force, announced today the unsealing of a seven- count indictment charging **Michelle Marie Valencia**, 32, a former senior natural gas trader with Dynegy Marketing and Trade, with three counts of knowingly causing the transmission of false trade reports used to calculate the "index" price of natural gas and four counts of wire fraud. Dynegy Marketing and Trade is a general partnership indirectly owned by Dynegy, Inc., which conducts its trade operations at Dynegy, Inc's. headquarters in Houston, Texas. A warrant ordering Valencia's arrest issued on Wednesday, January 22, 2003, following the return of the indictment by a federal grand jury in Houston.

Valencia, who was arrested this morning at her home on Cedarbreak Drive in Houston by Special Agents of the Federal Bureau of Investigation, is expected to appear today before United States Magistrate Judge Calvin Botley.

"This indictment cuts to the heart of the American system of business. Investors have a right to know the truth about market conditions. We will hold accountable anyone who intentionally deceives the investing public, " said Shelby.

The indictment alleges that on three separate occasions in November 2000, January 2001 and February 2001, Valencia, responsible for trading natural gas through Dynegy's "West desk," caused the transmission of a report which include volume and price data for natural gas trades by Dynegy to Inside FERC Gas Market Report ("Inside FERC") knowing that the trades had not actually occurred.

Inside FERC is a trade industry newsletter which uses information voluntarily provided by traders during monthly surveys -- including the price and volume of fixed price natural gas

trades during a period of time at the end of each month, called "bid week" – to calculate index prices. On or about the first day of each month, Inside FERC publishes the results of their calculations. Natural gas traders make their physical trades at fixed or "indexed" prices. Movement in index prices often affects the size of the profits that traders are able to g nerate. Electric utilities often purchase natural gas at prices tied to the index price published in industry publications including Inside FERC. Consequently, false information reported to Inside FERC and used in the calculation process has the effect of pushing index prices up or down, and potentially costing consumers of natural gas and electricity throughout the country great sums of money.

Valencia is alleged to have fabricated a total of 43 natural gas Dynegy Market and Trade trades reported to Inside FERC for use in calculating index prices for the month following the reports submission, that is, for December 2000, February 2001 and March 2001. Valencia is accused of sending via email and causing Dynegy to send a report on November 30, 2000 to Inside FERC which included three fictitious trades. Another email from Valencia to Inside FERC on January 31, 2001, is alleged to have reported thirty-three (33) fictitious trades. A third email from Valencia to Inside FERC on February 28, 2001 is alleged to have reported seven (7) more fictitious trades. Each alleged report of false market information affecting or tending to affect the price of natural gas subjects Valencia, if convicted, to a maximum 5 years in prison and a fine of $500,000.

The transmission via email of the three fictitious reports by Valencia and a discussion via telephone between Valencia and an editor of Inside FERC of these fictitious trades are also alleged as separate counts of wire fraud. In all four instances, Valencia is alleged to have transmitted the reports or conducted a telephone conversation in furtherance of her scheme to affect the price of natural gas. If convicted of wire fraud, Valencia faces a maximum punishment of 5 years in prison and a fine of $250,000.

The indictment is a result of a Corporate Fraud Task Force investigation conducted by the Federal Bureau of Investigation and the Division of Enforcement, United States Commodity Futures Trading Commission and is being prosecuted by Assistant United States Attorneys John Braddock and Eric Reed.

An indictment is a formal accusation of criminal conduct, not evidence. The defendant is presumed innocent unless and until convicted through due process of law.

030127-valencia

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF TEXAS

HOUSTON DIVISION

United States Courts
Southern District of Texas
FILED
JAN 2 2 2003
Michael N. Milby, Clerk of Court

UNITED STATES OF AMERICA	§	
	§	
v.	§	CRIMINAL NO. H-03-0024
	§	
MICHELLE M. VALENCIA,	§	False Reporting; 7 U.S.C. § 13(a)(2) Wire Fraud; 18 U.S.C. § 1343
	§	
Defendant.	§	

INDICTMENT

THE GRAND JURY CHARGES:

COUNT ONE
(False Reporting – 7 U.S.C. § 13(a)(2))

A. Introduction.

At all times material to this indictment:

1. Natural gas was a commodity that traveled in interstate commerce through a vast network of pipelines that spanned Canada, the United States and Mexico.

2. Dynegy, Inc. ("Dynegy") was a publicly traded Illinois corporation with its headquarters at 1000 Louisiana Street in Houston, Texas. Dynegy Marketing and Trade was a natural gas marketer and maintained a large natural gas trading operation on a single floor that traded natural gas from its offices also at 1000 Louisiana Street in Houston, Texas. Dynegy Marketing and Trade was a Colorado general partnership, the partners of which were DMT Holdings, L.P. and Dynegy GP, Inc., both of which are indirectly owned by Dynegy.

3. Defendant MICHELLE M. VALENCIA was employed by Dynegy Marketing

and Trade in Houston, Texas, as a natural gas trader on Dynegy's "West desk".

4. Natural gas traders such as VALENCIA were in the business of buying and selling natural gas for a profit. Traders could enter into transactions calling for the physical delivery of natural gas. Such transactions were called "physical" trades. Physical trades occurred at fixed prices or at "index" prices. Movements in index prices often affected the size of the profits that traders such as VALENCIA were able to generate.

5. Electric utilities often purchased natural gas at prices tied to index prices. In addition, the prices of natural gas contracts were often based on index prices.

6. Certain index prices were published by an industry newsletter, *Inside FERC Gas Market Report* ("*Inside FERC*"), on the first day of each month. *Inside FERC* calculated those index prices by using information it received from traders during monthly surveys. That information included the price and volume of fixed price, physical natural gas trades during a period of time at the end of each month called "bid week".

7. Traders who reported false information to *Inside FERC* tended to affect the price of natural gas by pushing *Inside FERC's* index prices up or down which potentially cost consumers of electricity and natural gas throughout the country great sums of money.

B. False Reporting.

On or about November 30, 2000, in the Houston Division of the Southern District of Texas,

MICHELLE M. VALENCIA

defendant herein, did knowingly deliver and cause to be delivered for transmission through interstate commerce by telephone and other means of communication false and misleading and knowingly

inaccurate reports concerning market information that affected and tended to affect the price of natural gas, a commodity in interstate commerce, that is, defendant VALENCIA sent and caused Dynegy Marketing and Trade to send an email from Houston, Texas, to *Inside FERC*, in Washington, D.C., that included volume and price data for three trades of natural gas by Dynegy Marketing and Trade when VALENCIA knew that none of those reported three trades actually occurred.

In violation of Title 7, United States Code, Section 13(a)(2).

COUNT TWO
(False Reporting – 7 U.S.C. § 13(a)(2))

A. Introduction.

The allegations of Section A of Count One are repeated and realleged as if fully set forth herein.

B. False Reporting.

On or about January 31, 2001, in the Houston Division of the Southern District of Texas,

MICHELLE M. VALENCIA

defendant herein, did knowingly deliver and cause to be delivered for transmission through interstate commerce by telephone and other means of communication false and misleading and knowingly inaccurate reports concerning market information that affected and tended to affect the price of natural gas, a commodity in interstate commerce, that is, defendant VALENCIA sent and caused Dynegy Marketing and Trade to send an email from Houston, Texas, to *Inside FERC*, in Washington, D.C., that included volume and price data for thirty-three trades of natural gas by Dynegy Marketing and Trade when VALENCIA knew that none of these reported thirty-three trades

actually occurred.

In violation of Title 7, United States Code, Section 13(a)(2).

COUNT THREE
(False Reporting -- 7 U.S.C. § 13(a)(2))

A. Introduction.

The allegations of Section A of Count One are repeated and realleged as if fully set forth herein.

B. False Reporting.

On or about February 28, 2001, in the Houston Division of the Southern District of Texas,

MICHELLE M. VALENCIA

defendant herein, did knowingly deliver and cause to be delivered for transmission through interstate commerce by telephone and other means of communication false and misleading and knowingly inaccurate reports concerning market information that affected and tended to affect the price of natural gas, a commodity in interstate commerce, that is, defendant VALENCIA sent and caused Dynegy Marketing and Trade to send an email from Houston, Texas, to *Inside FERC*, in Washington, D.C., that included volume and price data for seven trades of natural gas by Dynegy Marketing and Trade when VALENCIA knew that none of these seven reported trades actually occurred.

In violation of Title 7, United States Code, Section 13(a)(2).

COUNT FOUR
(Wire Fraud – 18 U.S.C. § 1343)

A. Introduction.

The allegations of Section A of Count One are repeated and realleged as if fully set forth herein.

B. The Scheme to Defraud.

From on or about November 30, 2000 through on or about February 28, 2001, in the Houston Division of the Southern District of Texas, and elsewhere,

MICHELLE M. VALENCIA

defendant herein, aided and abetted by others known and unknown to the grand jury, did knowingly devise and intend to devise a scheme and artifice to defraud and for obtaining money and property by means of material false and fraudulent pretenses, representations and promises.

C. The Manner and Means of the Scheme.

1. It was a part of said scheme that defendant VALENCIA would and did fabricate a list of fictitious gas trades of natural gas by Dynegy Marketing and Trade.

2. It was a further part of said scheme that defendant VALENCIA would and did report and cause Dynegy Marketing and Trade to report fictitious gas trades to *Inside FERC* for use in calculating an index price.

3. It was a further part of said scheme that defendant VALENCIA would and did discuss fictitious gas trades over the telephone with an editor of *Inside FERC*.

D. The Execution of the Scheme.

On or about November 30, 2000, for the purpose of executing the aforementioned scheme to defraud and intending to do so, the defendant did transmit and cause to be transmitted in

interstate and foreign commerce writings, signals and sounds, that is, the defendant, in Houston, Texas, sent and caused to be sent an e-mail to *Inside FERC* in Washington, D.C. which reported fictitious gas trades by Dynegy Marketing and Trade.

In violation of Title 18, United States Code, Sections 1343 and 2.

COUNT FIVE
(Wire Fraud – 18 U.S.C. § 1343)

A. Introduction.

The allegations of Section A of Count One and Sections B and C of Count Four are repeated and realleged as if fully set forth herein.

B. The Execution of the Scheme.

On or about January 31, 2001, for the purpose of executing the aforementioned scheme to defraud and intending to do so, the defendant, **MICHELLE M. VALENCIA**, did transmit and cause to be transmitted in interstate and foreign commerce writings, signals and sounds, that is, the defendant, in Houston, Texas, sent and caused to be sent an e-mail to *Inside FERC* in Washington, D.C. which reported fictitious gas trades by Dynegy Marketing and Trade.

In violation of Title 18, United States Code, Sections 1343 and 2.

COUNT SIX
(Wire Fraud – 18 U.S.C. § 1343)

A. Introduction.

The allegations of Section A of Count One and Sections B and C of Count Four are repeated and realleged as if fully set forth herein.

B. The Execution of the Scheme.

On or about February 28, 2001, for the purpose of executing the aforementioned scheme to defraud and intending to do so, the defendant, MICHELLE M. VALENCIA, did transmit and cause to be transmitted in interstate and foreign commerce writings, signals and sounds, that is, the defendant, in Houston, Texas, sent and caused to be sent an e-mail to *Inside FERC* in Washington, D.C. which reported fictitious gas trades by Dynegy Marketing and Trade.

In violation of Title 18, United States Code, Sections 1343 and 2.

COUNT SEVEN
(Wire Fraud – 18 U.S.C. § 1343)

A. Introduction.

The allegations of Section A of Count One and Sections B and C of Count Four are repeated and realleged as if fully set forth herein.

B. The Execution of the Scheme.

On or about February 28, 2001, for the purpose of executing the aforementioned scheme to defraud and intending to do so, the defendant, MICHELLE M. VALENCIA, did transmit and cause to be transmitted in interstate and foreign commerce writings, signals and sounds,

that is, the defendant, in Houston, Texas, spoke over the telephone with an editor of *Inside FERC* in Washington, D.C.

In violation of Title 18, United States Code, Sections 1343 and 2.

A TRUE BILL:

FOREPERSON OF THE GRAND JURY

MICHAEL T. SHELBY
UNITED STATES ATTORNEY

By:
John R. Braddock
Assistant United States Attorney

Eric Reed
Assistant United States Attorney

UNITED STATES OF AMERICA
Before the
COMMODITY FUTURES TRADING COMMISSION

RECEIVED C.F.T.C. 2002 DEC 18 P 5:25 OFFICE OF PROCEEDINGS PROCEEDINGS CLERK

In the Matter of:	)	CFTC Docket No.: 03-03
Dynegy Marketing & Trade and West Coast Power LLC	)	**ORDER INSTITUTING PROCEEDINGS PURSUANT TO SECTIONS 6(c) AND 6(d) OF THE COMMODITY EXCHANGE ACT, MAKING FINDINGS AND IMPOSING REMEDIAL SANCTIONS**
Respondents.	)	

I.

The Commodity Futures Trading Commission ("Commission") has reason to believe that Dynegy Marketing & Trade ("Dynegy Marketing & Trade") and West Coast Power LLC ("West Coast Power") have violated Sections 6(c), 6(d), and 9(a)(2) of the Commodity Exchange Act, as amended (the "Act"), 7 U.S.C. §§ 9, 13b, 13(a)(2) and 15 (2000). Further, the Commission has reason to believe that Dynegy Marketing & Trade has violated Commission Regulations 1.31, 1.35 and 1.40, 17 C.F.R. §§ 1.31, 1.35 and 1.40 (2002). Therefore, the Commission deems it appropriate and in the public interest that public administrative proceedings be, and hereby are, instituted to determine whether Dynegy Marketing & Trade and West Coast Power (collectively, "Respondents") engaged in the violations set forth herein, and to determine whether any order should be issued imposing remedial sanctions.

II.

In anticipation of the institution of an administrative proceeding, the Respondents have submitted an Offer of Settlement (the "Offer"), which the Commission has determined to accept. Without admitting or denying the findings of fact herein, the Respondents consent to the entry of this Order in full and final settlement of any alleged violations of the above referenced laws or regulations and acknowledge service of this Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions ("Order"). Respondents consent to the use by the Commission of the findings herein in the proceeding brought by the Commission and in any other proceeding brought by the Commission or to which the Commission is a party.[1]

[1] Respondents do not consent to the use of their Offer or the findings in this Order as the sole basis for any other proceeding brought by the Commission, other than a proceeding brought to enforce the terms of this Order. Respondents do not consent to the use of the Offer or the findings in this Order by any other person or entity in this or any other proceeding. The findings made in this Order are not binding on any other person or entity, including, but not limited to, any person or entity named as a defendant or respondent in any other proceeding.

III.

The Commission finds the following:

A. SUMMARY

From at least January 2000 through June 2002 (the "Relevant Period"), Respondents reported false natural gas trading information, including price and volume information, to certain reporting firms. Price and volume information is used by the reporting firms in calculating published surveys or indexes ("indexes") of natural gas prices for various hubs throughout the United States. Dynegy Marketing & Trade knowingly submitted the false information to the reporting firms in an attempt to skew those indexes to Dynegy Marketing & Trade's financial benefit. Natural gas futures traders refer to the published indexes for price discovery and for assessing price risks.

In an effort to ensure that its reported information would be used by the reporting firms, Dynegy Marketing & Trade caused Respondent West Coast Power to submit information misrepresenting that West Coast Power was a counterparty to the fictitious trades. In addition, Dynegy Marketing & Trade did not maintain required records concerning the information which it provided to the reporting firms or the true source of the information relayed to those firms as required by Commission Regulations. As a result of their actions, Respondents violated the Act.

Dynegy Marketing & Trade has cooperated in the Commission's investigation of this matter, including, among other things, by conducting an independent internal investigation and by providing the results of that investigation to Commission staff. The Commission has taken that cooperation into consideration in its decision to accept Respondents' Offer.

B. RESPONDENTS

Dynegy Marketing & Trade is a Colorado general partnership, the partners of which are DMT Holdings, L.P. and Dynegy GP Inc. Dynegy Marketing & Trade's headquarters are located at 1000 Louisiana Street, Suite 5800, Houston, Texas 77002. Dynegy Marketing & Trade was one of the largest natural gas marketers in the United States and in 2001, Dynegy Marketing & Trade's natural gas sales averaged 8.2 billion cubic feet (Bcf) per day. Dynegy Marketing & Trade maintained a large natural gas trading operation located on a single floor in its Houston offices that traded natural gas, including futures contracts on the New York Mercantile Exchange ("NYMEX"). Dynegy Marketing & Trade is a non-clearing member of the NYMEX. Dynegy Marketing & Trade has never been registered with the Commission in any capacity.

West Coast Power LLC, is a joint venture that was equally owned by an affiliate of Dynegy Marketing & Trade and another energy company. As part of the joint venture, Dynegy Marketing & Trade, among other things, handled all the administrative services and all commodity related concerns. To accomplish these services, Dynegy Marketing & Trade utilized

its own personnel who billed their time to West Coast Power, which itself did not have any employees.

C. FACTS

1. Gas Market Participants' Use of Information from Reporting Firms

During the Relevant Period, reporting firms compiled and published indexes of natural gas prices for natural gas hubs throughout the United States. The indexes were calculated based upon trading information, including volume and price information, collected by the reporting firms from market participants. Natural gas futures traders refer to the prices published by the reporting firms for price discovery and for assessing price risks. For instance, an increase in prices at a natural gas trading hub signals enhanced demand, and futures traders take account of both price movements and apparent demand when conducting their futures trading.

2. Respondents Report False Market Information

From at least January 2000 through June 2002, Respondents provided false reports to the reporting firms and failed to keep copies of required reports. The false reports included altering price and volume of actual trades and reporting nonexistent trades using the phones, faxes, and the Internet. Respondents continued to provide the false trade data because they believed that it benefited their trading positions or derivatives contracts.

Dynegy Marketing & Trade enlisted West Coast Power to give an appearance of propriety to the false data. During the relevant period for example, as relayed in a Dynegy Marketing & Trade e-mail, a Dynegy Marketing & Trade employee established the following procedure:

> Enron owns the index. Unless we start increasing our volumes we are going to continue to take pain on the cash index. I will get you the contact for [the reporting firm]. I would suggest representing yourself as [W]est [C]oast [LLC] .... We can show offsetting transactions on our activity.

Respondents' dual submission of the false information to the reporting firms was designed to elude detection from the reporting firms by showing trades with an actual counterparty.

D. LEGAL DISCUSSION

1. By Reporting False Market Information, Respondents Violated Section 9(a)(2) of the Act

Section 9(a)(2) of the Act makes it a violation for any person "knowingly to deliver or cause to be delivered for transmission through the mails or interstate commerce by telegraph, telephone, wireless, or other means of communication false or misleading or knowingly

inaccurate reports concerning crop or market information or conditions that affect or tend to affect the price of any commodity in interstate commerce[.]"[2] *See, e.g., United Egg Producers v. Bauer Int'l Corp.*, 311 F. Supp. 1375, 1383 (S.D.N.Y. 1970) (concluding that false press releases regarding egg importation "tended to affect the price of eggs in interstate commerce"); *In re Soybean Futures Litig.*, 892 F. Supp. 1025, 1046 (N.D. Ill. 1995) (concluding that false reports can influence prices and constitute part of a manipulation claim).

Respondents violated Section 9(a)(2) of the Act when they knowingly delivered false price and volume information, including fictitious trades, to the reporting firms. As discussed above, price and volume information affect or tend to affect the market price of natural gas, including futures prices as traded on the NYMEX. As such, Respondents violated Section 9(a)(2) of the Act.

2. **By Attempting to Manipulate Prices, Respondents Violated Sections 6(c), 6(d) and 9(a)(2) of the Act**

Sections 6(c) and 6(d) of the Act together authorize the Commission to serve a complaint and provide for the imposition of, among other things, civil monetary penalties and cease and desist orders if the Commission "has reason to believe that any person ... has manipulated or attempted to manipulate the market price of any commodity, in interstate commerce, or for future delivery on or subject to the rules of any registered entity ... or otherwise is violating or has violated any of the provisions of [the] Act." Section 9(a)(2) provides that it is unlawful for "[a]ny person to manipulate or attempt to manipulate the price of any commodity in interstate commerce, or for future delivery on or subject to the rules of any registered entity, or to corner or attempt to corner any such commodity."

The following elements generally are required to show an attempted manipulation: (1) an intent to affect the market price; and (2) some overt act in furtherance of that intent. *See In re Abrams*, [1994-1996 Transfer Binder] Comm. Fut. L. Rep. (CCH) ¶ 26,479 at 43,136 (CFTC July 31, 1995). *See also In re Hohenberg Bros. Co.*, [1975-1977 Transfer Binder] Comm. Fut. L. Rep. (CCH) ¶ 20,271 at 21,477 (CFTC Feb. 18, 1977). To prove the intent element of manipulation or attempted manipulation, it must be shown that Dynegy Marketing & Trade "acted (or failed to act) with the purpose or conscious object of causing or effecting a price or price trend in the market that did not reflect the legitimate forces of supply and demand." *In re Indiana Farm Bureau Cooperative Association*, [1982-1984 Transfer Binder] Comm. Fut. L. Rep. (CCH) ¶ 21,796 at 27,281 (CFTC Dec. 17, 1982). "[I]ntent is the essence of manipulation." *Id.* at 27,282.

Respondents specifically intended to report false or misleading or knowingly inaccurate market information concerning, among other things, trade prices and volumes, to manipulate the

[2] Under Section 2(a)(1)(B) of the Act and Section 1.2 of the Commission Regulations, the act, omission, or failure of any official, agent, or other person acting for any individual, association, partnership, corporation, or trust within the scope of his employment or office shall be deemed the act, omission, or failure of such individual, association, partnership, corporation, or trust. "[I]t does not matter if the principal participated in or even knew about the agent's acts; he is strictly liable for them." *Stotler and Co. v. CFTC*, 855 F.2d 1288, 1292 (7th Cir. 1988) (citing *Cange v. Stotler*, 826 F. 2d 581, 589 (7th Cir. 1987); *Rosenthal & Co. v. CFTC*, 802 F.2d 963, 966-67 (7th Cir. 1986)).

price of natural gas in interstate commerce. Respondents' provision of the false reports and their collusion, which was designed to thwart the reporting firms' detection of the false information, constitutes overt acts in furtherance of the attempted manipulation. By so doing, Respondents' conduct constitutes an attempted manipulation under Section 9(a)(2) of the Act, which, if successful, could have affected prices of NYMEX natural gas futures contracts.

3. Dynegy Marketing & Trade's Failure to Retain Trading Records Violated Commission Regulations 1.31, 1.35 and 1.40

Dynegy Marketing & Trade, a non-clearing NYMEX member, failed to keep records required of members of a contract market, including records of what Dynegy Marketing & Trade relayed to the reporting firms. Together, Commission Regulations 1.31, 1.35 and 1.40 required Dynegy Marketing & Trade to maintain and to produce upon request to the Commission certain records. Commission Regulations 1.31 and 1.35 required Dynegy Marketing & Trade to maintain and to produce "full, complete, and systematic records, together with all pertinent data and memoranda, of all transactions relating to its business of dealing in commodity futures, commodity options, and cash commodities." In addition, Regulation 1.40 further requires that: "[E]ach member of a contract market shall, upon request, furnish or cause to be furnished to the Commission a true copy of any letter, circular, telegram, or report published or given general circulation by such ... member which concerns crop or market information or conditions that affect or tend to affect the price of any commodity, and the true source of or authority for the information contained therein."

By failing to keep the required records, including records of what Dynegy Marketing & Trade relayed to the reporting firms, Dynegy Marketing & Trade violated Commission Regulations 1.31, 1.35 and 1.40. As discussed above, price and volume information affect or tend to affect the market price of natural gas, including futures prices as traded on the NYMEX.

IV.

FINDINGS OF VIOLATIONS

Based on the foregoing, the Commission finds that Respondents violated Sections 6(c), 6(d), and 9(a)(2) of the Act, 7 U.S.C. §§ 9, 13b, 13(a)(2) and 15 (2000), and that Dynegy Marketing & Trade violated Commission Regulations 1.31, 1.35 and 1.40, 17 C.F.R. §§ 1.31, 1.35 and 1.40 (2002).

V.

OFFER OF SETTLEMENT

Respondents have submitted an Offer of Settlement in which, without admitting or denying the allegations or the findings herein, it: acknowledges service of the Order; admits jurisdiction of the Commission with respect to the matters set forth in this Order and for any action or proceeding brought or authorized by the Commission based upon violations or for

enforcement of the Order; waives service and filing of a complaint and notice of hearing, a hearing, all post-hearing procedures, judicial review by any court, any objection to the staff's participation in the Commission's consideration of the Offer, any claim of double jeopardy based on the institution of this proceeding or the entry of any order imposing a civil monetary penalty or other relief, and all claims which it may possess under the Equal Access to Justice Act, 5 U.S.C. § 504 (1994) and 28 U.S.C. § 2412 (1996), as amended by Pub. L. No. 104-21, §§ 231-32, 110 Stat. 847, and Part 148 of the Commission's Regulations, 17 C.F.R. §§ 148.1 *et seq.* (2002), relating to, or arising from, this action; stipulates that the record basis on which this Order is entered consists solely of this Order, including the findings in this Order; and consents to the Commission's issuance of this Order. Pursuant to the Offer of Settlement herein, Dynegy Marketing & Trade and West Coast Power agree to entry of an Order, in which the Commission makes findings, including findings that Dynegy Marketing & Trade and West Coast Power violated Sections 6(c), 6(d), and 9(a)(2) of the Act and that Dynegy Marketing & Trade has violated Commission Regulations 1.31, 1.35 and 1.40 and orders that Respondents cease and desist from violating the provisions of the Act and Commission Regulations they have been found to have violated, and agree to pay a civil monetary penalty of five million dollars ($5,000,000) within five (5) business days of the entry of this Order, and that they comply with their undertakings as set forth in their Offer and this Order.

VI.

ORDER

Accordingly, IT IS HEREBY ORDERED THAT:

1. Dynegy Marketing & Trade and West Coast Power shall cease and desist from violating Sections 6(c), 6(d), and 9(a)(2) of the Act and Dynegy Marketing & Trade shall cease and desist from violating Commission Regulations 1.31, 1.35 and 1.40;

2. Respondents, jointly and severally, shall pay a civil monetary penalty in the amount of five million dollars ($5,000,000) within 5 (five) business days of the date of the entry of this Order, and make such payment by electronic funds transfer to the account of the Commission at the United States Treasury or by certified check or bank cashier's check made payable to the Commodity Futures Trading Commission and addressed to Dennese Posey, or her successor, Division of Enforcement, Commodity Futures Trading Commission, 1155 21st Street, N.W., Washington, D.C. 20581, under cover of a letter that identifies the Respondents and the name and docket number of this proceeding. Copies of the cover letter and the form of payment shall be simultaneously transmitted to Gregory G. Mocek, Director, Division of Enforcement, Commodity Futures Trading Commission, 1155 21st Street, N.W., Washington, D.C. 20581, and to Stephen J. Obie, Regional Counsel, Division of Enforcement, Commodity Futures Trading Commission, 140 Broadway, New York, New York 10005. If payment is not made in accordance with the requirements of this paragraph, the Order shall be vacated and the proceedings reinstated;

3. Respondents shall comply with the following undertakings:

A. COOPERATION WITH THE COMMISSION

Respondents shall continue to cooperate fully and expeditiously with the Commission, and its staff, including the Division of Enforcement, in this proceeding and any investigation, civil litigation, or administrative matter related to the subject matter of this proceeding. Respondents agree that this undertaking includes the Respondents in this proceeding and any subsidiaries or affiliates within their control. As part of such cooperation, Respondents agree to comply fully, promptly, and truthfully to any inquiries or requests for information including but not limited to (1) requests for authentication of documents; (2) requests for any documents within Respondents' possession, custody, or control, including inspection and copying of documents; (3) requests for agents and employees of Respondents to testify completely and truthfully to the Division; (4) requests to produce any current (as of the time of the request) officer, director, or employee of Respondents, regardless of the employee's location, for interviews, depositions, or testimony, and to provide testimony or assistance at any trial related to the subject matter of this proceeding; and (5) requests for assistance in locating and contacting any prior (as of the time of the request) officer, director, or employee of Respondents. Respondents also agree that they will not undertake any act which would limit their ability to fully cooperate with the Commission. Respondents designate Kenneth M. Rosenzweig, Esq., of the Mayer Brown Rowe & Maw law firm to receive all requests for information pursuant to this undertaking. Should Respondents seek to change the designated person to receive such requests, notice shall be given to the Division of such intention 14 days before it occurs. Any person designated to receive such request shall be located in the United States.

B. PUBLIC STATEMENTS

By neither admitting nor denying the findings of fact, Respondents agree that neither they nor any of Respondents' agents or employees under their authority and control shall take any action or make any public statement denying, directly or indirectly, any findings or conclusions in the Order or creating, or tending to create, the impression that the Order is without factual or legal basis; provided, however, that nothing in this provision shall affect Respondents' (i) testimonial obligations; or (ii) right to take factual or legal positions in other proceedings to which the Commission is not a party. Respondents will undertake all steps necessary to assure that all of their agents, and employees under their authority and control understand and comply with this agreement.

By the Commission.

Jean A. Webb

Jean A. Webb
Secretary of the Commission

Dated: December 18, 2002

California; Former Dynegy Trader Indicted on Charges of Reporting False Data; U.S. attorney says fired employee fabricated trades from pipelines that were, in a majority of cases, in California.

The Los Angeles Times; Los Angeles, Calif.; Jan 28, 2003;

Abstract:

[Michelle Marie Valencia], who ran Dynegy's gas-trading desk for the Western U.S., pleaded not guilty Monday after being indicted by a Houston grand jury on charges of giving false data on 43 trades to the Inside FERC newsletter. FERC is an acronym for the Federal Energy Regulatory Commission, the agency that regulates the wholesale power industry.

Valencia was one of seven employees fired by Dynegy since Oct. 18 after an internal company review, the Houston-based company said in a separate statement.

CHARGED: Michelle Marie Valencia, with her attorney Chris Flood, pleaded not guilty after being indicted by a Houston grand jury. Valencia ran Dynegy's gas-trading desk for the Western U.S.; PHOTOGRAPHER: Associated Press

Full Text:

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A former top energy trader for Dynegy Inc. was arrested Monday on charges that she reported fictitious natural gas transactions for California and other Western hubs to an industry publication.

The indictment of Michelle Marie Valencia, 32, is the second in a widening investigation into whether energy companies cheated investors and energy ratepayers.

Several energy firms, including Dynegy, have revealed that employees lied to trade publications that assemble indexes of natural gas and electricity prices, which were used by regulators to help set electricity prices during California's electricity crisis and its aftermath.

Valencia, who ran Dynegy's gas-trading desk for the Western U.S., pleaded not guilty Monday after being indicted by a Houston grand jury on charges of giving false data on 43 trades to the Inside FERC newsletter. FERC is an acronym for the Federal Energy Regulatory Commission, the agency that regulates the wholesale power industry.

Valencia reported "fabricated trades from natural gas pipelines that were, in the majority of the cases, in California," said Michael Shelby, U.S. attorney in Houston. "We will hold accountable anyone who intentionally deceives the investing public."

Valencia was charged with three counts of knowingly making false price reports and four counts of wire fraud from November 2000 to March 2001. If convicted on all charges, she could face up to 35 years in prison and fines of as much as $2.5 million.

Federal prosecutors, along with investigators from the U.S. Commodity Futures Trading Commission and the Justice Department, have been looking into allegations of false price reports since the middle of last year. Their efforts are part of a broader inquiry stemming from the California energy crisis in late 2000 and early 2001 and the collapse of Enron Corp., once the largest energy trader.

Shelby's office in early December charged a former El Paso Corp. trader, Todd Geiger, with providing to

a trade publication information about 48 trades that never occurred.

Houston-based Dynegy agreed in December to pay $5 million to settle charges by the Commodity Futures Trading Commission that its traders provided false prices.

Other companies that have acknowledged providing false reports include American Electric Power Co., CMS Energy Corp. and Williams Cos.

Valencia was one of seven employees fired by Dynegy since Oct. 18 after an internal company review, the Houston-based company said in a separate statement.

Dynegy's shares fell 15 cents, or 6.7%, to $2.07 on the New York Stock Exchange.

[Illustration]
Caption: PHOTO: CHARGED: Michelle Marie Valencia, with her attorney Chris Flood, pleaded not guilty after being indicted by a Houston grand jury. Valencia ran Dynegy's gas-trading desk for the Western U.S.; PHOTOGRAPHER: Associated Press

Credit: From Times Staff and Wire Reports

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SUMMARY OF RELIANT PROFIT/LOSS DATA
December 2000

Date:	Hedged Gas Price	Hedged Gas Volume	So-Cal Gas Price	So-Cal Gas Volume	WACOG
1-Dec-00	$9.67	160,000	$20.00	0	$9.67
2-Dec-00	$10.13	170,000	$20.00	0	$10.13
3-Dec-00	$10.13	170,000	$18.50	0	$10.13
4-Dec-00	$10.13	170,000	$18.50	63,314	$12.40
5-Dec-00	$10.13	170,000	$22.00	0	$10.13
6-Dec-00	$11.07	180,000	$30.00	2,246	$11.30
7-Dec-00	$11.07	180,000	$40.00	0	$11.07
8-Dec-00	$11.07	180,000	$40.00	0	$11.07
9-Dec-00	$11.07	180,000	$60.00	0	$11.07
10-Dec-00	$11.07	180,000	$55.00	0	$11.07
11-Dec-00	$11.07	180,000	$55.66	88,461	$25.76
12-Dec-00	$11.07	180,000	$59.42	0	$11.07
13-Dec-00	$11.07	180,000	$35.00	0	$11.07
14-Dec-00	$11.42	180,000	$20.26	82,458	$14.20
15-Dec-00	$11.42	180,000	$19.03	61,196	$13.35
16-Dec-00	$11.42	180,000	$18.00	85,132	$13.53
17-Dec-00	$11.42	180,000	$17.06	0	$11.42
18-Dec-00	$11.42	180,000	$20.39	124,111	$15.08
19-Dec-00	$11.42	180,000	$20.39	0	$11.42
20-Dec-00	$4.08	85,000	$22.00	244,341	$17.38
21-Dec-00	$4.08	85,000	$22.00	258,071	$17.56
22-Dec-00	$4.08	85,000	$20.00	258,368	$16.06
23-Dec-00	$4.08	85,000	$22.00	263,367	$17.63
24-Dec-00	$4.08	85,000	$18.03	246,693	$14.45
25-Dec-00	$4.08	85,000	$22.00	227,025	$17.12
26-Dec-00	$4.08	85,000	$18.03	277,738	$14.76
27-Dec-00	$4.08	85,000	$18.03	270,283	$14.69
28-Dec-00	$4.08	85,000	$18.78	265,950	$15.22
29-Dec-00	$4.08	85,000	$18.78	295,034	$15.49
30-Dec-00	$4.08	85,000	$18.78	197,988	$14.37
31-Dec-00	$4.08	85,000	$14.33	212,421	$11.40
Total=>		**4,380,000**		**3,524,197**	
Average=>	**$8.27**		**$26.51**		**$13.58**

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
5/1/2000	2.7875	0.3948	0.1082	0.4651	3.7556
5/2/2000	2.8900	0.3948	0.1121	0.4651	3.8621
5/3/2000	2.8900	0.3948	0.1121	0.4651	3.8621
5/4/2000	2.8888	0.3948	0.1121	0.4651	3.8608
5/5/2000	2.8263	0.3948	0.1097	0.4651	3.7958
5/6/2000	2.7875	0 3948	0.1082	0.4651	3.7556
5/7/2000	2.7875	0.3948	0.1082	0.4651	3.7556
5/8/2000	2.7875	0.3948	0.1082	0.4651	3.7556
5/9/2000	2.8375	0.3948	0.1101	0.4651	3.8075
5/10/2000	2.9338	0.3948	0.1138	0.4651	3.9075
5/11/2000	2.8988	0.3948	0.1125	0.4651	3.8711
5/12/2000	3.0263	0.3948	0.1174	0.4651	4.0036
5/13/2000	2.9750	0.3948	0.1154	0.4651	3.9504
5/14/2000	2.9750	0.3948	0.1154	0.4651	3.9504
5/15/2000	2.9750	0.3948	0.1154	0.4651	3.9504
5/16/2000	3.0213	0.3948	0.1172	0.4651	3.9984
5/17/2000	3.1275	0.3948	0.1213	0.4651	4.1088
5/18/2000	3.1800	0.3948	0.1234	0.4651	4.1633
5/19/2000	3.4663	0.3948	0.1345	0.4651	4.4607
5/20/2000	3.4475	0.3948	0.1338	0.4651	4.4412
5/21/2000	3.4475	0.3948	0.1338	0.4651	4.4412
5/22/2000	3.4475	0.3948	0.1338	0.4651	4.4412
5/23/2000	3.8900	0.3948	0.1509	0.4651	4.9009
5/24/2000	3.7000	0.3948	0.1436	0.4651	4.7035
5/25/2000	3.7113	0.3948	0.1440	0.4651	4.7152
5/26/2000	3.9500	0.3948	0.1533	0.4651	4.9632
5/27/2000	3.8963	0.3948	0.1512	0.4651	4.9073
5/28/2000	3.8963	0.3948	0.1512	0.4651	4.9073
5/29/2000	3.8963	0.3948	0.1512	0.4651	4.9073
5/30/2000	3.8963	0.3948	0.1512	0.4651	4.9073
5/31/2000	4.1450	0.3948	0.1608	0.4651	5.1657

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
6/1/2000	4.3075	0.3948	0.1671	0.4048	5.2742
6/2/2000	4.2150	0.3948	0.1635	0.4048	5.1781
6/3/2000	3.9350	0.3948	0.1527	0.4048	4.8873
6/4/2000	3.9350	0.3948	0.1527	0.4048	4.8873
6/5/2000	3.9350	0.3948	0.1527	0.4048	4.8873
6/6/2000	4.0125	0.3948	0.1557	0.4048	4.9678
6/7/2000	4.2525	0.3948	0.1650	0.4048	5.2171
6/8/2000	3.9888	0.3948	0.1548	0.4048	4.9431
6/9/2000	3.7575	0.3948	0.1458	0.4048	4.7029
6/10/2000	3.9300	0.3948	0.1525	0.4048	4.8821
6/11/2000	3.9300	0.3948	0.1525	0.4048	4.8821
6/12/2000	3.9300	0.3948	0.1525	0.4048	4.8821
6/13/2000	4.0538	0.3948	0.1573	0.4048	5.0106
6/14/2000	4.1175	0.3948	0.1598	0.4048	5.0769
6/15/2000	3.9813	0.3948	0.1545	0.4048	4.9353
6/16/2000	4.1213	0.3948	0.1599	0.4048	5.0808
6/17/2000	4.0800	0.3948	0.1583	0.4048	5.0379
6/18/2000	4.0800	0.3948	0.1583	0.4048	5.0379
6/19/2000	4.0800	0.3948	0.1583	0.4048	5.0379
6/20/2000	4.0988	0.3948	0.1590	0.4048	5.0574
6/21/2000	3.8150	0.3948	0.1480	0.4048	4.7626
6/22/2000	3.9500	0.3948	0.1533	0.4048	4.9029
6/23/2000	4.2400	0.3948	0.1645	0.4048	5.2041
6/24/2000	4.0850	0.3948	0.1585	0.4048	5.0431
6/25/2000	4.0850	0.3948	0.1585	0.4048	5.0431
6/26/2000	4.0850	0.3948	0.1585	0.4048	5.0431
6/27/2000	4.1600	0.3948	0.1614	0.4048	5.1210
6/28/2000	4.3575	0.3948	0.1691	0.4048	5.3262
6/29/2000	4.3050	0.3948	0.1670	0.4048	5.2716
6/30/2000	4.0438	0.3948	0.1569	0.4048	5.0003
7/1/2000	4.0725	0.3948	0.1580	0.4192	5.0445

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
7/2/2000	4.0725	0.3948	0.1580	0.4192	5.0445
7/3/2000	4.0725	0.3948	0.1580	0.4192	5.0445
7/4/2000	4.0725	0.3948	0.1580	0.4192	5.0445
7/5/2000	4.0725	0.3948	0.1580	0.4192	5.0445
7/6/2000	4.0613	0.3948	0.1576	0.4192	5.0328
7/7/2000	3 8075	0.3948	0.1477	0.4192	4.7692
7/8/2000	3 5663	0.3948	0.1384	0.4192	4.5186
7/9/2000	3.5663	0.3948	0 1384	0.4192	4.5186
7/10/2000	3.5663	0.3948	0.1384	0.4192	4.5186
7/11/2000	3.9450	0.3948	0.1531	0.4192	4.9120
7/12/2000	3.9900	0.3948	0.1548	0.4192	4.9588
7/13/2000	4.1200	0.3948	0.1599	0.4192	5.0938
7/14/2000	3.8863	0.3948	0.1508	0.4192	4.8510
7/15/2000	3.8050	0.3948	0.1476	0.4192	4.7666
7/16/2000	3.8050	0.3948	0.1476	0.4192	4.7666
7/17/2000	3.8050	0.3948	0.1476	0.4192	4.7666
7/18/2000	3.9250	0.3948	0.1523	0.4192	4.8913
7/19/2000	3 7863	0.3948	0.1469	0.4192	4.7471
7/20/2000	3.8813	0.3948	0.1506	0.4192	4.8458
7/21/2000	3.7538	0.3948	0.1456	0.4192	4.7134
7/22/2000	3.7063	0.3948	0.1438	0.4192	4.6640
7/23/2000	3.7063	0.3948	0.1438	0.4192	4.6640
7/24/2000	3.7063	0.3948	0.1438	0.4192	4.6640
7/25/2000	3.6825	0.3948	0.1429	0.4192	4.6393
7/26/2000	3.5838	0.3948	0.1390	0.4192	4.5368
7/27/2000	3.5788	0.3948	0 1389	0.4192	4.5316
7/28/2000	3.6925	0.3948	0.1433	0.4192	4.6497
7/29/2000	3.7013	0.3948	0.1436	0.4192	4.6588
7/30/2000	3.7013	0.3948	0.1436	0.4192	4.6588
7/31/2000	3.7013	0.3948	0.1436	0.4192	4.6588
8/1/2000	3.6400	0.3948	0.1412	0.4078	4.5838

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
8/2/2000	3.6275	0.3948	0.1407	0.4078	4.5709
8/3/2000	3.8163	0.3948	0.1481	0.4078	4.7669
8/4/2000	3.8075	0.3948	0.1477	0.4078	4.7578
8/5/2000	3.7350	0.3948	0.1449	0.4078	4.6825
8/6/2000	3.7350	0.3948	0.1449	0.4078	4.6825
8/7/2000	3.7350	0.3948	0.1449	0.4078	4.6825
8/8/2000	3.9038	0.3948	0.1515	0.4078	4.8578
8/9/2000	3.9125	0.3948	0.1518	0.4078	4.8669
8/10/2000	3.9388	0.3948	0.1528	0.4078	4.8942
8/11/2000	3.9225	0.3948	0.1522	0.4078	4.8773
8/12/2000	3.8525	0.3948	0.1495	0.4078	4.8046
8/13/2000	3.8525	0.3948	0.1495	0.4078	4.8046
8/14/2000	3.8525	0.3948	0.1495	0.4078	4.8046
8/15/2000	3.9000	0.3948	0.1513	0.4078	4.8539
8/16/2000	3.7963	0.3948	0.1473	0.4078	4.7461
8/17/2000	3.8113	0.3948	0.1479	0.4078	4.7617
8/18/2000	3.8938	0.3948	0.1511	0.4078	4.8474
8/19/2000	3.8113	0.3948	0.1479	0.4078	4.7617
8/20/2000	3.8113	0.3948	0.1479	0.4078	4.7617
8/21/2000	3.8113	0.3948	0.1479	0.4078	4.7617
8/22/2000	4.0450	0.3948	0.1569	0.4078	5.0046
8/23/2000	4.1800	0.3948	0.1622	0.4078	5.1448
8/24/2000	4.1050	0.3948	0.1593	0.4078	5.0669
8/25/2000	3.8325	0.3948	0.1487	0.4078	4.7838
8/26/2000	3.8263	0.3948	0.1485	0.4078	4.7773
8/27/2000	3.8263	0.3948	0.1485	0.4078	4.7773
8/28/2000	3.8263	0.3948	0.1485	0.4078	4.7773
8/29/2000	3.9288	0.3948	0.1524	0.4078	4.8838
8/30/2000	3.9850	0.3948	0.1546	0.4078	4.9422
8/31/2000	4.0563	0.3948	0.1574	0.4078	5.0162
9/1/2000	4.1438	0.3948	0.1608	0.4354	5.1348

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
9/2/2000	4.1213	0.3948	0.1599	0.4354	5.1114
9/3/2000	4.1213	0.3948	0.1599	0.4354	5.1114
9/4/2000	4.1213	0.3948	0.1599	0.4354	5.1114
9/5/2000	4.1213	0.3948	0.1599	0.4354	5.1114
9/6/2000	4.4738	0.3948	0.1736	0.4354	5.4776
9/7/2000	4.7400	0.3948	0.1839	0.4354	5.7541
9/8/2000	4.6888	0.3948	0.1819	0.4354	5.7009
9/9/2000	4.5063	0.3948	0.1748	0.4354	5.5113
9/10/2000	4.5063	0.3948	0.1748	0.4354	5.5113
9/11/2000	4.5063	0.3948	0.1748	0.4354	5.5113
9/12/2000	4.7050	0.3948	0.1826	0.4354	5.7178
9/13/2000	4.7788	0.3948	0.1854	0.4354	5.7944
9/14/2000	4.8475	0.3948	0.1881	0.4354	5.8658
9/15/2000	4 8638	0.3948	0.1887	0.4354	5.8827
9/16/2000	4.8538	0.3948	0.1883	0.4354	5.8723
9/17/2000	4.8538	0.3948	0.1883	0.4354	5.8723
9/18/2000	4.8538	0.3948	0.1883	0.4354	5.8723
9/19/2000	4.6413	0.3948	0.1801	0.4354	5.6516
9/20/2000	4.5513	0.3948	0.1766	0.4354	5.5581
9/21/2000	4.5400	0.3948	0.1762	0.4354	5.5464
9/22/2000	4.4788	0.3948	0.1738	0.4354	5.4828
9/23/2000	4.3688	0.3948	0.1695	0.4354	5.3685
9/24/2000	4.3688	0.3948	0.1695	0.4354	5.3685
9/25/2000	4.3688	0.3948	0.1695	0.4354	5.3685
9/26/2000	4.4288	0.3948	0.1718	0.4354	5.4308
9/27/2000	4.6413	0.3948	0.1801	0.4354	5.6516
9/28/2000	4.7325	0.3948	0.1836	0.4354	5.7464
9/29/2000	4.6900	0.3948	0.1820	0.4354	5.7022
9/30/2000	4.9175	0.3948	0.1908	0.4354	5.9385
10/1/2000	4.9175	0.3948	0.1908	0.4281	5.9312
10/2/2000	4 9175	0.3948	0.1908	0.4281	5.9312

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge ($/MMBtu)	Total Intrastate Transport Charges	Total Cost of Delivered Gas (1) + (2) + (3) + (4)
	(1)	(2)	(3)	(4)	(5)
10/3/2000	5.0900	0.3948	0.1975	0.4281	6.1104
10/4/2000	5.1350	0.3948	0.1992	0.4281	6.1572
10/5/2000	5.0950	0.3948	0.1977	0.4281	6.1156
10/6/2000	4.9450	0.3948	0.1919	0.4281	5.9598
10/7/2000	4.5875	0.3948	0.1780	0.4281	5.5884
10/8/2000	4.5875	0.3948	0.1780	0.4281	5.5884
10/9/2000	4.5875	0.3948	0.1780	0.4281	5.5884
10/10/2000	4 7650	0.3948	0.1849	0.4281	5.7728
10/11/2000	4.7813	0.3948	0.1855	0.4281	5.7897
10/12/2000	4.8350	0.3948	0.1876	0.4281	5.8455
10/13/2000	5.1213	0.3948	0.1987	0.4281	6.1429
10/14/2000	4.9225	0.3948	0.1910	0.4281	5.9364
10/15/2000	4.9225	0.3948	0.1910	0.4281	5.9364
10/16/2000	4.9225	0.3948	0.1910	0.4281	5.9364
10/17/2000	4.9450	0.3948	0.1919	0.4281	5.9598
10/18/2000	4.9900	0.3948	0.1936	0.4281	6.0065
10/19/2000	5.1175	0.3948	0.1986	0.4281	6.1390
10/20/2000	4.8263	0.3948	0.1873	0.4281	5.8364
10/21/2000	4.6100	0.3948	0.1789	0.4281	5.6118
10/22/2000	4.6100	0.3948	0.1789	0.4281	5.6118
10/23/2000	4.6100	0.3948	0.1789	0.4281	5.6118
10/24/2000	4.6550	0.3948	0.1806	0.4281	5.6585
10/25/2000	4.7450	0.3948	0.1841	0.4281	5.7520
10/26/2000	4.5575	0.3948	0.1768	0.4281	5.5573
10/27/2000	4.5088	0.3948	0.1749	0.4281	5.5066
10/28/2000	4.2300	0.3948	0.1641	0.4281	5.2170
10/29/2000	4.2300	0.3948	0.1641	0.4281	5.2170
10/30/2000	4.2300	0.3948	0.1641	0.4281	5.2170
10/31/2000	4.2938	0.3948	0.1666	0.4281	5.2833
11/1/2000	4.1013	0.3948	0.1591	0.4270	5.0822
11/2/2000	4.0550	0.3948	0.1573	0.4270	5.0341

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
11/3/2000	4.1713	0.3948	0.1618	0.4270	5.1549
11/4/2000	4 3263	0.3948	0.1679	0.4270	5.3159
11/5/2000	4.3263	0.3948	0.1679	0.4270	5.3159
11/6/2000	4.3263	0.3948	0.1679	0.4270	5.3159
11/7/2000	4.4775	0.3948	0.1737	0.4270	5.4730
11/8/2000	4.5300	0.3948	0.1758	0.4270	5.5276
11/9/2000	4.8338	0.3948	0.1875	0.4270	5.8431
11/10/2000	5.4738	0.3948	0.2124	0.4270	6.5079
11/11/2000	5.1463	0.3948	0.1997	0.4270	6.1677
11/12/2000	5.1463	0.3948	0.1997	0.4270	6.1677
11/13/2000	5.1463	0.3948	0.1997	0.4270	6.1677
11/14/2000	5.5563	0.3948	0.2156	0.4270	6.5936
11/15/2000	5.8525	0.3948	0.2271	0.4270	6.9014
11/16/2000	5.8550	0.3948	0.2272	0.4270	6.9040
11/17/2000	5.7113	0.3948	0.2216	0.4270	6.7546
11/18/2000	5.6088	0.3948	0.2176	0.4270	6.6482
11/19/2000	5.6088	0.3948	0.2176	0.4270	6.6482
11/20/2000	5.6088	0.3948	0.2176	0.4270	6.6482
11/21/2000	6.4650	0.3948	0.2508	0.4270	7.5376
11/22/2000	6.4225	0.3948	0.2492	0.4270	7.4935
11/23/2000	6.0563	0.3948	0.2350	0.4270	7.1130
11/24/2000	6.0563	0.3948	0.2350	0.4270	7.1130
11/25/2000	6.0563	0.3948	0.2350	0.4270	7.1130
11/26/2000	6.0563	0.3948	0.2350	0.4270	7.1130
11/27/2000	6.0563	0.3948	0.2350	0.4270	7.1130
11/28/2000	6.0338	0.3948	0.2341	0.4270	7.0897
11/29/2000	5.6788	0.3948	0.2203	0.4270	6.7209
11/30/2000	5.7213	0.3948	0.2220	0.4270	6.7650
12/1/2000	6.1925	0.3948	0.2403	0.4954	7.3229
12/2/2000	6.4450	0.3948	0.2501	0.4954	7.5852
12/3/2000	6.4450	0.3948	0.2501	0.4954	7.5852

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge ($/MMBtu)	Total Intrastate Transport Charges	Total Cost of Delivered Gas
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
12/4/2000	6.4450	0.3948	0.2501	0.4954	7.5852
12/5/2000	7.2813	0.3948	0.2825	0.4954	8.4539
12/6/2000	8.0513	0.3948	0.3124	0.4954	9.2538
12/7/2000	9.2325	0.3948	0.3582	0.4954	10.4809
12/8/2000	9.0138	0.3948	0.3497	0.4954	10.2536
12/9/2000	7 9625	0.3948	0.3089	0.4954	9.1616
12/10/2000	7 9625	0.3948	0.3089	0.4954	9.1616
12/11/2000	7.9625	0 3948	0.3089	0.4954	9.1616
12/12/2000	10.4788	0.3948	0.4066	0.4954	11.7755
12/13/2000	8.7250	0.3948	0.3385	0.4954	9.9537
12/14/2000	7.0325	0.3948	0.2729	0.4954	8.1955
12/15/2000	7.0775	0.3948	0.2746	0.4954	8 2422
12/16/2000	7.3200	0.3948	0.2840	0.4954	8.4942
12/17/2000	7.3200	0.3948	0.2840	0.4954	8.4942
12/18/2000	7.3200	0.3948	0.2840	0.4954	8.4942
12/19/2000	9.1975	0.3948	0.3569	0.4954	10.4445
12/20/2000	8.7913	0.3948	0.3411	0.4954	10.0225
12/21/2000	9.5413	0.3948	0.3702	0.4954	10.8016
12/22/2000	10.4463	0.3948	0.4053	0.4954	11.7417
12/23/2000	9.5975	0.3948	0.3724	0.4954	10.8600
12/24/2000	9.5975	0.3948	0.3724	0.4954	10.8600
12/25/2000	9.5975	0.3948	0.3724	0.4954	10.8600
12/26/2000	9.5975	0.3948	0.3724	0.4954	10.8600
12/27/2000	9.4188	0.3948	0.3654	0.4954	10.6743
12/28/2000	9.1888	0.3948	0.3565	0.4954	10.4354
12/29/2000	8.7675	0.3948	0.3402	0.4954	9.9978
12/30/2000	9.6188	0.3948	0.3732	0.4954	10.8821
12/31/2000	9.6188	0.3948	0.3732	0.4954	10.8821
1/1/2001	9.6188	0.3942	0.3338	0.4726	10.8193
1/2/2001	9.6188	0.3942	0.3338	0.4726	10.8193
1/3/2001	8.9100	0.3942	0.3092	0.4726	10.0860

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
1/4/2001	9.0725	0.3942	0.3148	0.4726	10.2541
1/5/2001	8.9563	0.3942	0.3108	0.4726	10.1338
1/6/2001	9.0300	0.3942	0.3133	0.4726	10.2101
1/7/2001	9.0300	0.3942	0.3133	0.4726	10.2101
1/8/2001	9.0300	0.3942	0.3133	0.4726	10.2101
1/9/2001	9.6438	0.3942	0.3346	0.4726	10.8452
1/10/2001	9.1500	0.3942	0.3175	0.4726	10.3343
1/11/2001	9.5375	0.3942	0.3310	0.4726	10.7353
1/12/2001	8.7863	0.3942	0.3049	0.4726	9.9579
1/13/2001	8.6700	0.3942	0.3008	0.4726	9.8377
1/14/2001	8.6700	0.3942	0.3008	0.4726	9.8377
1/15/2001	8.6700	0.3942	0.3008	0.4726	9.8377
1/16/2001	8.6700	0.3942	0.3008	0.4726	9.8377
1/17/2001	8.3125	0.3942	0.2884	0.4726	9.4677
1/18/2001	8.0200	0.3942	0.2783	0.4726	9.1651
1/19/2001	7.4738	0.3942	0.2593	0.4726	8.5999
1/20/2001	7.6838	0.3942	0.2666	0.4726	8.8172
1/21/2001	7.6838	0.3942	0.2666	0.4726	8.8172
1/22/2001	7.6838	0.3942	0.2666	0.4726	8.8172
1/23/2001	7.7300	0.3942	0.2682	0.4726	8.8650
1/24/2001	6.8875	0.3942	0.2390	0.4726	7.9933
1/25/2001	6.8050	0.3942	0.2361	0.4726	7.9079
1/26/2001	7.3025	0.3942	0.2534	0.4726	8.4227
1/27/2001	6.9550	0.3942	0.2413	0.4726	8.0631
1/28/2001	6.9550	0.3942	0.2413	0.4726	8.0631
1/29/2001	6.9550	0.3942	0.2413	0.4726	8.0631
1/30/2001	6.6675	0.3942	0.2314	0.4726	7.7657
1/31/2001	5.8663	0.3942	0.2036	0.4726	6.9366
2/1/2001	5.9613	0.3942	0.2069	0.3883	6.9506
2/2/2001	5.9088	0.3942	0.2050	0.3883	6.8963
2/3/2001	6.5100	0.3942	0.2259	0.3883	7.5184

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
2/4/2001	6.5100	0.3942	0.2259	0.3883	7.5184
2/5/2001	6.5100	0.3942	0.2259	0.3883	7.5184
2/6/2001	5.6863	0.3942	0.1973	0.3883	6.6661
2/7/2001	5.4638	0.3942	0.1896	0.3883	6.4358
2/8/2001	5.7738	0.3942	0.2003	0.3883	6.7566
2/9/2001	6.4375	0.3942	0.2234	0.3883	7.4434
2/10/2001	6 3025	0.3942	0.2187	0.3883	7.3037
2/11/2001	6.3025	0.3942	0.2187	0.3883	7.3037
2/12/2001	6.3025	0.3942	0.2187	0.3883	7.3037
2/13/2001	5.7800	0.3942	0.2006	0.3883	6.7631
2/14/2001	5.5113	0.3942	0.1912	0.3883	6.4850
2/15/2001	5.8938	0.3942	0.2045	0.3883	6.8808
2/16/2001	5.4500	0.3942	0.1891	0.3883	6.4216
2/17/2001	5.4600	0.3942	0.1895	0.3883	6.4320
2/18/2001	5.4600	0.3942	0.1895	0.3883	6.4320
2/19/2001	5.4600	0.3942	0.1895	0.3883	6.4320
2/20/2001	5.4600	0.3942	0.1895	0.3883	6.4320
2/21/2001	5.2375	0.3942	0.1817	0.3883	6.2017
2/22/2001	5.2688	0.3942	0.1828	0.3883	6.2341
2/23/2001	5.1225	0.3942	0.1778	0.3883	6.0828
2/24/2001	4.9550	0.3942	0.1719	0.3883	5.9094
2/25/2001	4.9550	0.3942	0.1719	0.3883	5.9094
2/26/2001	4.9550	0.3942	0.1719	0.3883	5.9094
2/27/2001	4.9738	0.3942	0.1726	0.3883	5.9288
2/28/2001	5.0338	0.3942	0.1747	0.3883	5.9909
3/1/2001	5.2213	0.3942	0.1812	0.4124	6.2091
3/2/2001	5.3775	0.3942	0.1866	0.4124	6.3708
3/3/2001	5.2600	0.3942	0.1825	0.4124	6.2492
3/4/2001	5.2600	0.3942	0.1825	0.4124	6.2492
3/5/2001	5.2600	0.3942	0.1825	0.4124	6.2492
3/6/2001	5.2813	0.3942	0.1833	0.4124	6.2712

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge ($/MMBtu)	Total Intrastate Transport Charges	Total Cost of Delivered Gas
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
3/7/2001	5.1550	0.3942	0.1789	0.4124	6.1405
3/8/2001	5.0888	0.3942	0.1766	0.4124	6.0720
3/9/2001	5.0925	0.3942	0.1767	0.4124	6.0759
3/10/2001	4.9850	0.3942	0.1730	0.4124	5.9646
3/11/2001	4.9850	0.3942	0.1730	0.4124	5.9646
3/12/2001	4.9850	0.3942	0.1730	0.4124	5.9646
3/13/2001	4.8438	0.3942	0.1681	0.4124	5.8185
3/14/2001	4.9988	0.3942	0.1735	0.4124	5.9789
3/15/2001	4 8725	0.3942	0.1691	0.4124	5.8482
3/16/2001	4.8300	0.3942	0.1676	0.4124	5.8043
3/17/2001	4.8413	0.3942	0.1680	0.4124	5.8159
3/18/2001	4.8413	0.3942	0.1680	0.4124	5.8159
3/19/2001	4.8413	0.3942	0.1680	0.4124	5.8159
3/20/2001	4.9050	0.3942	0.1702	0.4124	5.8819
3/21/2001	4.8063	0.3942	0.1668	0.4124	5.7797
3/22/2001	4.8000	0.3942	0.1666	0.4124	5.7732
3/23/2001	4.7013	0.3942	0.1631	0.4124	5.6710
3/24/2001	4.8350	0.3942	0.1678	0.4124	5.8094
3/25/2001	4.8350	0.3942	0.1678	0.4124	5.8094
3/26/2001	4.8350	0.3942	0.1678	0.4124	5.8094
3/27/2001	4.7050	0.3942	0.1633	0.4124	5.6749
3/28/2001	4.8263	0.3942	0.1675	0.4124	5.8004
3/29/2001	4.9975	0.3942	0.1734	0.4124	5.9776
3/30/2001	4.8200	0.3942	0.1673	0.4124	5.7939
3/31/2001	4.5063	0.3942	0.1564	0.4124	5.4693
4/1/2001	4.5063	0.3942	0.1564	0.4103	5.4672
4/2/2001	4.5063	0.3942	0.1564	0.4103	5.4672
4/3/2001	4.2325	0.3942	0.1469	0.4103	5.1840
4/4/2001	4.8088	0.3942	0.1669	0.4103	5.7802
4/5/2001	4.9825	0.3942	0.1729	0.4103	5.9600
4/6/2001	4.8838	0.3942	0.1695	0.4103	5.8578

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
4/7/2001	4.9138	0.3942	0.1705	0.4103	5.8888
4/8/2001	4.9138	0.3942	0.1705	0.4103	5.8888
4/9/2001	4.9138	0.3942	0.1705	0.4103	5.8888
4/10/2001	5.0950	0.3942	0.1768	0.4103	6.0764
4/11/2001	5.2438	0.3942	0.1820	0.4103	6.2303
4/12/2001	5.2825	0.3942	0.1833	0.4103	6.2704
4/13/2001	5.0588	0.3942	0.1755	0.4103	6.0389
4/14/2001	5.0588	0.3942	0.1755	0.4103	6.0389
4/15/2001	5.0588	0.3942	0.1755	0.4103	6.0389
4/16/2001	5.0588	0.3942	0.1755	0.4103	6.0389
4/17/2001	5.1413	0.3942	0.1784	0.4103	6.1242
4/18/2001	5.0088	0.3942	0.1738	0.4103	5.9871
4/19/2001	4.8125	0.3942	0.1670	0.4103	5.7841
4/20/2001	4.6825	0.3942	0.1625	0.4103	5.6496
4/21/2001	4.5600	0.3942	0.1582	0.4103	5.5228
4/22/2001	4.5600	0.3942	0.1582	0.4103	5.5228
4/23/2001	4.5600	0.3942	0.1582	0.4103	5.5228
4/24/2001	4.9525	0.3942	0.1719	0.4103	5.9289
4/25/2001	4.9813	0.3942	0.1728	0.4103	5.9587
4/26/2001	4.7988	0.3942	0.1665	0.4103	5.7699
4/27/2001	4.7013	0.3942	0.1631	0.4103	5.6690
4/28/2001	4.5600	0.3942	0.1582	0.4103	5.5228
4/29/2001	4.5600	0.3942	0.1582	0.4103	5.5228
4/30/2001	4.5600	0.3942	0.1582	0.4103	5.5228
5/1/2001	4.5800	0.3942	0.1589	0.4173	5.5505
5/2/2001	4.4213	0.3942	0 1534	0.4173	5.3862
5/3/2001	4.3213	0.3942	0.1499	0.4173	5.2827
5/4/2001	4.2113	0.3942	0.1461	0.4173	5.1689
5/5/2001	4.1413	0.3942	0.1437	0.4173	5.0965
5/6/2001	4.1413	0.3942	0.1437	0.4173	5.0965
5/7/2001	4.1413	0.3942	0.1437	0.4173	5.0965

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge ($/MMBtu)	Total Intrastate Transport Charges	Total Cost of Delivered Gas (1) + (2) + (3) + (4)
	(1)	(2)	(3)	(4)	(5)
5/8/2001	4.0200	0.3942	0.1395	0.4173	4.9710
5/9/2001	3.9100	0.3942	0.1357	0.4173	4.8572
5/10/2001	3.8163	0.3942	0.1324	0.4173	4.7602
5/11/2001	3.7750	0.3942	0.1310	0.4173	4.7175
5/12/2001	3.7025	0.3942	0.1285	0.4173	4.6425
5/13/2001	3.7025	0.3942	0.1285	0.4173	4.6425
5/14/2001	3 7025	0.3942	0.1285	0.4173	4.6425
5/15/2001	3 7088	0 3942	0.1287	0.4173	4.6490
5/16/2001	3.8013	0.3942	0.1319	0.4173	4.7447
5/17/2001	3.7900	0.3942	0.1315	0.4173	4.7330
5/18/2001	3.4863	0.3942	0.1210	0.4173	4.4187
5/19/2001	3.2600	0.3942	0.1131	0.4173	4.1846
5/20/2001	3.2600	0.3942	0.1131	0.4173	4.1846
5/21/2001	3.2600	0.3942	0.1131	0.4173	4.1846
5/22/2001	3.6213	0.3942	0.1257	0.4173	4.5584
5/23/2001	3.6675	0.3942	0.1273	0.4173	4.6063
5/24/2001	3.7088	0.3942	0.1287	0.4173	4.6490
5/25/2001	3.7475	0.3942	0.1300	0.4173	4.6891
5/26/2001	3.2175	0.3942	0.1116	0.4173	4.1407
5/27/2001	3.2175	0.3942	0.1116	0.4173	4.1407
5/28/2001	3.2175	0.3942	0.1116	0.4173	4.1407
5/29/2001	3.2175	0.3942	0.1116	0.4173	4.1407
5/30/2001	3.3188	0.3942	0.1152	0.4173	4.2454
5/31/2001	3.1425	0.3942	0.1090	0.4173	4.0631
6/1/2001	3.3388	0.3942	0.1159	0.3906	4.2394
6/2/2001	3.0325	0.3942	0.1052	0.3906	3.9225
6/3/2001	3.0325	0.3942	0.1052	0.3906	3.9225
6/4/2001	3.0325	0.3942	0.1052	0.3906	3.9225
6/5/2001	3.4150	0.3942	0 1185	0.3906	4.3183
6/6/2001	3.5200	0.3942	0.1221	0.3906	4.4269
6/7/2001	3.2450	0.3942	0.1126	0.3906	4.1424

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge	Total Intrastate Transport Charges	Total Cost of Delivered Gas
			($/MMBtu)		
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)
6/8/2001	2.9863	0.3942	0.1036	0.3906	3.8747
6/9/2001	2.4975	0.3942	0.0867	0.3906	3.3690
6/10/2001	2.4975	0.3942	0.0867	0.3906	3.3690
6/11/2001	2.4975	0.3942	0.0867	0.3906	3.3690
6/12/2001	3.0800	0.3942	0.1069	0.3906	3.9717
6/13/2001	3.3788	0.3942	0.1172	0.3906	4.2808
6/14/2001	3 5475	0.3942	0.1231	0.3906	4.4554
6/15/2001	3.4300	0.3942	0.1190	0.3906	4.3338
6/16/2001	2.9725	0.3942	0.1031	0.3906	3.8605
6/17/2001	2.9725	0.3942	0.1031	0.3906	3.8605
6/18/2001	2.9725	0.3942	0.1031	0.3906	3.8605
6/19/2001	3.5638	0.3942	0.1237	0.3906	4.4722
6/20/2001	3.5438	0.3942	0.1230	0.3906	4.4515
6/21/2001	3.2338	0.3942	0.1122	0.3906	4.1308
6/22/2001	3.0600	0.3942	0.1062	0.3906	3.9510
6/23/2001	2.9888	0.3942	0.1037	0.3906	3.8773
6/24/2001	2.9888	0.3942	0.1037	0.3906	3.8773
6/25/2001	2.9888	0.3942	0.1037	0.3906	3.8773
6/26/2001	3.0838	0.3942	0.1070	0.3906	3.9756
6/27/2001	2.8850	0.3942	0.1001	0.3906	3.7699
6/28/2001	2.9050	0.3942	0.1008	0.3906	3.7906
6/29/2001	2.7700	0.3942	0.0961	0.3906	3.6509
6/30/2001	2.5975	0.3942	0.0901	0.3906	3.4724

Source: Col (1): Gas Daily daily midpoint spot-gas price for Permian - El Paso, El Paso Bondad and El Paso Non-Bondad points;
See Appendix N - Data, Column (4).
Col (2): El Paso tariff for CA deliveries under Rate Schedule FT-1; Includes reservation and volumetric charges;

Appendix N - Calculated Rates for Natural Gas Deliveries to Southern California Electricity Generators

Flow Date	Average Gas Price at Permian and San Juan Basins	Average Transport Tariff on El Paso from Permian and San Juan	El Paso Fuel Charge ($/MMBtu)	Total Intrastate Transport Charges	Total Cost of Delivered Gas
	(1)	(2)	(3)	(4)	(1) + (2) + (3) + (4) (5)

See Appendix N - Data, Column (15).

Col (3): (Average Gas Price at Permian and San Juan Basins) * (El Paso %Fuel Charge for Forward Haul);
See Appendix N - Data Column (17)

Col (4): SoCal Gas GT-F5 transport rates; Includes Firm Transport Charge,
Interstate Transmission Cost Surcharge and Gas Municipal Surcharge;
See Appendix N - Data Column (25)

Appendix N - Data

	Gas Daily Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
				[(1) + ((2) + (3)) / 2] / 2					(5) + (6) + (7) + (8)					(10) + (11) + (12) + (13)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
5/1/2000	2 84	2 74	2 75	**2.79**	0 3535	0 0066	0 0341	0 0094	*0.4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
5/2/2000	2 94	2.84	2 85	**2.89**	0 3535	0.0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
5/3/2000	2 94	2 84	2 85	**2.89**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0.3860*
5/4/2000	2 94	2 85	2 83	**2.89**	0.3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
5/5/2000	2 90	2.76	2 76	**2.83**	0.3535	0 0066	0.0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/6/2000	2 87	2 70	2 71	**2.79**	0 3535	0 0066	0.0341	0 0094	*0.4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/7/2000	2 87	2 70	2.71	**2.79**	0.3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0.0094	*0 3860*
5/8/2000	2.87	2.70	2.71	**2.79**	0 3535	0 0066	0 0341	0.0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/9/2000	2 92	2 75	2 76	**2.84**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0.0166	0.0094	*0 3860*
5/10/2000	3 04	2.83	2 84	**2.93**	0 3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/11/2000	3 01	2 79	2 79	**2.90**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/12/2000	3 13	2 93	2 93	**3.03**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/13/2000	3 08	2 87	2 88	**2.98**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
5/14/2000	3 08	2 87	2 88	**2.98**	0 3535	0 0066	0 0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
5/15/2000	3 08	2 87	2 88	**2.98**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/16/2000	3 13	2 92	2 91	**3.02**	0 3535	0 0066	0.0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
5/17/2000	3 25	3 00	3 01	**3.13**	0 3535	0.0066	0.0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/18/2000	3 31	3 05	3 06	**3.18**	0 3535	0.0066	0 0341	0.0094	*0 4035*	0 3535	0 0066	0.0166	0 0094	*0 3860*
5/19/2000	3 57	3 34	3 40	**3.47**	0.3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0.0166	0 0094	*0 3860*
5/20/2000	3 54	3 36	3 37	**3.45**	0 3535	0 0066	0 0341	0.0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/21/2000	3.54	3 36	3 37	**3.45**	0.3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/22/2000	3.54	3 36	3 37	**3.45**	0.3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/23/2000	3 97	3 78	3 85	**3.89**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/24/2000	3 78	3.62	3 63	**3.70**	0.3535	0 0066	0.0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/25/2000	3 80	3 61	3 65	**3.71**	0.3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
5/26/2000	4 04	3 86	3 87	**3.95**	0 3535	0 0066	0.0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/27/2000	4 02	3.80	3.75	**3.90**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/28/2000	4 02	3 80	3 75	**3.90**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
5/29/2000	4 02	3.80	3.75	**3.90**	0 3535	0 0066	0.0341	0 0094	*0 4035*	0 3535	0 0066	0.0166	0 0094	*0 3860*
5/30/2000	4 02	3 80	3 75	**3.90**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0.0066	0 0166	0 0094	*0 3860*
5/31/2000	4 26	4 02	4.05	**4.15**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
6/1/2000	4 39	4 22	4 24	**4.31**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/2/2000	4 27	4 17	4 17	**4.22**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
6/3/2000	4.03	3 83	3 85	**3.94**	0 3535	0 0066	0 0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
6/4/2000	4 03	3 83	3 85	**3.94**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/5/2000	4 03	3 83	3 85	**3 94**	0.3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/6/2000	4 06	3 96	3.97	**4.01**	0.3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/7/2000	4 33	4 17	4 19	**4.25**	0 3535	0 0066	0.0341	0.0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/8/2000	4 04	3 94	3 94	**3.99**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/9/2000	3 82	3 69	3 72	**3.76**	0.3535	0 0066	0.0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/10/2000	4 01	3 85	3 86	**3.93**	0 3535	0 0066	0 0341	0.0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	**Average Transport Tariff on El Paso from Permian and San Juan**	% Fuel Rate per MMBtu	**El Paso Fuel Charge**	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	**Total Intrastate Transport Charges**
							($/MMBtu)				
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
5/1/2000	**0 3948**	3 88%	**0.1082**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/2/2000	**0.3948**	3 88%	**0.1121**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/3/2000	**0.3948**	3 88%	**0.1121**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/4/2000	**0.3948**	3 88%	**0.1121**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0.0540	**0.4651**
5/5/2000	**0.3948**	3 88%	**0.1097**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/6/2000	**0.3948**	3 88%	**0.1082**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/7/2000	**0 3948**	3 88%	**0.1082**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/8/2000	**0.3948**	3 88%	**0.1082**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/9/2000	**0.3948**	3 88%	**0.1101**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/10/2000	**0.3948**	3 88%	**0.1138**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/11/2000	**0.3948**	3 88%	**0.1125**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/12/2000	**0.3948**	3 88%	**0.1174**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/13/2000	**0.3948**	3 88%	**0.1154**	0 2584	0 1527	0 0599	0 0444	0 0988	0.0675	0 0540	**0.4651**
5/14/2000	**0.3948**	3 88%	**0.1154**	0 2584	0 1527	0.0599	0 0444	0 0988	0 0675	0 0540	**0 4651**
5/15/2000	**0.3948**	3 88%	**0.1154**	0 2584	0 1527	0.0599	0.0444	0 0988	0 0675	0 0540	**0.4651**
5/16/2000	**0.3948**	3 88%	**0.1172**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/17/2000	**0.3948**	3 88%	**0.1213**	0 2584	0 1527	0 0599	0 0444	0 0988	0.0675	0 0540	**0 4651**
5/18/2000	**0.3948**	3 88%	**0.1234**	0 2584	0.1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/19/2000	**0.3948**	3 88%	**0.1345**	0 2584	0 1527	0 0599	0 0444	0 0988	0.0675	0 0540	**0.4651**
5/20/2000	**0 3948**	3.88%	**0.1338**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/21/2000	**0.3948**	3 88%	**0.1338**	0 2584	0 1527	0.0599	0 0444	0.0988	0 0675	0 0540	**0.4651**
5/22/2000	**0.3948**	3.88%	**0.1338**	0 2584	0 1527	0 0599	0 0444	0.0988	0 0675	0.0540	**0.4651**
5/23/2000	**0.3948**	3 88%	**0.1509**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/24/2000	**0.3948**	3.88%	**0.1436**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0.0540	**0.4651**
5/25/2000	**0.3948**	3 88%	**0.1440**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/26/2000	**0.3948**	3 88%	**0 1533**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0.0540	**0.4651**
5/27/2000	**0.3948**	3 88%	**0.1512**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0.0540	**0.4651**
5/28/2000	**0.3948**	3 88%	**0.1512**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/29/2000	**0.3948**	3 88%	**0 1512**	0 2584	0.1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/30/2000	**0.3948**	3 88%	**0.1512**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0 0540	**0.4651**
5/31/2000	**0.3948**	3 88%	**0.1608**	0 2584	0 1527	0 0599	0 0444	0 0988	0 0675	0.0540	**0.4651**
6/1/2000	**0.3948**	3 88%	**0.1671**	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	**0.4048**
6/2/2000	**0 3948**	3 88%	**0.1635**	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	**0.4048**
6/3/2000	**0.3948**	3 88%	**0.1527**	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	**0.4048**
6/4/2000	**0.3948**	3.88%	**0.1527**	0.2540	0 0793	0 0810	0.0600	0 1263	0 0864	0 0715	**0.4048**
6/5/2000	**0 3948**	3 88%	**0.1527**	0 2540	0 0793	0 0810	0 0600	0.1263	0 0864	0 0715	**0.4048**
6/6/2000	**0.3948**	3 88%	**0.1557**	0.2540	0 0793	0 0810	0.0600	0.1263	0 0864	0 0715	**0.4048**
6/7/2000	**0 3948**	3 88%	**0.1650**	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0.0715	**0.4048**
6/8/2000	**0.3948**	3 88%	**0.1548**	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0.0715	**0.4048**
6/9/2000	**0 3948**	3 88%	**0.1458**	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	**0.4048**
6/10/2000	**0.3948**	3 88%	**0.1525**	0 2540	0 0793	0 0810	0.0600	0 1263	0.0864	0 0715	**0.4048**

	Gas Daily Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
				[(1) + ((2) + (3)) / 2] / 2					*(5) + (6) + (7) + (8)*					*(10) + (11) + (12) + (13)*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	*(9)*	(10)	(11)	(12)	(13)	*(14)*
6/11/2000	4 01	3 85	3 86	**3.93**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
6/12/2000	4 01	3 85	3 86	**3.93**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/13/2000	4 14	3 97	3 98	**4.05**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/14/2000	4 20	4 03	4 04	**4 12**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/15/2000	4 07	3 89	3 90	**3.98**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/16/2000	4 21	4 04	4 03	**4.12**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/17/2000	4 19	3 96	3 99	**4.08**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/18/2000	4 19	3 96	3 99	**4.08**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/19/2000	4 19	3 96	3 99	**4.08**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
6/20/2000	4 19	3 99	4 03	**4.10**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/21/2000	3 90	3 72	3 75	**3 82**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/22/2000	4 06	3 84	3 84	**3 95**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/23/2000	4 37	4 11	4 13	**4.24**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/24/2000	4 23	3 94	3 94	**4.09**	0 3535	0 0066	0.0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
6/25/2000	4 23	3 94	3 94	**4.09**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/26/2000	4 23	3 94	3 94	**4.09**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/27/2000	4 29	4 03	4 05	**4.16**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/28/2000	4 50	4 23	4 22	**4.36**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/29/2000	4 45	4 16	4 17	**4.31**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
6/30/2000	4 19	3 89	3 91	**4.04**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0.0166	0 0094	*0 3860*
7/1/2000	4 22	3 92	3 95	**4.07**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/2/2000	4 22	3 92	3 95	**4 07**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
7/3/2000	4 22	3 92	3 95	**4.07**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/4/2000	4 22	3 92	3 95	**4.07**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/5/2000	4 22	3 92	3 95	**4 07**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/6/2000	4 16	3 97	3 96	**4.06**	0 3535	0 0066	0.0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/7/2000	3 94	3 70	3 66	**3.81**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0.0166	0 0094	*0 3860*
7/8/2000	3 75	3.39	3.39	**3.57**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0.0166	0 0094	*0 3860*
7/9/2000	3 75	3 39	3 39	**3.57**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
7/10/2000	3 75	3 39	3 39	**3.57**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
7/11/2000	4 07	3 83	3 82	**3 95**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
7/12/2000	4 14	3 85	3 84	**3 99**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/13/2000	4 27	3 98	3 97	**4.12**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/14/2000	4 07	3 72	3 70	**3.89**	0 3535	0 0066	0 0341	0.0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/15/2000	4 08	3 54	3 54	**3.81**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/16/2000	4 08	3 54	3 54	**3 81**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/17/2000	4 08	3.54	3 54	**3.81**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
7/18/2000	4 12	3 73	3 73	**3.93**	0 3535	0 0066	0 0341	0.0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/19/2000	3 95	3 61	3 64	**3.79**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
7/20/2000	4 04	3 72	3 73	**3.88**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
7/21/2000	3 91	3 59	3 62	**3.75**	0 3535	0 0066	0 0341	0 0094	*0.4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/22/2000	3 93	3 48	3 50	**3.71**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
7/23/2000	3 93	3 48	3 50	**3.71**	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	Average Transport Tariff on El Paso from Permian and San Juan	% Fuel Rate per MMBtu	El Paso Fuel Charge	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	Total Intrastate Transport Charges
							($/MMBtu)				
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
6/11/2000	0 3948	3 88%	0 1525	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/12/2000	0.3948	3 88%	0.1525	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/13/2000	0.3948	3 88%	0.1573	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/14/2000	0.3948	3 88%	0.1598	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/15/2000	0.3948	3 88%	0.1545	0 2540	0.0793	0.0810	0 0600	0 1263	0 0864	0 0715	0 4048
6/16/2000	0.3948	3 88%	0.1599	0 2540	0 0793	0 0810	0 0600	0.1263	0 0864	0 0715	0.4048
6/17/2000	0.3948	3 88%	0.1583	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/18/2000	0.3948	3 88%	0.1583	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0 4048
6/19/2000	0.3948	3 88%	0.1583	0 2540	0 0793	0 0810	0 0600	0 1263	0.0864	0 0715	0 4048
6/20/2000	0.3948	3 88%	0.1590	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/21/2000	0.3948	3 88%	0.1480	0 2540	0 0793	0 0810	0.0600	0 1263	0 0864	0 0715	0.4048
6/22/2000	0.3948	3 88%	0.1533	0 2540	0 0793	0 0810	0 0600	0 1263	0.0864	0 0715	0.4048
6/23/2000	0.3948	3 88%	0.1645	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/24/2000	0.3948	3 88%	0.1585	0 2540	0 0793	0 0810	0.0600	0 1263	0 0864	0 0715	0.4048
6/25/2000	0.3948	3 88%	0.1585	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/26/2000	0.3948	3 88%	0 1585	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/27/2000	0 3948	3 88%	0 1614	0 2540	0 0793	0 0810	0 0600	0.1263	0 0864	0 0715	0.4048
6/28/2000	0.3948	3 88%	0.1691	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/29/2000	0.3948	3 88%	0.1670	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0 0715	0.4048
6/30/2000	0.3948	3 88%	0.1569	0 2540	0 0793	0 0810	0 0600	0 1263	0 0864	0.0715	0.4048
7/1/2000	0.3948	3 88%	0.1580	0 2540	0 0793	0 0904	0 0671	0.1693	0 1157	0 0859	0.4192
7/2/2000	0.3948	3 88%	0.1580	0 2540	0 0793	0 0904	0 0671	0.1693	0 1157	0 0859	0.4192
7/3/2000	0.3948	3 88%	0.1580	0 2540	0 0793	0.0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/4/2000	0.3948	3 88%	0.1580	0 2540	0 0793	0 0904	0.0671	0 1693	0 1157	0 0859	0.4192
7/5/2000	0.3948	3 88%	0.1580	0 2540	0 0793	0 0904	0 0671	0.1693	0 1157	0 0859	0.4192
7/6/2000	0.3948	3 88%	0.1576	0 2540	0 0793	0 0904	0.0671	0.1693	0 1157	0 0859	0.4192
7/7/2000	0.3948	3 88%	0.1477	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/8/2000	0.3948	3 88%	0.1384	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/9/2000	0.3948	3 88%	0.1384	0 2540	0 0793	0 0904	0 0671	0.1693	0 1157	0 0859	0 4192
7/10/2000	0.3948	3 88%	0.1384	0 2540	0 0793	0.0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/11/2000	0.3948	3.88%	0.1531	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0 4192
7/12/2000	0.3948	3 88%	0.1548	0 2540	0 0793	0.0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/13/2000	0.3948	3 88%	0.1599	0.2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0 4192
7/14/2000	0.3948	3 88%	0.1508	0.2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/15/2000	0.3948	3 88%	0.1476	0 2540	0 0793	0 0904	0.0671	0 1693	0 1157	0 0859	0.4192
7/16/2000	0.3948	3 88%	0 1476	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/17/2000	0 3948	3 88%	0.1476	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/18/2000	0.3948	3 88%	0.1523	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/19/2000	0.3948	3 88%	0.1469	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/20/2000	0.3948	3 88%	0.1506	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/21/2000	0.3948	3 88%	0.1456	0 2540	0 0793	0 0904	0 0671	0 1693	0.1157	0 0859	0.4192
7/22/2000	0 3948	3 88%	0.1438	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192
7/23/2000	0 3948	3 88%	0 1438	0 2540	0 0793	0 0904	0 0671	0 1693	0 1157	0 0859	0.4192

	Gas Daily: Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
	(1)	(2)	(3)	[(1) + ((2) + (3)) / 2] / 2 (4)	(5)	(6)	(7)	(8)	*(5) + (6) + (7) + (8) (9)*	(10)	(11)	(12)	(13)	*(10) + (11) + (12) + (13) (14)*
7/24/2000	3 93	3 48	3.50	**3.71**	0 3535	0 0066	0 0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0.0094	*0.3860*
7/25/2000	3.80	3.56	3 58	**3.68**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0.0066	0.0166	0.0094	*0.3860*
7/26/2000	3 70	3 46	3.48	**3.58**	0.3535	0 0066	0 0341	0.0094	*0.4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
7/27/2000	3.71	3 45	3 46	**3.58**	0 3535	0 0066	0.0341	0 0094	*0.4035*	0 3535	0.0066	0.0166	0.0094	*0 3860*
7/28/2000	3 86	3.53	3 53	**3.69**	0 3535	0 0066	0 0341	0.0094	*0.4035*	0 3535	0.0066	0 0166	0.0094	*0.3860*
7/29/2000	3 91	3 49	3 51	**3.70**	0 3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0.0094	*0 3860*
7/30/2000	3.91	3 49	3 51	**3.70**	0 3535	0 0066	0 0341	0.0094	*0 4035*	0.3535	0.0066	0.0166	0 0094	*0 3860*
7/31/2000	3 91	3.49	3.51	**3.70**	0.3535	0 0066	0.0341	0 0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0 3860*
8/1/2000	3 76	3 54	3 52	**3.64**	0.3535	0.0066	0.0341	0.0094	*0 4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
8/2/2000	3 76	3.50	3 50	**3.63**	0.3535	0 0066	0.0341	0.0094	*0 4035*	0.3535	0.0066	0 0166	0.0094	*0 3860*
8/3/2000	3 99	3 67	3 63	**3.82**	0 3535	0 0066	0.0341	0 0094	*0.4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
8/4/2000	4 15	3 47	3.48	**3.81**	0 3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0.3860*
8/5/2000	4 19	3 27	3 29	**3.74**	0 3535	0.0066	0 0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
8/6/2000	4.19	3 27	3.29	**3.74**	0 3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0 3860*
8/7/2000	4.19	3.27	3.29	**3.74**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0.0066	0 0166	0.0094	*0 3860*
8/8/2000	4.37	3.43	3.45	**3.90**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0 3535	0.0066	0 0166	0.0094	*0 3860*
8/9/2000	4 40	3 41	3.45	**3.91**	0.3535	0 0066	0.0341	0 0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0 3860*
8/10/2000	4.39	3.47	3.51	**3.94**	0.3535	0 0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0 0094	*0 3860*
8/11/2000	4 36	3.47	3 51	**3.92**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0.3860*
8/12/2000	4 36	3 33	3.37	**3.85**	0 3535	0.0066	0 0341	0 0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
8/13/2000	4.36	3 33	3 37	**3.85**	0 3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0 0066	0.0166	0.0094	*0.3860*
8/14/2000	4 36	3 33	3.37	**3.85**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0.3860*
8/15/2000	4 35	3 44	3.46	**3.90**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0.3860*
8/16/2000	4.19	3 40	3.41	**3.80**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0 0166	0.0094	*0 3860*
8/17/2000	4 23	3.39	3 41	**3.81**	0 3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0 3860*
8/18/2000	4 34	3 46	3.45	**3.89**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0 3860*
8/19/2000	4 32	3 30	3.32	**3.81**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0 3860*
8/20/2000	4 32	3 30	3.32	**3.81**	0.3535	0.0066	0.0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0.0094	*0.3860*
8/21/2000	4 32	3.30	3 32	**3.81**	0.3535	0 0066	0.0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
8/22/2000	4 52	3 59	3.57	**4.05**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0 3860*
8/23/2000	4.69	3 67	3.68	**4.18**	0.3535	0.0066	0.0341	0 0094	*0.4035*	0 3535	0.0066	0.0166	0 0094	*0.3860*
8/24/2000	4.61	3 61	3 60	**4.11**	0.3535	0.0066	0.0341	0 0094	*0.4035*	0 3535	0.0066	0.0166	0 0094	*0 3860*
8/25/2000	4 35	3 31	3.32	**3.83**	0.3535	0.0066	0 0341	0.0094	*0 4035*	0.3535	0.0066	0 0166	0.0094	*0 3860*
8/26/2000	4 46	3 20	3.20	**3.83**	0.3535	0.0066	0 0341	0.0094	*0 4035*	0.3535	0.0066	0 0166	0.0094	*0 3860*
8/27/2000	4 46	3 20	3 20	**3.83**	0.3535	0.0066	0 0341	0.0094	*0 4035*	0.3535	0 0066	0.0166	0.0094	*0.3860*
8/28/2000	4 46	3 20	3.20	**3.83**	0 3535	0.0066	0.0341	0 0094	*0.4035*	0 3535	0.0066	0.0166	0.0094	*0 3860*
8/29/2000	4 52	3.34	3.34	**3.93**	0.3535	0.0066	0.0341	0.0094	*0 4035*	0 3535	0.0066	0.0166	0.0094	*0.3860*
8/30/2000	4.51	3 49	3 45	**3.99**	0.3535	0.0066	0.0341	0.0094	*0 4035*	0 3535	0.0066	0.0166	0 0094	*0.3860*
8/31/2000	4.54	3 59	3.56	**4.06**	0.3535	0.0066	0 0341	0 0094	*0.4035*	0.3535	0 0066	0 0166	0.0094	*0.3860*
9/1/2000	4.66	3.64	3 63	**4.14**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
9/2/2000	4.61	3 66	3 62	**4.12**	0.3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
9/3/2000	4 61	3 66	3 62	**4.12**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0.0066	0.0166	0.0094	*0.3860*
9/4/2000	4 61	3.66	3 62	**4.12**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0.3860*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	Average Transport Tariff on El Paso from Permian and San Juan	% Fuel Rate per MMBtu	El Paso Fuel Charge	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	Total Intrastate Transport Charges
						($/MMBtu)					
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
7/24/2000	0.3948	3.88%	0.1438	0.2540	0.0793	0.0904	0.0671	0.1693	0.1157	0.0859	0.4192
7/25/2000	0.3948	3.88%	0.1429	0.2540	0.0793	0.0904	0.0671	0.1693	0.1157	0.0859	0.4192
7/26/2000	0.3948	3.88%	0.1390	0.2540	0.0793	0.0904	0.0671	0.1693	0.1157	0.0859	0.4192
7/27/2000	0.3948	3.88%	0.1389	0.2540	0.0793	0.0904	0.0671	0.1693	0.1157	0.0859	0.4192
7/28/2000	0.3948	3.88%	0.1433	0.2540	0.0793	0.0904	0.0671	0.1693	0.1157	0.0859	0.4192
7/29/2000	0.3948	3.88%	0.1436	0.2540	0.0793	0.0904	0.0671	0.1693	0.1157	0.0859	0.4192
7/30/2000	0.3948	3.88%	0.1436	0.2540	0.0793	0.0904	0.0671	0.1693	0.1157	0.0859	0.4192
7/31/2000	0.3948	3.88%	0.1436	0.2540	0.0793	0.0904	0.0671	0.1693	0.1157	0.0859	0.4192
8/1/2000	0.3948	3.88%	0.1412	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/2/2000	0.3948	3.88%	0.1407	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/3/2000	0.3948	3.88%	0.1481	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/4/2000	0.3948	3.88%	0.1477	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/5/2000	0.3948	3.88%	0.1449	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/6/2000	0.3948	3.88%	0.1449	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/7/2000	0.3948	3.88%	0.1449	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/8/2000	0.3948	3.88%	0.1515	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/9/2000	0.3948	3.88%	0.1518	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/10/2000	0.3948	3.88%	0.1528	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/11/2000	0.3948	3.88%	0.1522	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/12/2000	0.3948	3.88%	0.1495	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/13/2000	0.3948	3.88%	0.1495	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/14/2000	0.3948	3.88%	0.1495	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/15/2000	0.3948	3.88%	0.1513	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/16/2000	0.3948	3.88%	0.1473	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/17/2000	0.3948	3.88%	0.1479	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/18/2000	0.3948	3.88%	0.1511	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/19/2000	0.3948	3.88%	0.1479	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/20/2000	0.3948	3.88%	0.1479	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/21/2000	0.3948	3.88%	0.1479	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/22/2000	0.3948	3.88%	0.1569	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/23/2000	0.3948	3.88%	0.1622	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/24/2000	0.3948	3.88%	0.1593	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/25/2000	0.3948	3.88%	0.1487	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/26/2000	0.3948	3.88%	0.1485	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/27/2000	0.3948	3.88%	0.1485	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/28/2000	0.3948	3.88%	0.1485	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/29/2000	0.3948	3.88%	0.1524	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/30/2000	0.3948	3.88%	0.1546	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
8/31/2000	0.3948	3.88%	0.1574	0.2540	0.0793	0.0770	0.0574	0.1499	0.1024	0.0745	0.4078
9/1/2000	0.3948	3.88%	0.1608	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/2/2000	0.3948	3.88%	0.1599	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/3/2000	0.3948	3.88%	0.1599	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/4/2000	0.3948	3.88%	0.1599	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354

	Gas Daily: Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
	(1)	(2)	(3)	[(1) + ((2) + (3)) / 2] / 2 (4)	(5)	(6)	(7)	(8)	(5) + (6) + (7) + (8) (9)	(10)	(11)	(12)	(13)	(10) + (11) + (12) + (13) (14)
9/5/2000	4 61	3 66	3.62	4.12	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0 0094	*0 3860*
9/6/2000	4 81	4.13	4 15	4.47	0 3535	0.0066	0 0341	0.0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0.3860*
9/7/2000	4 89	4.61	4.58	4.74	0 3535	0 0066	0 0341	0 0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0.3860*
9/8/2000	4.84	4 55	4.53	4.69	0.3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
9/9/2000	4.70	4 31	4 32	4.51	0 3535	0 0066	0.0341	0 0094	*0.4035*	0 3535	0.0066	0.0166	0.0094	*0 3860*
9/10/2000	4 70	4 31	4.32	4.51	0 3535	0 0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
9/11/2000	4 70	4 31	4 32	4.51	0.3535	0.0066	0.0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0.0094	*0.3860*
9/12/2000	4 90	4.51	4 52	4.71	0 3535	0 0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0.0166	0.0094	*0 3860*
9/13/2000	4 99	4 59	4.55	4.78	0.3535	0 0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0 0094	*0 3860*
9/14/2000	5 05	4 65	4 65	4.85	0 3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
9/15/2000	5 05	4.69	4 68	4.86	0 3535	0 0066	0 0341	0 0094	*0 4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
9/16/2000	5 11	4 62	4 59	4.85	0.3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
9/17/2000	5.11	4 62	4 59	4.85	0.3535	0 0066	0.0341	0 0094	*0 4035*	0.3535	0.0066	0 0166	0 0094	*0.3860*
9/18/2000	5 11	4.62	4 59	4.85	0 3535	0 0066	0.0341	0 0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
9/19/2000	4.95	4.36	4 32	4.64	0.3535	0.0066	0 0341	0 0094	*0 4035*	0.3535	0.0066	0.0166	0 0094	*0.3860*
9/20/2000	5 02	4 09	4.08	4.55	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0 0066	0 0166	0.0094	*0 3860*
9/21/2000	5.08	4 00	4 02	4.54	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0 0066	0 0166	0 0094	*0 3860*
9/22/2000	4 99	3 99	3 95	4.48	0.3535	0.0066	0.0341	0 0094	*0.4035*	0 3535	0.0066	0 0166	0 0094	*0.3860*
9/23/2000	4 92	3.86	3.79	4.37	0 3535	0.0066	0.0341	0 0094	*0.4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
9/24/2000	4 92	3 86	3.79	4.37	0 3535	0.0066	0 0341	0.0094	*0.4035*	0 3535	0.0066	0 0166	0.0094	*0 3860*
9/25/2000	4 92	3.86	3·79	4.37	0 3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0 3860*
9/26/2000	4 94	3 94	3 91	4.43	0 3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0 0166	0.0094	*0 3860*
9/27/2000	5 11	4 18	4 18	4.64	0.3535	0.0066	0.0341	0 0094	*0 4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
9/28/2000	5 18	4 30	4 28	4.73	0 3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
9/29/2000	5 05	4 34	4.33	4.69	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0 0094	*0 3860*
9/30/2000	5 04	4 79	4 81	4.92	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
10/1/2000	5 04	4 79	4.81	4.92	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
10/2/2000	5 04	4 79	4 81	4.92	0 3535	0 0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
10/3/2000	5 20	4 98	4 99	5.09	0 3535	0.0066	0.0341	0 0094	*0.4035*	0 3535	0.0066	0.0166	0 0094	*0 3860*
10/4/2000	5 21	5.06	5.07	5.14	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0.0066	0 0166	0.0094	*0 3860*
10/5/2000	5.16	5.03	5.03	5.10	0 3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0.0094	*0.3860*
10/6/2000	5 09	4 81	4 80	4.95	0 3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0 0066	0.0166	0 0094	*0.3860*
10/7/2000	4 86	4 32	4 32	4.59	0.3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0.3860*
10/8/2000	4 86	4.32	4.32	4.59	0.3535	0 0066	0.0341	0.0094	*0 4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
10/9/2000	4 86	4 32	4.32	4.59	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0.0094	*0.3860*
10/10/2000	4 96	4.58	4 57	4.77	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
10/11/2000	5.01	4.56	4 56	4.78	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0 3860*
10/12/2000	5 11	4 55	4.59	4.84	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0 0166	0 0094	*0.3860*
10/13/2000	5.44	4 81	4 80	5.12	0 3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
10/14/2000	5.29	4.55	4.57	4.92	0.3535	0.0066	0.0341	0.0094	*0 4035*	0.3535	0.0066	0 0166	0.0094	*0.3860*
10/15/2000	5 29	4.55	4 57	4.92	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
10/16/2000	5 29	4.55	4 57	4.92	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0.0066	0.0166	0.0094	*0.3860*
10/17/2000	5.24	4.66	4.65	4.95	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0.0066	0.0166	0.0094	*0 3860*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	Average Transport Tariff on El Paso from Permian and San Juan	% Fuel Rate per MMBtu	El Paso Fuel Charge	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	Total Intrastate Transport Charges
				($/MMBtu)							
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
9/5/2000	0.3948	3.88%	0.1599	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/6/2000	0.3948	3.88%	0.1736	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/7/2000	0.3948	3.88%	0.1839	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/8/2000	0.3948	3.88%	0.1819	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/9/2000	0.3948	3.88%	0.1748	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/10/2000	0.3948	3.88%	0.1748	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/11/2000	0.3948	3.88%	0.1748	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/12/2000	0.3948	3.88%	0.1826	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/13/2000	0.3948	3.88%	0.1854	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/14/2000	0.3948	3.88%	0.1881	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/15/2000	0.3948	3.88%	0.1887	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/16/2000	0.3948	3.88%	0.1883	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/17/2000	0.3948	3.88%	0.1883	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/18/2000	0.3948	3.88%	0.1883	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/19/2000	0.3948	3.88%	0.1801	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/20/2000	0.3948	3.88%	0.1766	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/21/2000	0.3948	3.88%	0.1762	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/22/2000	0.3948	3.88%	0.1738	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/23/2000	0.3948	3.88%	0.1695	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/24/2000	0.3948	3.88%	0.1695	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/25/2000	0.3948	3.88%	0.1695	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/26/2000	0.3948	3.88%	0.1718	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/27/2000	0.3948	3.88%	0.1801	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/28/2000	0.3948	3.88%	0.1836	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/29/2000	0.3948	3.88%	0.1820	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
9/30/2000	0.3948	3.88%	0.1908	0.2540	0.0793	0.1109	0.0823	0.1925	0.1316	0.1021	0.4354
10/1/2000	0.3948	3.88%	0.1908	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/2/2000	0.3948	3.88%	0.1908	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/3/2000	0.3948	3.88%	0.1975	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/4/2000	0.3948	3.88%	0.1992	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/5/2000	0.3948	3.88%	0.1977	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/6/2000	0.3948	3.88%	0.1919	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/7/2000	0.3948	3.88%	0.1780	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/8/2000	0.3948	3.88%	0.1780	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/9/2000	0.3948	3.88%	0.1780	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/10/2000	0.3948	3.88%	0.1849	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/11/2000	0.3948	3.88%	0.1855	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/12/2000	0.3948	3.88%	0.1876	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/13/2000	0.3948	3.88%	0.1987	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/14/2000	0.3948	3.88%	0.1910	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/15/2000	0.3948	3.88%	0.1910	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/16/2000	0.3948	3.88%	0.1910	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/17/2000	0.3948	3.88%	0.1919	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281

	Gas Daily: Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
				[(1) + ((2) + (3)) / 2] / 2					(5) + (6) + (7) + (8)					(10) + (11) + (12) + (13)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
10/18/2000	5.20	4.79	4 78	**4.99**	0.3535	0.0066	0.0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0.0094	*0 3860*
10/19/2000	5 29	4 97	4 93	**5.12**	0.3535	0.0066	0.0341	0 0094	*0 4035*	0.3535	0.0066	0 0166	0.0094	*0 3860*
10/20/2000	4 96	4 70	4.69	**4.83**	0 3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
10/21/2000	4.73	4 50	4 49	**4.61**	0 3535	0 0066	0.0341	0.0094	*0 4035*	0 3535	0 0066	0.0166	0.0094	*0.3860*
10/22/2000	4 73	4 50	4 49	**4.61**	0.3535	0.0066	0.0341	0.0094	*0 4035*	0.3535	0.0066	0 0166	0.0094	*0.3860*
10/23/2000	4 73	4 50	4 49	**4.61**	0.3535	0 0066	0.0341	0 0094	*0 4035*	0 3535	0.0066	0.0166	0 0094	*0 3860*
10/24/2000	4 73	4 59	4.57	**4.66**	0.3535	0.0066	0.0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0.0094	*0 3860*
10/25/2000	4 79	4 71	4 69	**4.75**	0.3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0.0066	0 0166	0 0094	*0 3860*
10/26/2000	4.61	4.51	4 50	**4.56**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0 3860*
10/27/2000	4 56	4.46	4 46	**4.51**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
10/28/2000	4.31	4 15	4.16	**4.23**	0 3535	0 0066	0.0341	0 0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0.3860*
10/29/2000	4.31	4 15	4 16	**4.23**	0 3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0.0166	0 0094	*0 3860*
10/30/2000	4 31	4.15	4 16	**4.23**	0 3535	0 0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0.3860*
10/31/2000	4 37	4 23	4 22	**4.29**	0 3535	0 0066	0.0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0.0094	*0 3860*
11/1/2000	4.20	4.02	4 00	**4.10**	0 3535	0.0066	0.0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0.0094	*0 3860*
11/2/2000	4 15	3.98	3 96	**4.06**	0.3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0.0066	0 0166	0.0094	*0 3860*
11/3/2000	4 23	4 13	4 11	**4.17**	0.3535	0 0066	0.0341	0 0094	*0.4035*	0.3535	0.0066	0 0166	0 0094	*0.3860*
11/4/2000	4 43	4 26	4 20	**4.33**	0.3535	0.0066	0.0341	0.0094	*0 4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
11/5/2000	4 43	4 26	4 20	**4.33**	0 3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0 0094	*0.3860*
11/6/2000	4 43	4 26	4 20	**4.33**	0.3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0 0066	0 0166	0.0094	*0.3860*
11/7/2000	4 51	4.46	4 44	**4.48**	0.3535	0 0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
11/8/2000	4 55	4.52	4 51	**4.53**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0 0094	*0 3860*
11/9/2000	4.88	4 80	4 79	**4.83**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
11/10/2000	5.47	5 50	5.47	**5.47**	0.3535	0 0066	0.0341	0 0094	*0.4035*	0.3535	0 0066	0 0166	0.0094	*0 3860*
11/11/2000	5 18	5 12	5 11	**5.15**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0 0094	*0.3860*
11/12/2000	5.18	5 12	5 11	**5.15**	0.3535	0 0066	0 0341	0 0094	*0.4035*	0.3535	0.0066	0 0166	0 0094	*0 3860*
11/13/2000	5 18	5.12	5 11	**5.15**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0 0094	*0 3860*
11/14/2000	5.60	5.52	5.51	**5.56**	0.3535	0 0066	0.0341	0.0094	*0.4035*	0 3535	0.0066	0.0166	0.0094	*0.3860*
11/15/2000	5.89	5 82	5 81	**5.85**	0 3535	0 0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0 0094	*0.3860*
11/16/2000	5 96	5 78	5 74	**5.86**	0 3535	0.0066	0 0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0.0094	*0 3860*
11/17/2000	5.92	5 49	5.53	**5.71**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0.3860*
11/18/2000	5.77	5 51	5.40	**5.61**	0.3535	0 0066	0 0341	0 0094	*0.4035*	0 3535	0 0066	0.0166	0 0094	*0.3860*
11/19/2000	5 77	5 51	5 40	**5.61**	0.3535	0.0066	0.0341	0 0094	*0 4035*	0 3535	0.0066	0.0166	0.0094	*0 3860*
11/20/2000	5 77	5.51	5 40	**5.61**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0 0166	0.0094	*0.3860*
11/21/2000	6.50	6.45	6.41	**6.47**	0.3535	0.0066	0.0341	0 0094	*0.4035*	0 3535	0 0066	0.0166	0.0094	*0.3860*
11/22/2000	6 51	6.35	6 33	**6.42**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0.0094	*0.3860*
11/23/2000	6.23	5 89	5.89	**6.06**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0.0094	*0 3860*
11/24/2000	6.23	5 89	5 89	**6.06**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0 3860*
11/25/2000	6.23	5 89	5 89	**6.06**	0 3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0 0066	0 0166	0.0094	*0.3860*
11/26/2000	6 23	5 89	5.89	**6.06**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0 0066	0 0166	0 0094	*0.3860*
11/27/2000	6 23	5 89	5 89	**6.06**	0.3535	0.0066	0.0341	0 0094	*0 4035*	0 3535	0 0066	0.0166	0 0094	*0.3860*
11/28/2000	6.21	5.88	5.84	**6.03**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0 0066	0.0166	0 0094	*0 3860*
11/29/2000	5.79	5 58	5.56	**5.68**	0 3535	0.0066	0.0341	0.0094	*0 4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	Average Transport Tariff on El Paso from Permian and San Juan	% Fuel Rate per MMBtu	El Paso Fuel Charge	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	Total Intrastate Transport Charges
							($/MMBtu)				
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
10/18/2000	0.3948	3.88%	0.1936	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/19/2000	0.3948	3.88%	0.1986	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/20/2000	0.3948	3.88%	0.1673	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/21/2000	0.3948	3.88%	0.1789	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/22/2000	0.3948	3.88%	0.1789	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/23/2000	0.3948	3.88%	0.1789	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/24/2000	0.3948	3.88%	0.1806	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/25/2000	0.3948	3.88%	0.1841	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/26/2000	0.3948	3.88%	0.1768	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/27/2000	0.3948	3.88%	0.1749	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/28/2000	0.3948	3.88%	0.1641	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/29/2000	0.3948	3.88%	0.1641	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/30/2000	0.3948	3.88%	0.1641	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
10/31/2000	0.3948	3.88%	0.1666	0.2540	0.0793	0.1015	0.0752	0.1830	0.1251	0.0948	0.4281
11/1/2000	0.3948	3.88%	0.1591	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/2/2000	0.3948	3.88%	0.1573	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/3/2000	0.3948	3.88%	0.1618	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/4/2000	0.3948	3.88%	0.1679	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/5/2000	0.3948	3.88%	0.1679	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/6/2000	0.3948	3.88%	0.1679	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/7/2000	0.3948	3.88%	0.1737	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/8/2000	0.3948	3.88%	0.1758	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/9/2000	0.3948	3.88%	0.1875	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/10/2000	0.3948	3.88%	0.2124	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/11/2000	0.3948	3.88%	0.1997	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/12/2000	0.3948	3.88%	0.1997	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/13/2000	0.3948	3.88%	0.1997	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/14/2000	0.3948	3.88%	0.2156	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/15/2000	0.3948	3.88%	0.2271	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/16/2000	0.3948	3.88%	0.2272	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/17/2000	0.3948	3.88%	0.2216	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/18/2000	0.3948	3.88%	0.2176	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/19/2000	0.3948	3.88%	0.2176	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/20/2000	0.3948	3.88%	0.2176	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/21/2000	0.3948	3.88%	0.2508	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/22/2000	0.3948	3.88%	0.2492	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/23/2000	0.3948	3.88%	0.2350	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/24/2000	0.3948	3.88%	0.2350	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/25/2000	0.3948	3.88%	0.2350	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/26/2000	0.3948	3.88%	0.2350	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/27/2000	0.3948	3.88%	0.2350	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/28/2000	0.3948	3.88%	0.2341	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270
11/29/2000	0.3948	3.88%	0.2203	0.2540	0.0793	0.1001	0.0742	0.1812	0.1239	0.0937	0.4270

	Gas Daily Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
	(1)	(2)	(3)	[(1) + ((2) + (3)) / 2] / 2 (4)	(5)	(6)	(7)	(8)	(5) + (6) + (7) + (8) (9)	(10)	(11)	(12)	(13)	(10) + (11) + (12) + (13) (14)
11/30/2000	5 78	5 66	5 68	**5.72**	0 3535	0.0066	0.0341	0.0094	*0.4035*	0 3535	0 0066	0 0166	0 0094	*0.3860*
12/1/2000	6 21	6 19	6 17	**6.19**	0 3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0.0094	*0 3860*
12/2/2000	6.49	6 40	6.40	**6.45**	0 3535	0.0066	0 0341	0.0094	*0 4035*	0.3535	0.0066	0.0166	0 0094	*0 3860*
12/3/2000	6.49	6 40	6 40	**6.45**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
12/4/2000	6.49	6 40	6.40	**6.45**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0 0094	*0.3860*
12/5/2000	7 29	7 32	7 23	**7.28**	0.3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0.0166	0 0094	*0 3860*
12/6/2000	8.16	7 90	7 99	**8.05**	0 3535	0 0066	0.0341	0.0094	*0 4035*	0 3535	0 0066	0 0166	0.0094	*0 3860*
12/7/2000	9 31	9 15	9 16	**9.23**	0.3535	0.0066	0 0341	0 0094	*0 4035*	0.3535	0.0066	0.0166	0 0094	*0 3860*
12/8/2000	9.04	8 98	9 00	**9.01**	0 3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0 0066	0 0166	0.0094	*0.3860*
12/9/2000	7.96	8 04	7 89	**7.96**	0.3535	0.0066	0.0341	0.0094	*0 4035*	0 3535	0 0066	0 0166	0.0094	*0 3860*
12/10/2000	7 96	8 04	7 89	**7.96**	0.3535	0 0066	0 0341	0.0094	*0 4035*	0.3535	0.0066	0 0166	0 0094	*0.3860*
12/11/2000	7.96	8 04	7 89	**7.96**	0.3535	0.0066	0 0341	0.0094	*0 4035*	0.3535	0.0066	0 0166	0.0094	*0.3860*
12/12/2000	10 52	10.73	10.16	**10.48**	0.3535	0.0066	0 0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0 3860*
12/13/2000	8 96	8 56	8 43	**8.73**	0.3535	0.0066	0 0341	0.0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
12/14/2000	7 35	6 74	6 71	**7.03**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0 0166	0.0094	*0 3860*
12/15/2000	7.36	6.82	6.79	**7.08**	0 3535	0.0066	0 0341	0 0094	*0 4035*	0.3535	0 0066	0 0166	0 0094	*0 3860*
12/16/2000	7 66	6 99	6.98	**7.32**	0.3535	0 0066	0 0341	0.0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0.3860*
12/17/2000	7.66	6.99	6 98	**7.32**	0.3535	0.0066	0.0341	0 0094	*0 4035*	0 3535	0.0066	0.0166	0 0094	*0 3860*
12/18/2000	7.66	6.99	6 98	**7.32**	0 3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0 0094	*0.3860*
12/19/2000	9 61	8 80	8 79	**9.20**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0 0166	0.0094	*0.3860*
12/20/2000	9.11	8 48	8.48	**8.79**	0 3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
12/21/2000	10 00	9 05	9.12	**9.54**	0.3535	0.0066	0.0341	0 0094	*0.4035*	0.3535	0 0066	0 0166	0.0094	*0.3860*
12/22/2000	10 94	9.92	9.99	**10.45**	0 3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0 0094	*0.3860*
12/23/2000	10 56	8 61	8.67	**9.60**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
12/24/2000	10.56	8 61	8 67	**9.60**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0 3860*
12/25/2000	10.56	8.61	8 67	**9.60**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0 3860*
12/26/2000	10.56	8 61	8 67	**9.60**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0 3860*
12/27/2000	10.40	8 45	8 43	**9.42**	0 3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0.0066	0.0166	0.0094	*0.3860*
12/28/2000	9 61	8 78	8 77	**9.19**	0.3535	0.0066	0.0341	0 0094	*0 4035*	0 3535	0.0066	0 0166	0 0094	*0.3860*
12/29/2000	9 13	8.42	8 41	**8.77**	0.3535	0 0066	0.0341	0 0094	*0.4035*	0 3535	0.0066	0.0166	0.0094	*0.3860*
12/30/2000	10 09	9.14	9.17	**9.62**	0.3535	0.0066	0 0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0.0094	*0 3860*
12/31/2000	10.09	9.14	9.17	**9.62**	0.3535	0.0066	0.0341	0.0094	*0.4035*	0.3535	0 0066	0.0166	0 0094	*0.3860*
1/1/2001	10 09	9.14	9.17	**9.62**	0.3565	0 0030	0 0344	0.0092	*0 4030*	0.3565	0 0030	0 0168	0 0092	*0.3854*
1/2/2001	10 09	9 14	9.17	**9.62**	0.3565	0 0030	0 0344	0.0092	*0 4030*	0 3565	0 0030	0.0168	0.0092	*0.3854*
1/3/2001	9 25	8 59	8.56	**8.91**	0.3565	0 0030	0 0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0.0092	*0 3854*
1/4/2001	9 18	8 96	8.98	**9.07**	0.3565	0 0030	0 0344	0 0092	*0.4030*	0.3565	0 0030	0 0168	0 0092	*0 3854*
1/5/2001	9 05	8 77	8 96	**8.96**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0 0030	0 0168	0.0092	*0 3854*
1/6/2001	9 17	8 86	8 93	**9.03**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
1/7/2001	9 17	8 86	8 93	**9.03**	0.3565	0.0030	0 0344	0.0092	*0.4030*	0 3565	0 0030	0 0168	0.0092	*0 3854*
1/8/2001	9 17	8 86	8 93	**9.03**	0.3565	0 0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0 0092	*0 3854*
1/9/2001	9 66	9.60	9 66	**9.64**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0 0030	0 0168	0.0092	*0 3854*
1/10/2001	9.23	9.06	9 08	**9.15**	0.3565	0.0030	0 0344	0 0092	*0.4030*	0 3565	0.0030	0.0168	0 0092	*0 3854*
1/11/2001	9.62	9.44	9.48	**9.54**	0.3565	0.0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	Average Transport Tariff on El Paso from Permian and San Juan	% Fuel Rate per MMBtu	El Paso Fuel Charge	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	Total Intrastate Transport Charges
				($/MMBtu)							
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
11/30/2000	0.3948	3.88%	0.2220	0.2540	0 0793	0 1001	0 0742	0 1812	0.1239	0 0937	0.4270
12/1/2000	0.3948	3 88%	0.2403	0.2540	0 0793	0.1554	0 1152	0.3598	0.2459	0.1621	0.4954
12/2/2000	0.3948	3.88%	0.2501	0.2540	0.0793	0.1554	0.1152	0 3598	0 2459	0.1621	0.4954
12/3/2000	0.3948	3.88%	0.2501	0.2540	0 0793	0.1554	0 1152	0.3598	0 2459	0.1621	0.4954
12/4/2000	0.3948	3.88%	0.2501	0 2540	0.0793	0 1554	0.1152	0.3598	0 2459	0.1621	0.4954
12/5/2000	0.3948	3.88%	0.2825	0 2540	0.0793	0 1554	0 1152	0.3598	0 2459	0.1621	0.4954
12/6/2000	0.3948	3 88%	0.3124	0 2540	0 0793	0 1554	0 1152	0.3598	0.2459	0.1621	0.4954
12/7/2000	0.3948	3 88%	0.3582	0 2540	0 0793	0.1554	0.1152	0.3598	0 2459	0.1621	0.4954
12/8/2000	0.3948	3 88%	0.3497	0 2540	0 0793	0.1554	0 1152	0.3598	0 2459	0.1621	0.4954
12/9/2000	0.3948	3.88%	0.3089	0 2540	0.0793	0.1554	0 1152	0.3598	0.2459	0.1621	0.4954
12/10/2000	0.3948	3.88%	0.3089	0 2540	0.0793	0.1554	0 1152	0 3598	0.2459	0 1621	0.4954
12/11/2000	0.3948	3.88%	0.3089	0 2540	0.0793	0 1554	0.1152	0 3598	0.2459	0.1621	0.4954
12/12/2000	0.3948	3 88%	0.4066	0.2540	0.0793	0.1554	0.1152	0.3598	0.2459	0.1621	0.4954
12/13/2000	0.3948	3 88%	0.3385	0 2540	0.0793	0.1554	0 1152	0.3598	0 2459	0.1621	0.4954
12/14/2000	0.3948	3.88%	0.2729	0.2540	0.0793	0.1554	0 1152	0.3598	0.2459	0.1621	0.4954
12/15/2000	0.3948	3 88%	0.2746	0 2540	0.0793	0.1554	0.1152	0.3598	0 2459	0 1621	0.4954
12/16/2000	0.3948	3.88%	0.2840	0.2540	0 0793	0 1554	0 1152	0.3598	0.2459	0 1621	0.4954
12/17/2000	0.3948	3 88%	0.2840	0 2540	0.0793	0 1554	0 1152	0.3598	0 2459	0 1621	0.4954
12/18/2000	0.3948	3.88%	0.2840	0.2540	0.0793	0.1554	0.1152	0 3598	0.2459	0.1621	0.4954
12/19/2000	0.3948	3.88%	0.3569	0.2540	0 0793	0 1554	0.1152	0 3598	0.2459	0.1621	0.4954
12/20/2000	0.3948	3 88%	0.3411	0 2540	0.0793	0.1554	0.1152	0.3598	0 2459	0.1621	0.4954
12/21/2000	0.3948	3 88%	0.3702	0.2540	0.0793	0.1554	0.1152	0 3598	0.2459	0.1621	0.4954
12/22/2000	0.3948	3.88%	0.4053	0.2540	0.0793	0.1554	0.1152	0.3598	0.2459	0 1621	0.4954
12/23/2000	0.3948	3 88%	0.3724	0.2540	0.0793	0 1554	0 1152	0 3598	0.2459	0 1621	0.4954
12/24/2000	0.3948	3 88%	0.3724	0.2540	0.0793	0.1554	0 1152	0.3598	0.2459	0.1621	0.4954
12/25/2000	0.3948	3 88%	0.3724	0.2540	0.0793	0.1554	0.1152	0 3598	0.2459	0.1621	0.4954
12/26/2000	0.3948	3.88%	0.3724	0.2540	0.0793	0.1554	0.1152	0.3598	0 2459	0.1621	0.4954
12/27/2000	0.3948	3.88%	0.3654	0.2540	0.0793	0.1554	0.1152	0 3598	0.2459	0 1621	0.4954
12/28/2000	0.3948	3.88%	0.3565	0.2540	0.0793	0.1554	0.1152	0.3598	0.2459	0.1621	0.4954
12/29/2000	0.3948	3 88%	0.3402	0.2540	0.0793	0.1554	0.1152	0 3598	0.2459	0.1621	0.4954
12/30/2000	0.3948	3 88%	0.3732	0.2540	0 0793	0.1554	0.1152	0 3598	0.2459	0.1621	0.4954
12/31/2000	0.3948	3 88%	0.3732	0.2540	0.0793	0.1554	0.1152	0.3598	0 2459	0.1621	0.4954
1/1/2001	0.3942	3.47%	0.3338	0.2542	0.0003	0.1966	0.1457	0.5171	0 3534	0.2181	0.4726
1/2/2001	0.3942	3 47%	0.3338	0.2542	0.0003	0.1966	0.1457	0 5171	0.3534	0 2181	0.4726
1/3/2001	0.3942	3 47%	0.3092	0.2542	0.0003	0.1966	0.1457	0.5171	0 3534	0 2181	0.4726
1/4/2001	0.3942	3.47%	0.3148	0.2542	0.0003	0.1966	0.1457	0 5171	0 3534	0.2181	0.4726
1/5/2001	0.3942	3.47%	0.3108	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/6/2001	0.3942	3.47%	0.3133	0 2542	0.0003	0.1966	0.1457	0 5171	0.3534	0.2181	0.4726
1/7/2001	0.3942	3.47%	0.3133	0.2542	0.0003	0.1966	0 1457	0 5171	0.3534	0.2181	0.4726
1/8/2001	0.3942	3 47%	0.3133	0.2542	0.0003	0.1966	0.1457	0 5171	0 3534	0.2181	0.4726
1/9/2001	0.3942	3 47%	0.3346	0 2542	0.0003	0.1966	0.1457	0 5171	0.3534	0 2181	0.4726
1/10/2001	0.3942	3.47%	0.3175	0.2542	0.0003	0.1966	0.1457	0.5171	0 3534	0.2181	0.4726
1/11/2001	0.3942	3.47%	0.3310	0.2542	0.0003	0.1966	0.1457	0 5171	0.3534	0.2181	0.4726

	Gas Daily' Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
	(1)	(2)	(3)	[(1) + ((2) + (3)) / 2] / 2 (4)	(5)	(6)	(7)	(8)	*(5) + (6) + (7) + (8) (9)*	(10)	(11)	(12)	(13)	*(10) + (11) + (12) + (13) (14)*
1/12/2001	8 77	8.80	8 81	**8.79**	0.3565	0 0030	0 0344	0.0092	*0 4030*	0.3565	0 0030	0.0168	0 0092	*0 3854*
1/13/2001	8 69	8.64	8.67	**8.67**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0 0030	0 0168	0.0092	*0.3854*
1/14/2001	8 69	8 64	8.67	**8.67**	0 3565	0 0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
1/15/2001	8 69	8 64	8 67	**8.67**	0.3565	0.0030	0 0344	0 0092	*0.4030*	0 3565	0.0030	0.0168	0.0092	*0 3854*
1/16/2001	8 69	8 64	8 67	**8.67**	0.3565	0.0030	0 0344	0.0092	*0.4030*	0.3565	0 0030	0 0168	0 0092	*0 3854*
1/17/2001	8 32	8 30	8.31	**8.31**	0.3565	0 0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0 0092	*0.3854*
1/18/2001	8 01	8.01	8 05	**8.02**	0.3565	0 0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0 0168	0.0092	*0.3854*
1/19/2001	7 48	7 44	7 50	**7.47**	0 3565	0.0030	0 0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
1/20/2001	7 71	7.64	7 69	**7.68**	0.3565	0.0030	0 0344	0 0092	*0 4030*	0.3565	0 0030	0 0168	0.0092	*0 3854*
1/21/2001	7 71	7 64	7 69	**7.68**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
1/22/2001	7.71	7.64	7.69	**7.68**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
1/23/2001	7 68	7.79	7.79	**7.73**	0 3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*
1/24/2001	6 90	6 91	6.86	**6.89**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0.0168	0 0092	*0 3854*
1/25/2001	6 81	6 81	6 79	**6.81**	0.3565	0.0030	0 0344	0.0092	*0 4030*	0 3565	0 0030	0 0168	0.0092	*0 3854*
1/26/2001	7 30	7.31	7.31	**7.30**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0 3565	0 0030	0 0168	0 0092	*0 3854*
1/27/2001	6 95	6.98	6 96	**6.96**	0 3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0.3854*
1/28/2001	6.95	6 98	6 96	**6.96**	0 3565	0.0030	0 0344	0 0092	*0.4030*	0.3565	0 0030	0 0168	0.0092	*0.3854*
1/29/2001	6 95	6 98	6.96	**6.96**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0 3565	0 0030	0.0168	0.0092	*0 3854*
1/30/2001	6 65	6 66	6 71	**6.67**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
1/31/2001	5 88	5.85	5.87	**5.87**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
2/1/2001	6 08	5 86	5.83	**5.96**	0.3565	0.0030	0 0344	0.0092	*0 4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
2/2/2001	6 01	5.82	5 81	**5.91**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
2/3/2001	6 58	6 47	6 41	**6.51**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0 0030	0.0168	0 0092	*0 3854*
2/4/2001	6.58	6 47	6 41	**6.51**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
2/5/2001	6 58	6 47	6 41	**6.51**	0.3565	0 0030	0.0344	0 0092	*0.4030*	0 3565	0.0030	0.0168	0 0092	*0.3854*
2/6/2001	5 73	5.69	5.61	**5.69**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*
2/7/2001	5 53	5 42	5.38	**5.46**	0 3565	0.0030	0 0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
2/8/2001	5.79	5.79	5.73	**5.77**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0 0030	0 0168	0.0092	*0 3854*
2/9/2001	6 43	6 53	6.37	**6.44**	0 3565	0 0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0.0092	*0.3854*
2/10/2001	6 31	6 31	6 29	**6.30**	0.3565	0.0030	0.0344	0 0092	*0 4030*	0 3565	0.0030	0 0168	0.0092	*0 3854*
2/11/2001	6.31	6 31	6 29	**6.30**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0 0168	0 0092	*0.3854*
2/12/2001	6.31	6 31	6 29	**6.30**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0 0092	*0.3854*
2/13/2001	5.73	5 91	5.77	**5.78**	0.3565	0 0030	0 0344	0 0092	*0 4030*	0 3565	0 0030	0 0168	0 0092	*0 3854*
2/14/2001	5 58	5 45	5.45	**5.51**	0.3565	0 0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
2/15/2001	5.93	5 87	5.85	**5.89**	0.3565	0 0030	0.0344	0 0092	*0 4030*	0.3565	0.0030	0 0168	0.0092	*0.3854*
2/16/2001	5.49	5 43	5 41	**5.45**	0 3565	0 0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0 0092	*0 3854*
2/17/2001	5 51	5 44	5.39	**5.46**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0.0168	0.0092	*0 3854*
2/18/2001	5 51	5 44	5 39	**5.46**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
2/19/2001	5 51	5 44	5.39	**5.46**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
2/20/2001	5.51	5.44	5.39	**5.46**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0.3854*
2/21/2001	5.26	5 24	5.21	**5.24**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0 0168	0 0092	*0.3854*
2/22/2001	5.27	5 27	5.27	**5.27**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
2/23/2001	5 15	5 11	5.09	**5.12**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	Average Transport Tariff on El Paso from Permian and San Juan	% Fuel Rate per MMBtu	El Paso Fuel Charge	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	Total Intrastate Transport Charges
				($/MMBtu)							
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
1/12/2001	0.3942	3.47%	0.3049	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/13/2001	0.3942	3.47%	0.3008	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/14/2001	0.3942	3.47%	0.3008	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/15/2001	0.3942	3.47%	0.3008	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/16/2001	0.3942	3.47%	0.3008	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/17/2001	0.3942	3.47%	0.2884	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/18/2001	0.3942	3.47%	0.2783	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/19/2001	0.3942	3.47%	0.2593	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/20/2001	0.3942	3.47%	0.2666	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/21/2001	0.3942	3.47%	0.2666	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/22/2001	0.3942	3.47%	0.2666	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/23/2001	0.3942	3.47%	0.2682	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/24/2001	0.3942	3.47%	0.2390	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/25/2001	0.3942	3.47%	0.2361	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/26/2001	0.3942	3.47%	0.2534	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/27/2001	0.3942	3.47%	0.2413	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/28/2001	0.3942	3.47%	0.2413	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/29/2001	0.3942	3.47%	0.2413	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/30/2001	0.3942	3.47%	0.2314	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
1/31/2001	0.3942	3.47%	0.2036	0.2542	0.0003	0.1966	0.1457	0.5171	0.3534	0.2181	0.4726
2/1/2001	0.3942	3.47%	0.2069	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/2/2001	0.3942	3.47%	0.2050	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/3/2001	0.3942	3.47%	0.2259	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/4/2001	0.3942	3.47%	0.2259	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/5/2001	0.3942	3.47%	0.2259	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/6/2001	0.3942	3.47%	0.1973	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/7/2001	0.3942	3.47%	0.1896	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/8/2001	0.3942	3.47%	0.2003	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/9/2001	0.3942	3.47%	0.2234	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/10/2001	0.3942	3.47%	0.2187	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/11/2001	0.3942	3.47%	0.2187	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/12/2001	0.3942	3.47%	0.2187	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/13/2001	0.3942	3.47%	0.2006	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/14/2001	0.3942	3.47%	0.1912	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/15/2001	0.3942	3.47%	0.2045	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/16/2001	0.3942	3.47%	0.1891	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/17/2001	0.3942	3.47%	0.1895	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/18/2001	0.3942	3.47%	0.1895	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/19/2001	0.3942	3.47%	0.1895	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/20/2001	0.3942	3.47%	0.1895	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/21/2001	0.3942	3.47%	0.1817	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/22/2001	0.3942	3.47%	0.1828	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883
2/23/2001	0.3942	3.47%	0.1778	0.2542	0.0003	0.1033	0.0766	0.3623	0.2477	0.1338	0.3883

	Gas Daily Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
	(1)	(2)	(3)	[(1) + ((2) + (3)) / 2] / 2 (4)	(5)	(6)	(7)	(8)	*(5) + (6) + (7) + (8) (9)*	(10)	(11)	(12)	(13)	*(10) + (11) + (12) + (13) (14)*
2/24/2001	5 01	4 91	4 90	**4.96**	0 3565	0 0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0 0168	0 0092	*0 3854*
2/25/2001	5.01	4 91	4.90	**4.96**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0.0092	*0.3854*
2/26/2001	5.01	4.91	4 90	**4.96**	0 3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0 0030	0 0168	0.0092	*0 3854*
2/27/2001	5 05	4 90	4 91	**4.97**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
2/28/2001	5 09	4 99	4 97	**5.03**	0.3565	0 0030	0 0344	0 0092	*0.4030*	0.3565	0.0030	0 0168	0 0092	*0.3854*
3/1/2001	5 26	5 16	5.21	**5.22**	0 3565	0.0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
3/2/2001	5 39	5 36	5 37	**5.38**	0 3565	0 0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
3/3/2001	5 25	5 29	5.27	**5.26**	0.3565	0.0030	0 0344	0.0092	*0 4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
3/4/2001	5 25	5 29	5.27	**5.26**	0 3565	0 0030	0 0344	0 0092	*0 4030*	0 3565	0 0030	0.0168	0 0092	*0 3854*
3/5/2001	5.25	5 29	5 27	**5.26**	0 3565	0.0030	0.0344	0 0092	*0 4030*	0.3565	0 0030	0.0168	0 0092	*0 3854*
3/6/2001	5 36	5.22	5 20	**5.28**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0 0092	*0.3854*
3/7/2001	5 20	5 11	5 12	**5.16**	0 3565	0 0030	0 0344	0 0092	*0 4030*	0 3565	0 0030	0 0168	0.0092	*0 3854*
3/8/2001	5.13	5 06	5 05	**5.09**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0 0030	0.0168	0.0092	*0 3854*
3/9/2001	5 14	5.06	5 05	**5.09**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*
3/10/2001	5 04	4 93	4 93	**4.99**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0.3854*
3/11/2001	5.04	4.93	4 93	**4.99**	0 3565	0 0030	0 0344	0.0092	*0 4030*	0 3565	0 0030	0 0168	0 0092	*0 3854*
3/12/2001	5 04	4 93	4 93	**4.99**	0 3565	0 0030	0 0344	0 0092	*0 4030*	0 3565	0 0030	0.0168	0.0092	*0.3854*
3/13/2001	4 88	4 81	4.81	**4.84**	0.3565	0 0030	0 0344	0 0092	*0.4030*	0.3565	0 0030	0 0168	0 0092	*0 3854*
3/14/2001	5 00	5 01	4 99	**5.00**	0.3565	0 0030	0 0344	0 0092	*0 4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*
3/15/2001	4 89	4.86	4.86	**4.87**	0.3565	0.0030	0 0344	0 0092	*0 4030*	0 3565	0.0030	0 0168	0 0092	*0 3854*
3/16/2001	4.85	4 81	4 83	**4.83**	0 3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
3/17/2001	4 89	4 79	4.81	**4.84**	0.3565	0.0030	0 0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0.3854*
3/18/2001	4 89	4 79	4 81	**4 84**	0.3565	0.0030	0 0344	0 0092	*0.4030*	0 3565	0.0030	0 0168	0.0092	*0.3854*
3/19/2001	4 89	4.79	4 81	**4.84**	0.3565	0 0030	0 0344	0.0092	*0 4030*	0.3565	0 0030	0 0168	0 0092	*0 3854*
3/20/2001	4 96	4 86	4 86	**4.91**	0 3565	0.0030	0 0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0 0092	*0 3854*
3/21/2001	4 87	4 76	4.73	**4.81**	0 3565	0.0030	0.0344	0 0092	*0.4030*	0 3565	0 0030	0 0168	0 0092	*0 3854*
3/22/2001	4 95	4.67	4 63	**4.80**	0 3565	0.0030	0.0344	0 0092	*0 4030*	0.3565	0.0030	0 0168	0 0092	*0.3854*
3/23/2001	4 81	4 60	4 60	**4.70**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0.3854*
3/24/2001	4.94	4 73	4 74	**4.84**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0 3565	0.0030	0.0168	0.0092	*0 3854*
3/25/2001	4 94	4.73	4.74	**4.84**	0 3565	0 0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
3/26/2001	4 94	4 73	4 74	**4.84**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0 0092	*0.3854*
3/27/2001	5 00	4 38	4.44	**4.71**	0 3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0 0030	0.0168	0.0092	*0.3854*
3/28/2001	5 18	4 45	4.50	**4.83**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0.0168	0 0092	*0 3854*
3/29/2001	5 41	4 60	4.59	**5.00**	0 3565	0.0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
3/30/2001	5 16	4 47	4.51	**4.82**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
3/31/2001	5 09	3.85	4.01	**4.51**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/1/2001	5 09	3 85	4 01	**4.51**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/2/2001	5 09	3.85	4.01	**4.51**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/3/2001	4.89	3.51	3 65	**4.23**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0.3854*
4/4/2001	5 20	4.34	4.51	**4.81**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/5/2001	5.25	4.70	4.75	**4.98**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/6/2001	5 12	4.64	4.66	**4.88**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/7/2001	5.19	4 62	4.67	**4.91**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	Average Transport Tariff on El Paso from Permian and San Juan	% Fuel Rate per MMBtu	El Paso Fuel Charge	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	Total Intrastate Transport Charges
							($/MMBtu)				
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
2/24/2001	0.3942	3 47%	0.1719	0.2542	0 0003	0 1033	0 0766	0.3623	0 2477	0.1338	0.3883
2/25/2001	0.3942	3 47%	0.1719	0 2542	0 0003	0.1033	0 0766	0.3623	0 2477	0 1338	0.3883
2/26/2001	0.3942	3.47%	0.1719	0.2542	0.0003	0.1033	0 0766	0.3623	0.2477	0 1338	0.3883
2/27/2001	0.3942	3 47%	0.1726	0.2542	0 0003	0 1033	0 0766	0 3623	0 2477	0 1338	0.3883
2/28/2001	0.3942	3 47%	0.1747	0.2542	0.0003	0 1033	0.0766	0.3623	0.2477	0.1338	0.3883
3/1/2001	0.3942	3.47%	0.1812	0 2542	0.0003	0 1485	0.1101	0.3582	0.2449	0.1579	0.4124
3/2/2001	0.3942	3.47%	0.1866	0 2542	0.0003	0.1485	0.1101	0.3582	0.2449	0 1579	0.4124
3/3/2001	0.3942	3 47%	0.1825	0.2542	0 0003	0.1485	0.1101	0.3582	0.2449	0.1579	0.4124
3/4/2001	0.3942	3 47%	0.1825	0 2542	0.0003	0.1485	0.1101	0 3582	0 2449	0.1579	0.4124
3/5/2001	0.3942	3 47%	0.1825	0.2542	0 0003	0.1485	0.1101	0.3582	0 2449	0.1579	0.4124
3/6/2001	0.3942	3 47%	0.1833	0.2542	0.0003	0.1485	0 1101	0.3582	0 2449	0.1579	0.4124
3/7/2001	0.3942	3.47%	0.1789	0.2542	0.0003	0 1485	0 1101	0 3582	0.2449	0 1579	0.4124
3/8/2001	0.3942	3 47%	0.1766	0.2542	0.0003	0.1485	0 1101	0 3582	0.2449	0.1579	0.4124
3/9/2001	0.3942	3 47%	0.1767	0.2542	0 0003	0.1485	0.1101	0.3582	0.2449	0.1579	0.4124
3/10/2001	0.3942	3.47%	0.1730	0 2542	0 0003	0.1485	0.1101	0.3582	0.2449	0.1579	0.4124
3/11/2001	0.3942	3.47%	0.1730	0 2542	0 0003	0 1485	0 1101	0.3582	0.2449	0 1579	0.4124
3/12/2001	0.3942	3 47%	0.1730	0.2542	0.0003	0.1485	0.1101	0.3582	0 2449	0.1579	0.4124
3/13/2001	0.3942	3.47%	0.1681	0 2542	0.0003	0.1485	0.1101	0.3582	0 2449	0.1579	0.4124
3/14/2001	0.3942	3.47%	0.1735	0 2542	0.0003	0.1485	0.1101	0.3582	0 2449	0 1579	0.4124
3/15/2001	0.3942	3 47%	0.1691	0 2542	0 0003	0.1485	0 1101	0 3582	0 2449	0.1579	0.4124
3/16/2001	0.3942	3.47%	0.1676	0 2542	0.0003	0.1485	0 1101	0 3582	0.2449	0 1579	0.4124
3/17/2001	0.3942	3 47%	0.1680	0 2542	0.0003	0.1485	0.1101	0.3582	0.2449	0.1579	0.4124
3/18/2001	0.3942	3 47%	0.1680	0 2542	0 0003	0.1485	0.1101	0.3582	0.2449	0.1579	0.4124
3/19/2001	0.3942	3 47%	0.1680	0 2542	0.0003	0.1485	0.1101	0 3582	0.2449	0.1579	0.4124
3/20/2001	0.3942	3.47%	0.1702	0.2542	0.0003	0.1485	0.1101	0.3582	0.2449	0.1579	0.4124
3/21/2001	0.3942	3 47%	0.1668	0.2542	0.0003	0.1485	0.1101	0 3582	0 2449	0.1579	0.4124
3/22/2001	0.3942	3 47%	0.1666	0.2542	0.0003	0 1485	0.1101	0 3582	0.2449	0 1579	0.4124
3/23/2001	0.3942	3.47%	0.1631	0 2542	0 0003	0 1485	0 1101	0.3582	0.2449	0.1579	0.4124
3/24/2001	0.3942	3 47%	0.1678	0 2542	0 0003	0.1485	0 1101	0.3582	0.2449	0.1579	0.4124
3/25/2001	0.3942	3 47%	0.1678	0 2542	0.0003	0.1485	0.1101	0.3582	0.2449	0.1579	0.4124
3/26/2001	0.3942	3 47%	0.1678	0 2542	0 0003	0.1485	0 1101	0 3582	0.2449	0.1579	0.4124
3/27/2001	0.3942	3 47%	0.1633	0.2542	0 0003	0.1485	0 1101	0 3582	0.2449	0 1579	0.4124
3/28/2001	0.3942	3.47%	0.1675	0.2542	0.0003	0.1485	0.1101	0 3582	0.2449	0 1579	0.4124
3/29/2001	0.3942	3.47%	0.1734	0.2542	0 0003	0.1485	0 1101	0.3582	0.2449	0 1579	0.4124
3/30/2001	0.3942	3 47%	0.1673	0 2542	0.0003	0.1485	0.1101	0.3582	0 2449	0.1579	0.4124
3/31/2001	0.3942	3.47%	0.1564	0.2542	0 0003	0.1485	0 1101	0.3582	0 2449	0 1579	0.4124
4/1/2001	0.3942	3 47%	0.1564	0.2542	0 0003	0.1503	0 1115	0.3435	0 2348	0 1558	0.4103
4/2/2001	0.3942	3 47%	0.1564	0.2542	0.0003	0.1503	0 1115	0.3435	0 2348	0.1558	0.4103
4/3/2001	0.3942	3.47%	0.1469	0.2542	0.0003	0.1503	0.1115	0 3435	0.2348	0 1558	0.4103
4/4/2001	0.3942	3.47%	0.1669	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0 1558	0.4103
4/5/2001	0.3942	3.47%	0.1729	0.2542	0.0003	0.1503	0.1115	0.3435	0 2348	0.1558	0.4103
4/6/2001	0.3942	3.47%	0.1695	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/7/2001	0.3942	3 47%	0.1705	0.2542	0.0003	0.1503	0.1115	0 3435	0 2348	0.1558	0.4103

	Gas Daily Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
	(1)	(2)	(3)	[(1) + ((2) + (3)) / 2] / 2 (4)	(5)	(6)	(7)	(8)	*(5) + (6) + (7) + (8) (9)*	(10)	(11)	(12)	(13)	*(10) + (11) + (12) + (13) (14)*
4/8/2001	5 19	4 62	4.67	**4.91**	0 3565	0 0030	0 0344	0.0092	*0 4030*	0 3565	0 0030	0.0168	0.0092	*0.3854*
4/9/2001	5 19	4 62	4 67	**4.91**	0 3565	0.0030	0 0344	0.0092	*0.4030*	0 3565	0 0030	0.0168	0 0092	*0.3854*
4/10/2001	5 33	4.91	4.83	**5.10**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0 0030	0 0168	0 0092	*0.3854*
4/11/2001	5 48	5.06	4 97	**5.24**	0.3565	0.0030	0 0344	0 0092	*0 4030*	0.3565	0 0030	0 0168	0.0092	*0 3854*
4/12/2001	5 38	5 20	5 18	**5.28**	0 3565	0 0030	0 0344	0 0092	*0 4030*	0 3565	0 0030	0 0168	0 0092	*0 3854*
4/13/2001	5 24	4 91	4.86	**5.06**	0.3565	0 0030	0 0344	0.0092	*0 4030*	0 3565	0.0030	0 0168	0.0092	*0 3854*
4/14/2001	5 24	4 91	4 86	**5.06**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0 0030	0.0168	0 0092	*0 3854*
4/15/2001	5 24	4.91	4.86	**5.06**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0.3854*
4/16/2001	5 24	4 91	4 86	**5.06**	0 3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0 0030	0 0168	0 0092	*0.3854*
4/17/2001	5 31	4 99	4 96	**5.14**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/18/2001	5 22	4 82	4 79	**5.01**	0.3565	0 0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/19/2001	5 08	4.55	4 56	**4.81**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
4/20/2001	5.02	4 33	4.37	**4.68**	0.3565	0.0030	0.0344	0 0092	*0 4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/21/2001	4 91	4 22	4 21	**4.56**	0 3565	0.0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/22/2001	4.91	4 22	4.21	**4.56**	0.3565	0 0030	0.0344	0 0092	*0.4030*	0.3565	0 0030	0.0168	0 0092	*0 3854*
4/23/2001	4 91	4.22	4.21	**4.56**	0.3565	0 0030	0.0344	0 0092	*0 4030*	0 3565	0.0030	0.0168	0.0092	*0 3854*
4/24/2001	5.05	4 88	4 83	**4.95**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*
4/25/2001	5.13	4 84	4 83	**4.98**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
4/26/2001	4.90	4 72	4 69	**4.80**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0.0168	0.0092	*0 3854*
4/27/2001	4.83	4 56	4 59	**4.70**	0.3565	0 0030	0 0344	0.0092	*0.4030*	0.3565	0 0030	0.0168	0 0092	*0.3854*
4/28/2001	4 66	4 44	4.50	**4.56**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
4/29/2001	4.66	4 44	4 50	**4.56**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0.0092	*0 3854*
4/30/2001	4.66	4 44	4 50	**4.56**	0 3565	0 0030	0 0344	0.0092	*0 4030*	0 3565	0.0030	0.0168	0.0092	*0.3854*
5/1/2001	4 63	4 50	4 56	**4.58**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0 0168	0.0092	*0 3854*
5/2/2001	4 45	4 37	4 43	**4.42**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0.3854*
5/3/2001	4 42	4 22	4.24	**4.32**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
5/4/2001	4.32	4 09	4 13	**4.21**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
5/5/2001	4 34	3 94	3.96	**4.14**	0.3565	0.0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
5/6/2001	4 34	3.94	3.96	**4.14**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
5/7/2001	4 34	3 94	3 96	**4.14**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0.0168	0.0092	*0.3854*
5/8/2001	4.17	3.86	3.89	**4.02**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0.0168	0.0092	*0.3854*
5/9/2001	4 10	3 73	3 72	**3.91**	0.3565	0.0030	0 0344	0.0092	*0 4030*	0 3565	0.0030	0 0168	0.0092	*0 3854*
5/10/2001	4 01	3 62	3 63	**3.82**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0 0092	*0.3854*
5/11/2001	4 04	3 50	3 52	**3.78**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0 3565	0 0030	0.0168	0.0092	*0 3854*
5/12/2001	4 11	3 29	3 32	**3.70**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0 0030	0.0168	0.0092	*0 3854*
5/13/2001	4 11	3.29	3 32	**3.70**	0.3565	0.0030	0 0344	0 0092	*0 4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*
5/14/2001	4 11	3.29	3.32	**3.70**	0.3565	0.0030	0.0344	0 0092	*0 4030*	0.3565	0.0030	0 0168	0 0092	*0 3854*
5/15/2001	4 14	3.27	3 30	**3.71**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0 0092	*0.3854*
5/16/2001	4.32	3.28	3 29	**3.80**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0.0092	*0.3854*
5/17/2001	4 32	3.26	3.26	**3.79**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
5/18/2001	3.99	2 98	2.99	**3.49**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0 3565	0 0030	0.0168	0.0092	*0 3854*
5/19/2001	3.82	2 70	2.71	**3.26**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
5/20/2001	3 82	2.70	2 71	**3.26**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0.0168	0 0092	*0.3854*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	Average Transport Tariff on El Paso from Permian and San Juan	% Fuel Rate per MMBtu	El Paso Fuel Charge	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	Total Intrastate Transport Charges
				($/MMBtu)							
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
4/8/2001	0.3942	3.47%	0.1705	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/9/2001	0.3942	3.47%	0.1705	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/10/2001	0.3942	3.47%	0.1768	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/11/2001	0.3942	3.47%	0.1820	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/12/2001	0.3942	3.47%	0.1833	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/13/2001	0.3942	3.47%	0.1755	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/14/2001	0.3942	3.47%	0.1755	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/15/2001	0.3942	3.47%	0.1755	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/16/2001	0.3942	3.47%	0.1755	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/17/2001	0.3942	3.47%	0.1784	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/18/2001	0.3942	3.47%	0.1738	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/19/2001	0.3942	3.47%	0.1670	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/20/2001	0.3942	3.47%	0.1625	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/21/2001	0.3942	3.47%	0.1582	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/22/2001	0.3942	3.47%	0.1582	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/23/2001	0.3942	3.47%	0.1582	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/24/2001	0.3942	3.47%	0.1719	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/25/2001	0.3942	3.47%	0.1728	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/26/2001	0.3942	3.47%	0.1665	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/27/2001	0.3942	3.47%	0.1631	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/28/2001	0.3942	3.47%	0.1582	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/29/2001	0.3942	3.47%	0.1582	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
4/30/2001	0.3942	3.47%	0.1582	0.2542	0.0003	0.1503	0.1115	0.3435	0.2348	0.1558	0.4103
5/1/2001	0.3942	3.47%	0.1589	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/2/2001	0.3942	3.47%	0.1534	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/3/2001	0.3942	3.47%	0.1499	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/4/2001	0.3942	3.47%	0.1461	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/5/2001	0.3942	3.47%	0.1437	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/6/2001	0.3942	3.47%	0.1437	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/7/2001	0.3942	3.47%	0.1437	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/8/2001	0.3942	3.47%	0.1395	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/9/2001	0.3942	3.47%	0.1357	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/10/2001	0.3942	3.47%	0.1324	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/11/2001	0.3942	3.47%	0.1310	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/12/2001	0.3942	3.47%	0.1285	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/13/2001	0.3942	3.47%	0.1285	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/14/2001	0.3942	3.47%	0.1285	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/15/2001	0.3942	3.47%	0.1287	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/16/2001	0.3942	3.47%	0.1319	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/17/2001	0.3942	3.47%	0.1315	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/18/2001	0.3942	3.47%	0.1210	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/19/2001	0.3942	3.47%	0.1131	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/20/2001	0.3942	3.47%	0.1131	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173

	Gas Daily Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
	(1)	(2)	(3)	[(1) + ((2) + (3)) / 2] / 2 (4)	(5)	(6)	(7)	(8)	(5) + (6) + (7) + (8) (9)	(10)	(11)	(12)	(13)	(10) + (11) + (12) + (13) (14)
5/21/2001	3 82	2 70	2 71	**3.26**	0.3565	0.0030	0 0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0 0092	*0 3854*
5/22/2001	4 00	3.29	3 20	**3.62**	0.3565	0 0030	0.0344	0 0092	*0.4030*	0.3565	0 0030	0 0168	0 0092	*0 3854*
5/23/2001	3 89	3.46	3.45	**3.67**	0 3565	0 0030	0 0344	0.0092	*0 4030*	0.3565	0 0030	0.0168	0.0092	*0 3854*
5/24/2001	3 95	3.46	3 49	**3.71**	0 3565	0 0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
5/25/2001	3.99	3 51	3.50	**3.75**	0.3565	0.0030	0 0344	0 0092	*0.4030*	0.3565	0 0030	0.0168	0.0092	*0.3854*
5/26/2001	3 60	2 82	2 86	**3.22**	0 3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0 0030	0.0168	0 0092	*0 3854*
5/27/2001	3.60	2 82	2.86	**3.22**	0 3565	0.0030	0 0344	0 0092	*0 4030*	0.3565	0.0030	0 0168	0 0092	*0 3854*
5/28/2001	3.60	2 82	2.86	**3.22**	0.3565	0.0030	0.0344	0 0092	*0 4030*	0 3565	0 0030	0 0168	0 0092	*0.3854*
5/29/2001	3 60	2 82	2.86	**3.22**	0 3565	0 0030	0.0344	0.0092	*0 4030*	0 3565	0.0030	0 0168	0 0092	*0 3854*
5/30/2001	3 65	2.99	3 00	**3.32**	0 3565	0 0030	0 0344	0 0092	*0.4030*	0.3565	0 0030	0 0168	0 0092	*0 3854*
5/31/2001	3 49	2 81	2 80	**3.14**	0.3565	0 0030	0 0344	0 0092	*0 4030*	0.3565	0 0030	0.0168	0.0092	*0 3854*
6/1/2001	3 60	3 09	3 07	**3.34**	0 3565	0.0030	0.0344	0 0092	*0 4030*	0 3565	0 0030	0 0168	0 0092	*0 3854*
6/2/2001	3 51	2 60	2 52	**3.03**	0 3565	0 0030	0 0344	0.0092	*0.4030*	0 3565	0.0030	0 0168	0.0092	*0.3854*
6/3/2001	3 51	2.60	2 52	**3.03**	0 3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0 0168	0 0092	*0 3854*
6/4/2001	3.51	2 60	2.52	**3.03**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0 0030	0.0168	0 0092	*0 3854*
6/5/2001	4 01	2.85	2.81	**3.42**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
6/6/2001	4 03	2.98	3.06	**3.52**	0.3565	0.0030	0 0344	0 0092	*0 4030*	0.3565	0.0030	0 0168	0 0092	*0 3854*
6/7/2001	3.64	2 87	2 84	**3.25**	0 3565	0.0030	0 0344	0.0092	*0 4030*	0 3565	0.0030	0.0168	0.0092	*0 3854*
6/8/2001	3 48	2 47	2.52	**2.99**	0.3565	0.0030	0.0344	0 0092	*0 4030*	0.3565	0.0030	0 0168	0 0092	*0 3854*
6/9/2001	3 26	1 72	1 76	**2.50**	0.3565	0 0030	0.0344	0 0092	*0.4030*	0.3565	0 0030	0 0168	0 0092	*0 3854*
6/10/2001	3.26	1 72	1.76	**2.50**	0.3565	0 0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0 0168	0.0092	*0 3854*
6/11/2001	3.26	1 72	1.76	**2.50**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
6/12/2001	3 68	2.49	2 48	**3.08**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*
6/13/2001	3 86	2 93	2 87	**3.38**	0 3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0.3854*
6/14/2001	4 07	3 07	3 00	**3.55**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0 3565	0.0030	0 0168	0 0092	*0 3854*
6/15/2001	3.77	3 06	3.12	**3.43**	0.3565	0 0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0 0092	*0 3854*
6/16/2001	3.54	2 37	2 44	**2.97**	0.3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0 0168	0 0092	*0 3854*
6/17/2001	3 54	2.37	2 44	**2.97**	0 3565	0 0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*
6/18/2001	3.54	2.37	2 44	**2.97**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*
6/19/2001	3 84	3 32	3.26	**3.56**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0 0168	0.0092	*0 3854*
6/20/2001	3 95	3 17	3 12	**3.54**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0.0168	0.0092	*0 3854*
6/21/2001	3.81	2 71	2.61	**3.23**	0.3565	0.0030	0 0344	0.0092	*0.4030*	0.3565	0.0030	0.0168	0.0092	*0 3854*
6/22/2001	3 69	2 41	2.45	**3.06**	0 3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0.0030	0 0168	0 0092	*0.3854*
6/23/2001	3 54	2 50	2 39	**2.99**	0.3565	0.0030	0.0344	0 0092	*0 4030*	0.3565	0.0030	0 0168	0.0092	*0.3854*
6/24/2001	3 54	2.50	2 39	**2.99**	0.3565	0.0030	0.0344	0 0092	*0 4030*	0.3565	0.0030	0.0168	0 0092	*0 3854*
6/25/2001	3 54	2 50	2.39	**2.99**	0.3565	0.0030	0.0344	0 0092	*0.4030*	0.3565	0 0030	0.0168	0.0092	*0 3854*
6/26/2001	3 56	2.65	2 58	**3.08**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0.3565	0 0030	0 0168	0.0092	*0 3854*
6/27/2001	3 38	2.39	2 39	**2.89**	0 3565	0.0030	0.0344	0.0092	*0 4030*	0.3565	0 0030	0.0168	0 0092	*0.3854*
6/28/2001	3.29	2.54	2.51	**2.91**	0.3565	0.0030	0 0344	0.0092	*0.4030*	0.3565	0 0030	0.0168	0.0092	*0 3854*
6/29/2001	3 09	2.43	2.48	**2.77**	0.3565	0.0030	0.0344	0.0092	*0.4030*	0 3565	0.0030	0 0168	0 0092	*0 3854*
6/30/2001	2 86	2.34	2.33	**2.60**	0.3565	0 0030	0.0344	0.0092	*0 4030*	0.3565	0.0030	0 0168	0.0092	*0 3854*

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	Average Transport Tariff on El Paso from Permian and San Juan	% Fuel Rate per MMBtu	El Paso Fuel Charge	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	Total Intrastate Transport Charges
	[redacted]		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[(9) + (14)] / 2 (15)	(16)	(4) * (16) (17)	(18)	(19)	(20)	(21)	(22)	(23)	(20)*4% + (21)*69% + (22)*9% + (23)*17% (24)	(18) + (19) + (24) (25)
5/21/2001	0.3942	3 47%	0.1131	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/22/2001	0.3942	3 47%	0.1257	0.2542	0 0003	0.1379	0 1022	0.4092	0.2797	0.1628	0.4173
5/23/2001	0.3942	3.47%	0.1273	0.2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/24/2001	0.3942	3.47%	0.1287	0.2542	0 0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/25/2001	0.3942	3 47%	0.1300	0.2542	0 0003	0 1379	0.1022	0.4092	0.2797	0 1628	0.4173
5/26/2001	0.3942	3.47%	0.1116	0 2542	0.0003	0.1379	0.1022	0.4092	0.2797	0.1628	0.4173
5/27/2001	0.3942	3 47%	0.1116	0.2542	0.0003	0 1379	0 1022	0.4092	0.2797	0.1628	0.4173
5/28/2001	0.3942	3 47%	0.1116	0.2542	0.0003	0.1379	0 1022	0 4092	0.2797	0 1628	0.4173
5/29/2001	0.3942	3 47%	0.1116	0 2542	0 0003	0.1379	0.1022	0.4092	0.2797	0 1628	0.4173
5/30/2001	0.3942	3.47%	0.1152	0 2542	0 0003	0 1379	0 1022	0.4092	0.2797	0 1628	0.4173
5/31/2001	0.3942	3.47%	0.1090	0.2542	0 0003	0 1379	0 1022	0 4092	0 2797	0.1628	0.4173
6/1/2001	0.3942	3 47%	0.1159	0.2542	0 0003	0.1186	0 0879	0.3333	0.2278	0.1361	0.3906
6/2/2001	0.3942	3.47%	0.1052	0.2542	0.0003	0.1186	0.0879	0 3333	0 2278	0.1361	0.3906
6/3/2001	0.3942	3.47%	0.1052	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/4/2001	0.3942	3.47%	0.1052	0 2542	0 0003	0.1186	0 0879	0.3333	0.2278	0.1361	0.3906
6/5/2001	0.3942	3 47%	0.1185	0 2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/6/2001	0.3942	3.47%	0.1221	0 2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/7/2001	0.3942	3.47%	0.1126	0 2542	0.0003	0.1186	0 0879	0.3333	0 2278	0.1361	0.3906
6/8/2001	0.3942	3.47%	0.1036	0.2542	0 0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/9/2001	0.3942	3.47%	0.0867	0.2542	0 0003	0 1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/10/2001	0.3942	3.47%	0.0867	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/11/2001	0.3942	3.47%	0.0867	0 2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/12/2001	0.3942	3.47%	0.1069	0.2542	0 0003	0.1186	0 0879	0 3333	0.2278	0.1361	0.3906
6/13/2001	0.3942	3.47%	0.1172	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/14/2001	0.3942	3 47%	0.1231	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/15/2001	0.3942	3.47%	0.1190	0.2542	0.0003	0.1186	0.0879	0.3333	0 2278	0 1361	0.3906
6/16/2001	0.3942	3 47%	0.1031	0.2542	0 0003	0.1186	0.0879	0.3333	0.2278	0 1361	0.3906
6/17/2001	0.3942	3 47%	0.1031	0.2542	0 0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/18/2001	0.3942	3.47%	0.1031	0 2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/19/2001	0.3942	3 47%	0.1237	0.2542	0 0003	0.1186	0.0879	0 3333	0.2278	0.1361	0.3906
6/20/2001	0.3942	3.47%	0.1230	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/21/2001	0.3942	3.47%	0.1122	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/22/2001	0.3942	3 47%	0.1062	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/23/2001	0.3942	3.47%	0.1037	0 2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/24/2001	0.3942	3 47%	0.1037	0.2542	0.0003	0.1186	0.0879	0.3333	0 2278	0.1361	0.3906
6/25/2001	0.3942	3.47%	0.1037	0.2542	0.0003	0.1186	0.0879	0.3333	0 2278	0.1361	0.3906
6/26/2001	0.3942	3 47%	0.1070	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0 1361	0.3906
6/27/2001	0.3942	3.47%	0.1001	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/28/2001	0.3942	3.47%	0.1008	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906
6/29/2001	0.3942	3.47%	0.0961	0.2542	0.0003	0.1186	0.0879	0.3333	0 2278	0.1361	0.3906
6/30/2001	0.3942	3.47%	0.0901	0.2542	0.0003	0.1186	0.0879	0.3333	0.2278	0.1361	0.3906

	Gas Daily Daily Midpoint				El Paso Tariff for CA Deliveries Under Rate Schedule FT-1									
	Permian	San Juan			Permian Deliveries					San Juan Deliveries				
Flow Date	El Paso	El Paso, Bondad	El Paso, Non-Bondad	**Average Gas Price at Permian and San Juan Basins**	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for Permian*	Reservation Charge[1]	Reservation Surcharge	Volumetric Charge	Volumetric Surcharge	*Total Transport for San Juan*
								($/MMBtu)						
				[(1) + ((2) + (3)) / 2] / 2					*(5) + (6) + (7) + (8)*					*(10) + (11) + (12) + (13)*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	*(9)*	(10)	(11)	(12)	(13)	*(14)*

Note: [1]Base charge plus reservation add-on
[2]ITCS = Interstate Transition Cost Surcharge
[3]Transported Gas Municipal Surcharge
[4]Includes plants located within the City of Long Beach

				SoCal Gas Tariff for Intrastate Transport Under Rate Schedule GT-F5 in SoCal Gas and SDG&E Service Areas							
						SoCal Gas		SDG&E			
Flow Date	**Average Transport Tariff on El Paso from Permian and San Juan**	% Fuel Rate per MMBtu	**El Paso Fuel Charge**	EG-Tier 2 Transmission	ITCS[2]	City of LA G-MSUR[3] (4% of Plant Locations)[4]	Outside City of LA G-MSUR[3] (69% of Plant Locations)	City of San Diego G-PSUR[3] (9% of Plant Locations)	Outside City of San Diego G-PSUR[3] (17% of Plant Locations)	Weighted Municipal Charge	**Total Intrastate Transport Charges**
				($/MMBtu)							
	[(9) + (14)] / 2		**(4) * (16)**							(20)*4% + (21)*69% + (22)*9% + (23)*17%	**(18) + (19) + (24)**
	(15)	(16)	**(17)**	(18)	(19)	(20)	(21)	(22)	(23)	(24)	**(25)**

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily: Daily Midpoint	PG&E. Malin to On-System Deliveries			PGT-NW. Kingsgate to Malin			ANG: Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
	($/MMBtu)												
				(2) + (3)			(5) + (6)			(8) + (9)		(4) + (7) + (10) + (11)	(1) + (12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
5/1/2000	2 74	0.4913	0.0475	0.5388	0.2800	0 0538	0 3338	0.0576	0.0055	0 0631	0 1066	1 0424	3.7872
5/2/2000	2.77	0 4913	0 0480	0.5393	0.2800	0 0543	0 3344	0.0578	0.0055	0.0633	0 1069	1.0438	3.8165
5/3/2000	2 76	0 4913	0.0477	0.5390	0 2800	0 0541	0 3341	0.0575	0.0055	0.0630	0 1063	1 0425	3 8014
5/4/2000	2.80	0.4913	0 0484	0.5397	0.2800	0.0548	0.3349	0.0572	0.0056	0.0628	0.1059	1.0432	3 8394
5/5/2000	2.70	0 4913	0 0467	0 5380	0.2800	0.0529	0.3329	0.0570	0.0054	0.0624	0 1054	1 0388	3.7363
5/6/2000	2.66	0 4913	0.0460	0.5373	0.2800	0 0521	0.3322	0.0570	0.0053	0.0623	0.1054	1 0372	3 6960
5/7/2000	2 66	0.4913	0.0460	0.5373	0 2800	0.0521	0.3322	0.0570	0.0053	0.0623	0.1054	1.0372	3 6960
5/8/2000	2 66	0.4913	0.0460	0.5373	0 2800	0.0521	0.3322	0.0570	0.0053	0.0623	0 1054	1.0372	3.6960
5/9/2000	2 70	0.4913	0 0466	0.5379	0.2800	0.0528	0.3329	0 0572	0.0054	0 0626	0.1058	1.0393	3.7358
5/10/2000	2.71	0 4913	0.0469	0.5382	0 2800	0.0531	0.3332	0.0572	0.0054	0.0626	0.1057	1 0397	3 7505
5/11/2000	2.69	0 4913	0.0466	0.5379	0.2800	0.0528	0.3329	0 0571	0.0054	0.0625	0.1056	1.0389	3.7339
5/12/2000	2 85	0.4913	0.0494	0.5407	0 2800	0.0559	0.3360	0.0573	0.0057	0.0630	0.1060	1.0457	3.8993
5/13/2000	2 86	0 4913	0 0495	0.5408	0.2800	0.0560	0.3361	0 0574	0.0057	0.0632	0 1062	1.0462	3 9052
5/14/2000	2 86	0 4913	0.0495	0.5408	0 2800	0.0560	0.3361	0.0574	0.0057	0.0632	0.1062	1 0462	3 9052
5/15/2000	2.86	0.4913	0.0495	0.5408	0.2800	0 0560	0.3361	0.0574	0.0057	0 0632	0.1062	1.0462	3.9052
5/16/2000	2.89	0.4913	0.0499	0 5412	0.2800	0.0566	0.3366	0.0573	0.0058	0.0631	0.1060	1 0470	3.9330
5/17/2000	2.94	0.4913	0 0508	0.5421	0 2800	0.0576	0.3376	0.0575	0.0059	0.0634	0.1063	1 0494	3 9884
5/18/2000	2.96	0.4913	0.0511	0 5424	0.2800	0.0579	0.3380	0 0570	0 0059	0.0629	0.1054	1.0487	4.0044
5/19/2000	3 17	0.4913	0.0548	0 5461	0.2800	0.0621	0.3421	0 0569	0 0063	0.0633	0.1053	1.0567	4.2239
5/20/2000	3 17	0.4913	0 0548	0.5461	0 2800	0.0621	0.3422	0.0571	0.0063	0.0634	0.1056	1 0573	4 2268
5/21/2000	3.17	0.4913	0.0548	0.5461	0.2800	0.0621	0.3422	0.0571	0.0063	0.0634	0 1056	1.0573	4 2268
5/22/2000	3 17	0.4913	0 0548	0 5461	0.2800	0.0621	0 3422	0 0571	0 0063	0.0634	0.1056	1.0573	4.2268
5/23/2000	3 51	0.4913	0 0607	0 5520	0 2800	0.0687	0.3488	0 0570	0 0070	0 0640	0 1054	1.0702	4 5770
5/24/2000	3 35	0 4913	0.0580	0.5493	0.2800	0.0657	0.3457	0.0568	0.0067	0.0635	0 1051	1.0635	4 4141
5/25/2000	3 44	0 4913	0.0595	0.5508	0.2800	0.0674	0.3474	0 0566	0.0069	0.0635	0.1047	1 0664	4 5040
5/26/2000	3.55	0.4913	0.0613	0.5526	0.2800	0.0695	0 3495	0.0567	0 0071	0 0638	0.1049	1.0709	4 6165
5/27/2000	3 60	0 4913	0 0623	0.5536	0 2800	0 0706	0.3506	0 0568	0.0072	0 0640	0.1050	1.0732	4 6742
5/28/2000	3.60	0 4913	0 0623	0.5536	0.2800	0.0706	0.3506	0.0568	0.0072	0.0640	0.1050	1.0732	4 6742
5/29/2000	3 60	0 4913	0 0623	0 5536	0.2800	0.0706	0.3506	0.0568	0.0072	0 0640	0.1050	1 0732	4.6742
5/30/2000	3.60	0.4913	0.0623	0.5536	0.2800	0 0706	0.3506	0 0568	0.0072	0.0640	0.1050	1 0732	4 6742
5/31/2000	3 87	0.4913	0.0670	0.5583	0 2800	0.0759	0.3560	0 0568	0.0077	0 0646	0.1051	1.0839	4.9572
6/1/2000	4 17	0.5070	0 0721	0 5791	0.2800	0 0868	0.3668	0.0571	0.0125	0 0696	0.1055	1 1209	5 2878
6/2/2000	3 78	0 5070	0.0653	0.5723	0.2800	0.0786	0.3587	0.0573	0.0113	0.0687	0.1059	1.1056	4 8807
6/3/2000	3 60	0.5070	0 0623	0.5693	0.2800	0.0750	0.3551	0 0578	0 0108	0.0686	0.1068	1 0999	4.7036
6/4/2000	3 60	0 5070	0.0623	0.5693	0.2800	0.0750	0.3551	0.0578	0.0108	0.0686	0 1068	1.0999	4.7036
6/5/2000	3.60	0 5070	0.0623	0.5693	0.2800	0.0750	0 3551	0.0578	0.0108	0.0686	0.1068	1.0999	4 7036
6/6/2000	3.66	0 5070	0 0633	0 5703	0.2800	0.0762	0.3562	0.0578	0.0110	0.0688	0.1069	1.1022	4 7609
6/7/2000	3 87	0.5070	0.0669	0.5739	0.2800	0.0806	0.3606	0.0578	0.0116	0 0694	0 1069	1 1109	4 9799
6/8/2000	3.62	0 5070	0.0626	0.5696	0.2800	0.0753	0.3554	0.0578	0.0109	0.0687	0.1068	1.1005	4 7184
6/9/2000	3 53	0.5070	0.0611	0.5681	0.2800	0.0736	0.3536	0.0578	0.0106	0.0684	0.1067	1.0968	4.6291
6/10/2000	3 64	0.5070	0.0629	0.5699	0.2800	0.0757	0.3558	0.0579	0.0109	0.0688	0.1070	1 1015	4.7386

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily Daily Midpoint	PG&E: Malin to On-System Deliveries			PGT-NW: Kingsgate to Malin			ANG. Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
							($/MMBtu)						
				(2) + (3)			(5) + (6)			(8) + (9)		(4) + (7) + (10) + (11)	(1) + (12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
6/11/2000	3 64	0 5070	0 0629	0 5699	0 2800	0.0757	0.3558	0 0579	0.0109	0 0688	0 1070	1.1015	4 7386
6/12/2000	3 64	0.5070	0.0629	0 5699	0 2800	0 0757	0.3558	0 0579	0.0109	0 0688	0 1070	1.1015	4.7386
6/13/2000	3 61	0 5070	0.0625	0.5695	0.2800	0 0752	0 3553	0.0579	0.0108	0 0687	0.1070	1 1005	4 7126
6/14/2000	3 58	0.5070	0.0620	0.5690	0.2800	0.0746	0.3546	0 0582	0.0107	0 0689	0.1075	1 1000	4.6822
6/15/2000	3 49	0 5070	0.0604	0.5674	0 2800	0 0727	0 3527	0.0582	0.0105	0.0686	0 1075	1.0962	4 5855
6/16/2000	3 68	0.5070	0.0637	0 5707	0.2800	0.0767	0.3567	0.0579	0 0110	0 0690	0.1070	1.1034	4.7852
6/17/2000	3.72	0.5070	0 0643	0 5713	0.2800	0.0775	0 3575	0.0581	0 0112	0 0693	0.1074	1 1055	4 8249
6/18/2000	3 72	0 5070	0.0643	0.5713	0.2800	0.0775	0.3575	0.0581	0.0112	0.0693	0 1074	1.1055	4.8249
6/19/2000	3.72	0 5070	0 0643	0.5713	0.2800	0 0775	0.3575	0 0581	0 0112	0.0693	0 1074	1 1055	4 8249
6/20/2000	3 61	0.5070	0.0624	0 5694	0.2800	0.0751	0 3551	0 0583	0 0108	0.0691	0.1078	1.1014	4.7078
6/21/2000	3.35	0 5070	0.0580	0.5650	0.2800	0 0698	0.3498	0.0581	0.0100	0 0682	0 1074	1.0903	4 4403
6/22/2000	3.54	0 5070	0.0612	0.5682	0.2800	0.0737	0.3537	0 0580	0.0106	0.0687	0.1072	1.0978	4.6364
6/23/2000	3.81	0 5070	0 0659	0 5729	0 2800	0.0794	0.3594	0.0581	0.0114	0.0695	0.1073	1 1091	4.9209
6/24/2000	3.54	0.5070	0.0613	0.5683	0.2800	0.0738	0.3539	0.0578	0.0106	0.0684	0.1068	1.0974	4 6421
6/25/2000	3 54	0 5070	0 0613	0.5683	0.2800	0 0738	0.3539	0.0578	0.0106	0.0684	0.1068	1.0974	4 6421
6/26/2000	3.54	0.5070	0 0613	0 5683	0.2800	0.0738	0.3539	0 0578	0.0106	0.0684	0.1068	1 0974	4.6421
6/27/2000	3.57	0 5070	0.0617	0.5687	0 2800	0.0743	0.3543	0.0576	0.0107	0.0683	0.1065	1.0979	4.6658
6/28/2000	3.75	0.5070	0.0648	0.5718	0.2800	0.0780	0.3581	0.0577	0.0112	0.0689	0.1065	1.1053	4.8523
6/29/2000	3 71	0.5070	0.0642	0 5712	0.2800	0.0772	0.3573	0.0576	0.0111	0.0687	0.1065	1 1036	4 8117
6/30/2000	3.58	0 5070	0.0620	0 5690	0.2800	0.0746	0.3547	0.0577	0.0108	0.0684	0.1066	1.0987	4 6832
7/1/2000	3 60	0.5112	0.0622	0.5734	0.2800	0.0947	0.3748	0.0578	0.0252	0.0830	0.1067	1 1379	4.7349
7/2/2000	3.60	0.5112	0.0622	0.5734	0.2800	0.0947	0.3748	0 0578	0.0252	0.0830	0.1067	1.1379	4.7349
7/3/2000	3.60	0.5112	0.0622	0.5734	0.2800	0.0947	0.3748	0.0578	0.0252	0.0830	0.1067	1.1379	4.7349
7/4/2000	3 60	0.5112	0.0622	0.5734	0.2800	0.0948	0.3748	0.0578	0 0252	0.0830	0.1068	1.1380	4.7362
7/5/2000	3 60	0.5112	0.0622	0 5734	0.2800	0.0948	0.3748	0.0578	0.0252	0.0830	0.1068	1.1380	4.7362
7/6/2000	3 35	0 5112	0.0580	0.5692	0.2800	0 0882	0.3683	0.0574	0.0235	0.0808	0.1059	1 1242	4.4750
7/7/2000	3 34	0.5112	0.0578	0.5690	0.2800	0.0880	0.3681	0.0576	0 0234	0.0810	0.1064	1.1245	4.4673
7/8/2000	3 19	0 5112	0.0552	0.5664	0.2800	0 0841	0.3641	0.0578	0 0223	0.0801	0.1067	1.1173	4.3088
7/9/2000	3.19	0 5112	0 0552	0.5664	0.2800	0.0841	0.3641	0.0578	0.0223	0 0801	0.1067	1 1173	4.3088
7/10/2000	3.19	0.5112	0.0552	0.5664	0 2800	0.0841	0.3641	0.0578	0.0223	0 0801	0.1067	1 1173	4.3088
7/11/2000	3 43	0.5112	0 0593	0 5705	0.2800	0.0902	0.3703	0 0578	0.0240	0 0818	0 1067	1 1293	4 5551
7/12/2000	3 35	0 5112	0.0579	0.5691	0.2800	0.0881	0.3682	0.0579	0 0234	0.0813	0 1068	1.1254	4 4722
7/13/2000	3.48	0 5112	0.0602	0 5714	0.2800	0.0917	0.3718	0 0577	0 0244	0.0821	0.1066	1 1319	4 6144
7/14/2000	3 33	0.5112	0.0576	0.5688	0.2800	0 0876	0.3677	0.0578	0.0233	0.0810	0.1067	1 1241	4 4512
7/15/2000	3.38	0 5112	0.0585	0.5697	0.2800	0.0890	0.3690	0.0576	0 0237	0.0813	0.1064	1.1264	4.5058
7/16/2000	3 38	0 5112	0.0585	0 5697	0.2800	0.0890	0.3690	0.0576	0 0237	0.0813	0.1064	1 1264	4 5058
7/17/2000	3.38	0 5112	0.0585	0.5697	0.2800	0.0890	0.3690	0.0576	0 0237	0.0813	0.1064	1.1264	4 5058
7/18/2000	3.16	0 5112	0.0546	0 5658	0.2800	0.0832	0.3632	0 0577	0.0221	0 0799	0 1066	1.1156	4 2744
7/19/2000	3 03	0.5112	0.0524	0.5636	0 2800	0.0798	0.3598	0.0579	0.0212	0.0791	0.1069	1 1094	4 1390
7/20/2000	3 17	0.5112	0.0549	0.5661	0.2800	0.0835	0.3635	0.0580	0.0222	0.0802	0.1070	1 1168	4 2874
7/21/2000	3.04	0.5112	0.0525	0.5637	0.2800	0.0800	0.3600	0.0580	0.0213	0 0793	0 1071	1.1101	4 1470

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily: Daily Midpoint	PG&E. Malin to On-System Deliveries			PGT-NW: Kingsgate to Malin			ANG: Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
	($/MMBtu)												
				(2) + (3)			(5) + (6)			(8) + (9)		(4) + (7) + (10) + (11)	(1) + (12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
7/22/2000	3 04	0 5112	0 0527	0.5639	0 2800	0 0802	0.3602	0.0581	0 0213	0 0794	0.1073	1.1108	4 1545
7/23/2000	3 04	0.5112	0.0527	0 5639	0.2800	0.0802	0.3602	0.0581	0.0213	0.0794	0 1073	1.1108	4.1545
7/24/2000	3.04	0.5112	0 0527	0.5639	0.2800	0.0802	0 3602	0.0581	0 0213	0.0794	0.1073	1.1108	4 1545
7/25/2000	2.81	0.5112	0 0486	0.5598	0.2800	0.0739	0.3540	0.0584	0 0197	0.0781	0.1079	1.0997	3 9069
7/26/2000	2 92	0.5112	0 0506	0.5618	0.2800	0.0770	0.3570	0 0584	0.0205	0 0788	0.1078	1 1054	4 0288
7/27/2000	2 91	0.5112	0.0504	0.5616	0 2800	0.0767	0 3568	0 0583	0.0204	0.0787	0.1077	1.1048	4 0185
7/28/2000	3 04	0.5112	0.0525	0.5637	0.2800	0 0800	0.3600	0 0581	0 0213	0.0794	0.1074	1.1105	4 1474
7/29/2000	3.06	0 5112	0 0529	0 5641	0 2800	0 0806	0 3606	0.0579	0.0214	0.0793	0.1069	1.1110	4.1706
7/30/2000	3.06	0.5112	0 0529	0.5641	0.2800	0 0806	0.3606	0.0579	0.0214	0 0793	0 1069	1.1110	4 1706
7/31/2000	3.06	0.5112	0 0529	0.5641	0.2800	0.0806	0.3606	0 0579	0 0214	0.0793	0.1069	1.1110	4 1706
8/1/2000	2.99	0.5213	0.0517	0 5730	0.2800	0.0860	0.3661	0.0574	0.0239	0 0814	0.1062	1.1266	4 1152
8/2/2000	3.04	0.5213	0 0525	0.5738	0.2800	0.0874	0 3674	0.0574	0.0243	0 0817	0 1061	1.1290	4 1648
8/3/2000	3.19	0 5213	0 0551	0.5764	0.2800	0.0918	0.3718	0.0577	0.0255	0.0832	0.1066	1.1381	4.3254
8/4/2000	3 31	0.5213	0 0572	0 5785	0.2800	0 0951	0 3752	0 0576	0.0264	0 0840	0 1064	1 1441	4 4491
8/5/2000	3.24	0 5213	0.0561	0.5774	0.2800	0.0933	0.3734	0.0574	0 0259	0.0833	0.1061	1 1402	4 3821
8/6/2000	3.24	0.5213	0.0561	0.5774	0 2800	0 0933	0 3734	0.0574	0.0259	0 0833	0.1061	1.1402	4.3821
8/7/2000	3.24	0 5213	0 0561	0.5774	0.2800	0.0933	0.3734	0.0574	0.0259	0.0833	0 1061	1 1402	4 3821
8/8/2000	3.24	0.5213	0.0561	0.5774	0.2800	0.0934	0.3735	0.0575	0.0260	0.0834	0 1062	1.1405	4.3855
8/9/2000	3.19	0.5213	0.0552	0 5765	0.2800	0 0919	0 3719	0.0574	0.0255	0.0829	0.1061	1.1375	4.3298
8/10/2000	3 07	0 5213	0.0532	0.5745	0.2800	0.0885	0.3685	0 0576	0.0246	0.0822	0.1064	1.1315	4.2047
8/11/2000	2.88	0.5213	0.0498	0.5711	0.2800	0.0829	0.3629	0.0577	0.0230	0.0807	0.1065	1.1212	3.9998
8/12/2000	2.91	0.5213	0 0504	0.5717	0.2800	0.0838	0.3639	0.0576	0.0233	0.0809	0.1064	1.1229	4.0344
8/13/2000	2.91	0.5213	0 0504	0 5717	0.2800	0 0838	0.3639	0 0576	0.0233	0.0809	0.1064	1 1229	4.0344
8/14/2000	2.91	0 5213	0.0504	0.5717	0.2800	0.0838	0.3639	0.0576	0.0233	0.0809	0.1064	1.1229	4.0344
8/15/2000	2.94	0 5213	0.0508	0.5721	0.2800	0.0846	0.3646	0.0576	0 0235	0.0811	0.1064	1.1242	4.0626
8/16/2000	2 97	0.5213	0 0514	0.5727	0.2800	0.0856	0.3656	0.0575	0.0238	0.0813	0.1062	1 1259	4.0987
8/17/2000	3.08	0.5213	0.0533	0.5746	0.2800	0.0887	0.3688	0.0579	0.0247	0.0825	0.1069	1.1328	4 2143
8/18/2000	3.32	0.5213	0.0575	0.5788	0.2800	0.0957	0.3757	0.0579	0.0266	0 0845	0.1070	1.1461	4.4702
8/19/2000	3.38	0.5213	0.0585	0.5798	0.2800	0.0974	0.3775	0 0580	0.0271	0.0850	0.1071	1.1495	4.5335
8/20/2000	3.38	0.5213	0.0585	0.5798	0.2800	0.0974	0.3775	0.0580	0.0271	0.0850	0.1071	1.1495	4.5335
8/21/2000	3.38	0.5213	0.0585	0.5798	0.2800	0 0974	0.3775	0.0580	0 0271	0.0850	0.1071	1 1495	4.5335
8/22/2000	3.48	0.5213	0.0602	0 5815	0.2800	0.1002	0.3802	0.0579	0.0278	0.0857	0.1070	1.1544	4.6344
8/23/2000	3 46	0 5213	0.0599	0.5812	0.2800	0.0997	0.3798	0 0579	0.0277	0.0856	0.1070	1.1537	4.6179
8/24/2000	3 33	0.5213	0.0576	0.5789	0.2800	0.0958	0.3759	0.0575	0.0266	0.0841	0.1062	1.1451	4.4747
8/25/2000	3.10	0.5213	0 0537	0.5750	0.2800	0.0894	0.3694	0.0575	0.0248	0.0823	0.1062	1.1329	4 2369
8/26/2000	3.16	0.5213	0.0546	0.5759	0.2800	0.0908	0.3709	0.0576	0 0252	0 0829	0.1065	1.1362	4.2918
8/27/2000	3.16	0 5213	0.0546	0.5759	0.2800	0.0908	0.3709	0.0576	0.0252	0.0829	0.1065	1.1362	4.2918
8/28/2000	3.16	0.5213	0.0546	0.5759	0.2800	0.0908	0.3709	0.0576	0.0252	0.0829	0.1065	1.1362	4.2918
8/29/2000	3.37	0.5213	0.0583	0.5796	0.2800	0.0971	0.3771	0.0576	0.0270	0.0846	0.1064	1.1477	4.5201
8/30/2000	3.50	0.5213	0.0605	0.5818	0.2800	0.1007	0.3808	0.0575	0.0280	0.0855	0.1062	1.1543	4 6527
8/31/2000	3.78	0.5213	0.0654	0.5867	0.2800	0.1088	0.3889	0.0577	0.0302	0.0880	0.1067	1.1703	4 9508

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily Daily Midpoint	PG&E Malin to On-System Deliveries			PGT-NW Kingsgate to Malin			ANG: Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
							($/MMBtu)						
	(1)	(2)	(3)	(2) + (3) (4)	(5)	(6)	(5) + (6) (7)	(8)	(9)	(8) + (9) (10)	(11)	(4) + (7) + (10) + (11) (12)	(1) + (12) (13)
9/1/2000	4 05	0 5151	0.0701	0 5852	0.2800	0 1167	0.3967	0.0581	0.0365	0 0945	0 1073	1.1838	5 2370
9/2/2000	4 02	0.5151	0.0695	0.5846	0.2800	0.1157	0.3957	0.0580	0 0362	0 0942	0 1071	1 1816	5 2002
9/3/2000	4.02	0 5151	0.0695	0 5846	0 2800	0.1157	0.3957	0 0580	0.0362	0.0942	0.1071	1 1816	5 2002
9/4/2000	4.02	0 5151	0.0695	0.5846	0.2800	0.1157	0 3957	0.0580	0 0362	0.0942	0.1071	1.1816	5 2002
9/5/2000	4 02	0 5151	0 0695	0.5846	0.2800	0.1157	0 3957	0 0580	0.0362	0.0942	0 1071	1.1816	5.2002
9/6/2000	4 39	0 5151	0 0760	0 5911	0 2800	0.1265	0 4066	0.0579	0 0396	0.0975	0.1071	1.2023	5.5971
9/7/2000	4 56	0 5151	0.0789	0 5940	0.2800	0 1313	0.4113	0 0576	0.0410	0 0986	0.1064	1 2103	5 7702
9/8/2000	4.31	0.5151	0 0745	0.5896	0.2800	0 1240	0 4041	0 0578	0.0388	0 0966	0 1069	1 1972	5 5062
9/9/2000	4 28	0 5151	0.0740	0.5891	0 2800	0 1232	0 4032	0.0578	0.0385	0.0963	0 1069	1.1956	5.4748
9/10/2000	4 28	0 5151	0.0740	0 5891	0.2800	0 1232	0 4032	0 0578	0.0385	0 0963	0.1069	1 1956	5 4748
9/11/2000	4 28	0 5151	0 0740	0 5891	0 2800	0 1232	0 4032	0 0578	0.0385	0 0963	0 1069	1.1956	5.4748
9/12/2000	4 40	0.5151	0 0762	0 5913	0.2800	0.1267	0 4068	0.0578	0 0396	0 0974	0 1067	1.2021	5 6041
9/13/2000	4 42	0 5151	0 0765	0 5916	0 2800	0.1272	0.4073	0.0577	0 0398	0 0974	0.1065	1 2028	5 6223
9/14/2000	4 50	0 5151	0 0779	0.5930	0.2800	0.1296	0.4096	0.0576	0 0405	0.0981	0 1065	1 2072	5.7081
9/15/2000	4 59	0.5151	0.0794	0 5945	0 2800	0 1321	0 4121	0 0575	0.0413	0 0988	0 1062	1.2116	5 7989
9/16/2000	4 75	0 5151	0.0821	0 5972	0 2800	0 1367	0.4167	0 0576	0 0427	0 1003	0.1064	1.2207	5 9686
9/17/2000	4 75	0.5151	0 0821	0.5972	0.2800	0.1367	0.4167	0.0576	0.0427	0 1003	0.1064	1.2207	5 9686
9/18/2000	4 75	0 5151	0 0821	0.5972	0.2800	0.1367	0.4167	0 0576	0.0427	0 1003	0 1064	1 2207	5.9686
9/19/2000	4.52	0.5151	0 0783	0 5934	0.2800	0.1302	0 4103	0 0573	0 0407	0 0981	0.1060	1 2076	5.7308
9/20/2000	4 60	0.5151	0.0796	0 5947	0.2800	0.1325	0.4125	0.0574	0.0414	0.0989	0.1062	1.2122	5.8139
9/21/2000	4 41	0.5151	0.0764	0.5915	0.2800	0.1270	0.4071	0.0576	0.0397	0.0973	0.1065	1.2024	5 6159
9/22/2000	4 60	0 5151	0 0795	0 5946	0.2800	0 1323	0.4124	0.0575	0.0414	0.0988	0.1062	1 2120	5 8088
9/23/2000	4 62	0 5151	0.0800	0.5951	0.2800	0 1331	0.4131	0.0574	0.0416	0.0990	0.1061	1 2133	5.8360
9/24/2000	4.62	0.5151	0.0800	0.5951	0 2800	0.1331	0 4131	0 0574	0.0416	0.0990	0.1061	1.2133	5.8360
9/25/2000	4 62	0 5151	0.0800	0 5951	0.2800	0.1331	0.4131	0.0574	0 0416	0.0990	0.1061	1.2133	5 8360
9/26/2000	4 56	0.5151	0.0789	0 5940	0.2800	0.1314	0 4114	0.0574	0.0411	0 0985	0.1061	1.2100	5.7732
9/27/2000	4 57	0.5151	0.0791	0 5942	0.2800	0.1315	0.4116	0.0574	0.0411	0.0986	0.1062	1.2105	5 7803
9/28/2000	4 65	0.5151	0.0805	0 5956	0.2800	0.1339	0.4139	0.0571	0.0419	0 0990	0.1056	1.2140	5.8645
9/29/2000	4.69	0 5151	0.0811	0 5962	0 2800	0.1350	0.4150	0.0569	0.0422	0 0991	0.1051	1 2154	5 9046
9/30/2000	4.64	0 5151	0.0802	0.5953	0 2800	0.1335	0.4136	0.0567	0 0417	0 0985	0.1048	1.2122	5 8504
10/1/2000	4.64	0.5207	0 0626	0 5833	0.2800	0.1335	0.4136	0 0567	0.0510	0.1078	0.1048	1 2095	5 8476
10/2/2000	4 63	0 5207	0.0625	0.5832	0.2800	0.1332	0 4132	0.0566	0 0509	0.1075	0.1046	1.2084	5.8349
10/3/2000	4.66	0.5207	0.0629	0.5836	0.2800	0.1341	0.4142	0 0568	0.0512	0.1080	0.1049	1 2107	5.8694
10/4/2000	4.78	0 5207	0.0645	0 5852	0.2800	0.1375	0.4175	0.0570	0.0525	0.1096	0.1054	1.2176	5.9932
10/5/2000	4.78	0.5207	0.0645	0.5852	0.2800	0 1376	0.4176	0.0572	0.0526	0.1098	0.1056	1.2183	5 9983
10/6/2000	4.67	0.5207	0 0630	0.5837	0.2800	0 1344	0.4145	0.0570	0 0514	0 1083	0.1052	1.2118	5 8816
10/7/2000	4 42	0.5207	0.0596	0.5803	0 2800	0.1271	0.4072	0.0570	0 0486	0.1055	0.1052	1.1982	5.6148
10/8/2000	4.42	0.5207	0.0596	0.5803	0.2800	0.1271	0.4072	0.0570	0.0486	0.1055	0 1052	1.1982	5.6148
10/9/2000	4.42	0.5207	0 0596	0.5803	0.2800	0.1271	0 4072	0.0570	0.0486	0.1055	0.1052	1.1982	5.6148
10/10/2000	4.42	0.5207	0 0597	0.5804	0.2800	0.1273	0.4074	0.0570	0.0487	0 1056	0.1052	1.1986	5 6222
10/11/2000	4.50	0.5207	0.0608	0.5815	0.2800	0.1296	0.4097	0.0568	0.0495	0.1064	0.1050	1.2025	5.7053

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily: Daily Midpoint	PG&E: Malin to On-System Deliveries			PGT-NW. Kingsgate to Malin			ANG: Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
							($/MMBtu)						
				(2) + (3)			(5) + (6)			(8) + (9)		(4) + (7) + (10) + (11)	(1) + (12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
10/12/2000	4 55	0 5207	0 0614	0 5821	0 2800	0.1310	0 4110	0 0567	0.0500	0.1067	0.1047	1.2046	5.7542
10/13/2000	4 88	0 5207	0.0659	0.5866	0.2800	0.1406	0.4206	0.0565	0.0537	0.1102	0.1044	1 2218	6.1050
10/14/2000	4.71	0 5207	0 0636	0 5843	0 2800	0 1355	0 4156	0.0563	0.0518	0.1081	0.1040	1.2118	5.9195
10/15/2000	4.71	0.5207	0 0636	0.5843	0.2800	0.1355	0.4156	0.0563	0.0518	0.1081	0.1040	1.2118	5 9195
10/16/2000	4 71	0 5207	0 0636	0.5843	0.2800	0.1355	0.4156	0 0563	0.0518	0.1081	0 1040	1.2118	5.9195
10/17/2000	4 79	0 5207	0.0647	0.5854	0.2800	0 1379	0.4180	0 0563	0 0527	0.1090	0.1040	1 2164	6 0074
10/18/2000	4 81	0.5207	0.0649	0 5856	0 2800	0.1385	0.4185	0 0563	0.0529	0.1092	0.1039	1.2172	6 0275
10/19/2000	4 91	0 5207	0.0663	0.5870	0 2800	0.1414	0 4214	0 0566	0.0540	0.1106	0.1045	1.2236	6.1351
10/20/2000	4 58	0 5207	0 0619	0.5826	0 2800	0.1320	0.4120	0 0566	0.0504	0.1070	0 1045	1.2061	5.7909
10/21/2000	4.41	0 5207	0 0595	0.5802	0.2800	0.1269	0 4069	0 0567	0 0485	0 1052	0.1047	1 1971	5 6048
10/22/2000	4.41	0 5207	0.0595	0 5802	0 2800	0.1269	0.4069	0.0567	0.0485	0.1052	0 1047	1.1971	5 6048
10/23/2000	4.41	0.5207	0 0595	0 5802	0 2800	0.1269	0 4069	0.0567	0.0485	0 1052	0 1047	1.1971	5 6048
10/24/2000	4 38	0.5207	0 0592	0.5799	0.2800	0 1262	0 4062	0 0566	0 0482	0.1048	0 1045	1 1953	5 5780
10/25/2000	4 38	0 5207	0 0591	0.5798	0 2800	0 1260	0 4060	0.0564	0.0481	0.1045	0 1042	1 1945	5 5709
10/26/2000	4 24	0 5207	0.0572	0 5779	0 2800	0.1220	0.4020	0 0563	0.0466	0.1029	0 1040	1 1869	5.4246
10/27/2000	4 11	0.5207	0 0555	0.5762	0.2800	0 1183	0.3983	0 0560	0 0452	0.1012	0 1034	1.1791	5.2888
10/28/2000	3.99	0 5207	0 0538	0 5745	0 2800	0 1147	0.3948	0.0558	0.0439	0.0997	0 1032	1.1722	5.1585
10/29/2000	3.99	0 5207	0 0538	0 5745	0.2800	0 1147	0.3948	0.0558	0 0439	0.0997	0 1032	1 1722	5 1585
10/30/2000	3 99	0 5207	0.0538	0 5745	0.2800	0.1147	0 3948	0.0558	0 0439	0.0997	0.1032	1.1722	5 1585
10/31/2000	4.10	0 5207	0 0554	0.5761	0 2800	0 1181	0.3982	0.0560	0.0451	0.1011	0.1034	1 1788	5 2821
11/1/2000	4 02	0.5358	0.0543	0.5901	0.2788	0 1158	0.3946	0.0560	0.0523	0.1083	0.1035	1 1965	5.2196
11/2/2000	3 89	0.5358	0.0525	0 5883	0.2788	0.1120	0.3908	0.0558	0 0506	0.1064	0.1030	1.1885	5.0796
11/3/2000	4.06	0 5358	0 0548	0.5906	0.2788	0 1169	0 3957	0.0557	0.0528	0.1085	0.1029	1.1978	5 2605
11/4/2000	4 12	0.5358	0.0557	0.5915	0.2788	0 1187	0.3974	0 0559	0.0536	0.1095	0 1032	1.2015	5.3239
11/5/2000	4.12	0.5358	0.0557	0 5915	0.2788	0.1187	0 3974	0.0559	0.0536	0 1095	0.1032	1 2015	5 3239
11/6/2000	4 12	0 5358	0 0557	0 5915	0.2788	0 1187	0 3974	0.0559	0 0536	0.1095	0.1032	1 2015	5.3239
11/7/2000	4.25	0 5358	0.0574	0 5932	0 2788	0.1224	0.4011	0.0558	0.0553	0 1111	0.1031	1.2085	5 4591
11/8/2000	4.44	0.5358	0.0599	0 5957	0 2788	0 1278	0.4066	0.0554	0.0577	0 1131	0.1024	1.2178	5.6583
11/9/2000	4 78	0 5358	0 0646	0.6004	0.2788	0.1377	0.4164	0 0553	0 0622	0.1175	0.1022	1.2365	6 0185
11/10/2000	5.11	0.5358	0 0691	0.6049	0.2788	0.1472	0.4260	0.0553	0.0665	0 1218	0.1022	1.2548	6.3697
11/11/2000	4 87	0 5358	0 0658	0 6016	0 2788	0.1402	0.4190	0.0553	0.0633	0.1186	0 1021	1 2413	6.1136
11/12/2000	4 87	0 5358	0 0658	0.6016	0 2788	0 1402	0.4190	0 0553	0 0633	0 1186	0.1021	1 2413	6 1136
11/13/2000	4.87	0 5358	0.0658	0.6016	0.2788	0.1402	0.4190	0.0553	0 0633	0 1186	0.1021	1.2413	6.1136
11/14/2000	5 16	0.5358	0 0696	0 6054	0.2788	0.1485	0.4272	0.0554	0.0670	0 1224	0 1023	1 2573	6 4148
11/15/2000	5 00	0.5358	0.0674	0.6032	0.2788	0.1438	0.4226	0 0552	0 0650	0 1201	0.1019	1.2479	6.2441
11/16/2000	5 21	0.5358	0.0703	0 6061	0.2788	0.1499	0 4286	0 0551	0.0677	0 1228	0.1018	1 2592	6 4655
11/17/2000	5.21	0 5358	0 0704	0 6062	0 2788	0.1501	0.4289	0 0548	0.0678	0 1226	0 1013	1.2589	6 4733
11/18/2000	4 89	0 5358	0.0660	0.6018	0 2788	0 1407	0.4195	0 0548	0.0636	0 1184	0 1013	1.2410	6 1299
11/19/2000	4 89	0 5358	0 0660	0 6018	0.2788	0.1407	0.4195	0.0548	0.0636	0.1184	0 1013	1 2410	6.1299
11/20/2000	4 89	0.5358	0.0660	0.6018	0.2788	0.1407	0.4195	0.0548	0 0636	0.1184	0 1013	1 2410	6 1299
11/21/2000	5.40	0.5358	0.0729	0.6087	0.2788	0 1555	0.4343	0 0550	0.0702	0.1252	0 1016	1 2698	6 6730

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily: Daily Midpoint	PG&E: Malin to On-System Deliveries			PGT-NW: Kingsgate to Malin			ANG: Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
	($/MMBtu)												
	(1)	(2)	(3)	(2) + (3) (4)	(5)	(6)	(5) + (6) (7)	(8)	(9)	(8) + (9) (10)	(11)	(4) + (7) + (10) + (11) (12)	(1) + (12) (13)
11/22/2000	5 55	0 5358	0.0749	0 6107	0 2788	0.1597	0.4384	0.0553	0 0721	0.1274	0.1021	1.2786	6.8256
11/23/2000	5.36	0 5358	0 0723	0.6081	0.2788	0.1542	0 4329	0.0555	0.0696	0.1252	0.1026	1.2688	6.6242
11/24/2000	5.36	0.5358	0 0723	0.6081	0.2788	0.1542	0 4329	0 0555	0 0696	0.1252	0.1026	1.2688	6.6242
11/25/2000	5 37	0.5358	0 0725	0.6083	0.2788	0.1546	0.4334	0.0557	0.0698	0 1256	0 1029	1 2702	6 6424
11/26/2000	5 37	0 5358	0.0725	0.6083	0 2788	0 1546	0.4334	0.0557	0.0698	0.1256	0.1029	1 2702	6.6424
11/27/2000	5.37	0 5358	0.0725	0.6083	0.2788	0.1546	0.4334	0.0557	0.0698	0 1256	0.1029	1.2702	6.6424
11/28/2000	5.60	0 5358	0.0757	0.6115	0.2788	0 1613	0.4401	0.0556	0.0729	0.1285	0.1028	1.2828	6 8872
11/29/2000	5 29	0.5358	0.0714	0.6072	0.2788	0.1522	0.4310	0 0555	0.0687	0 1242	0.1025	1 2649	6.5522
11/30/2000	5 45	0 5358	0.0735	0.6093	0 2788	0.1567	0 4355	0 0557	0 0708	0 1265	0.1029	1 2742	6 7195
12/1/2000	5.68	0 5382	0.0767	0.6149	0.2788	0.1635	0 4423	0.0555	0.0795	0.1351	0 1026	1.2949	6 9750
12/2/2000	6 00	0 5382	0.0810	0 6192	0 2788	0.1727	0.4515	0.0553	0.0840	0 1393	0.1022	1.3121	7 3116
12/3/2000	6 00	0.5382	0.0810	0 6192	0.2788	0.1727	0.4515	0.0553	0.0840	0.1393	0.1022	1.3121	7.3116
12/4/2000	6 00	0 5382	0 0810	0 6192	0.2788	0.1727	0.4515	0 0553	0.0840	0.1393	0.1022	1.3121	7.3116
12/5/2000	6.71	0 5382	0.0906	0.6288	0.2788	0.1932	0.4719	0 0554	0.0940	0.1493	0 1023	1.3524	8.0635
12/6/2000	7.26	0.5382	0.0981	0.6363	0 2788	0.2091	0.4879	0.0558	0.1017	0.1575	0.1031	1.3847	8 6488
12/7/2000	7 75	0.5382	0 1046	0 6428	0.2788	0.2230	0.5018	0.0562	0.1085	0.1646	0.1038	1.4130	9 1615
12/8/2000	7.78	0 5382	0 1050	0 6432	0.2788	0.2238	0.5026	0.0562	0 1088	0.1651	0.1039	1.4147	9 1897
12/9/2000	7.70	0.5382	0.1040	0.6422	0 2788	0.2218	0.5005	0.0561	0.1079	0.1640	0.1037	1.4105	9.1154
12/10/2000	7 70	0.5382	0.1040	0 6422	0.2788	0 2218	0.5005	0.0561	0.1079	0.1640	0.1037	1.4105	9 1154
12/11/2000	7 70	0.5382	0 1040	0.6422	0 2788	0.2218	0.5005	0.0561	0.1079	0.1640	0.1037	1.4105	9.1154
12/12/2000	10 49	0 5382	0.1416	0.6798	0.2788	0.3019	0 5807	0 0561	0.1468	0.2029	0.1036	1 5670	12.0560
12/13/2000	8.30	0.5382	0.1120	0.6502	0 2788	0.2389	0.5176	0 0562	0.1162	0.1724	0.1039	1 4442	9 7431
12/14/2000	7 57	0.5382	0.1022	0.6404	0 2788	0 2179	0.4966	0 0564	0.1060	0.1623	0.1042	1.4035	8 9729
12/15/2000	7 44	0.5382	0.1005	0 6387	0.2788	0.2143	0.4931	0.0563	0.1042	0.1606	0.1041	1.3965	8 8412
12/16/2000	8.22	0.5382	0.1110	0.6492	0.2788	0.2367	0.5155	0.0560	0 1151	0 1712	0.1036	1 4394	9.6633
12/17/2000	8.22	0 5382	0 1110	0 6492	0 2788	0.2367	0.5155	0.0560	0.1151	0 1712	0.1036	1.4394	9.6633
12/18/2000	8 22	0.5382	0.1110	0 6492	0.2788	0.2367	0.5155	0.0560	0 1151	0.1712	0.1036	1 4394	9.6633
12/19/2000	8.29	0.5382	0 1120	0 6502	0.2788	0.2387	0.5175	0.0562	0.1161	0.1723	0.1038	1.4437	9.7379
12/20/2000	8.46	0.5382	0.1142	0.6524	0.2788	0.2434	0.5222	0 0562	0.1184	0.1746	0.1038	1 4529	9.9093
12/21/2000	9 41	0.5382	0 1270	0.6652	0 2788	0 2709	0.5497	0.0563	0.1318	0.1880	0.1040	1.5070	10.9181
12/22/2000	9.69	0 5382	0.1309	0.6691	0.2788	0 2790	0.5578	0 0564	0 1357	0.1921	0.1041	1 5230	11 2159
12/23/2000	9.12	0 5382	0.1231	0 6613	0.2788	0.2624	0.5411	0 0566	0.1276	0.1842	0.1046	1.4912	10.6066
12/24/2000	9.12	0.5382	0 1231	0.6613	0.2788	0.2624	0.5411	0.0566	0.1276	0 1842	0.1046	1 4912	10 6066
12/25/2000	9.12	0.5382	0.1231	0.6613	0.2788	0.2624	0.5411	0.0566	0.1276	0.1842	0 1046	1.4912	10 6066
12/26/2000	9 12	0.5382	0.1231	0.6613	0.2788	0.2624	0.5411	0.0566	0.1276	0.1842	0 1046	1.4912	10 6066
12/27/2000	9 13	0 5382	0.1232	0.6614	0.2788	0.2628	0.5416	0 0566	0.1278	0.1844	0 1045	1.4919	10 6216
12/28/2000	9.16	0.5382	0.1236	0.6618	0.2788	0.2636	0.5424	0.0567	0.1282	0.1849	0.1048	1 4940	10.6530
12/29/2000	8 94	0 5382	0.1207	0.6589	0.2788	0.2573	0.5361	0.0570	0.1251	0.1822	0.1053	1.4825	10 4218
12/30/2000	9.44	0.5382	0.1275	0.6657	0.2788	0.2719	0 5506	0.0571	0.1322	0.1894	0 1056	1.5113	10 9562
12/31/2000	9.44	0 5382	0.1275	0.6657	0.2788	0.2719	0.5506	0 0571	0 1322	0.1894	0 1056	1.5113	10 9562
1/1/2001	9.44	0 5749	0.1275	0.7024	0.2749	0.2950	0.5700	0.0569	0.1322	0.1891	0.1056	1.5670	11 0120

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily: Daily Midpoint	PG&E. Malin to On-System Deliveries			PGT-NW. Kingsgate to Malin			ANG. Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
							($/MMBtu)						
				(2) + (3)			(5) + (6)			(8) + (9)		(4) + (7) + (10) + (11)	(1) + (12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1/2/2001	9 44	0.5749	0 1275	0 7024	0.2749	0.2950	0.5700	0.0569	0.1322	0.1891	0.1056	1.5670	11.0120
1/3/2001	8.49	0 5749	0.1146	0.6895	0.2749	0.2651	0.5400	0.0568	0 1188	0.1756	0 1054	1 5105	9.9963
1/4/2001	7.83	0 5749	0.1057	0.6806	0 2749	0.2447	0.5196	0.0568	0.1097	0 1664	0.1054	1 4721	9 3049
1/5/2001	7 88	0 5749	0.1064	0.6813	0.2749	0.2462	0.5212	0 0567	0.1104	0.1671	0.1053	1 4749	9 3581
1/6/2001	8.52	0.5749	0.1150	0.6899	0 2749	0.2662	0 5411	0.0569	0.1193	0.1762	0.1057	1 5130	10 0345
1/7/2001	8 52	0 5749	0.1150	0.6899	0.2749	0 2662	0 5411	0.0569	0.1193	0 1762	0.1057	1.5130	10.0345
1/8/2001	8 52	0 5749	0 1150	0.6899	0 2749	0 2662	0.5411	0 0569	0.1193	0.1762	0.1057	1.5130	10 0345
1/9/2001	8 98	0.5749	0 1212	0.6961	0.2749	0.2805	0 5555	0.0568	0 1257	0.1826	0.1055	1 5396	10 5203
1/10/2001	9 06	0 5749	0.1223	0 6972	0.2749	0 2830	0.5579	0 0568	0.1268	0.1836	0 1054	1 5441	10.6042
1/11/2001	9.01	0 5749	0 1216	0 6965	0.2749	0 2813	0 5562	0 0568	0 1261	0.1829	0 1055	1.5411	10.5469
1/12/2001	8 24	0.5749	0 1112	0 6861	0 2749	0 2574	0.5323	0 0569	0.1154	0.1722	0.1055	1 4962	9 7368
1/13/2001	7 94	0.5749	0.1072	0.6821	0.2749	0.2480	0.5229	0.0566	0.1111	0.1677	0 1050	1.4778	9 4168
1/14/2001	7 94	0.5749	0.1072	0.6821	0 2749	0.2480	0 5229	0.0566	0.1111	0.1677	0.1050	1.4778	9 4168
1/15/2001	7 94	0 5749	0.1072	0.6821	0 2749	0 2480	0 5229	0.0566	0 1111	0 1677	0.1050	1.4778	9.4168
1/16/2001	7.94	0.5749	0.1072	0 6821	0.2749	0.2480	0.5229	0 0566	0.1111	0.1677	0.1050	1.4778	9 4168
1/17/2001	7 47	0 5749	0.1008	0.6757	0.2749	0.2333	0.5082	0 0563	0.1046	0.1608	0.1045	1 4492	8.9176
1/18/2001	7.21	0.5749	0.0974	0.6723	0.2749	0.2253	0 5002	0.0561	0 1010	0.1571	0 1042	1 4338	8 6463
1/19/2001	6 34	0.5749	0 0856	0.6605	0.2749	0.1981	0.4730	0.0561	0.0888	0.1449	0.1042	1.3827	7 7249
1/20/2001	6 86	0 5749	0.0926	0.6675	0 2749	0.2142	0 4891	0 0565	0.0960	0.1524	0.1048	1.4138	8.2704
1/21/2001	6 86	0 5749	0.0926	0 6675	0.2749	0.2142	0.4891	0.0565	0.0960	0.1524	0.1048	1.4138	8 2704
1/22/2001	6 86	0.5749	0.0926	0.6675	0.2749	0.2142	0.4891	0.0565	0 0960	0.1524	0.1048	1 4138	8.2704
1/23/2001	6 84	0.5749	0.0923	0.6672	0.2749	0.2135	0.4884	0.0565	0 0957	0.1521	0 1048	1.4126	8.2477
1/24/2001	6.33	0 5749	0 0855	0.6604	0.2749	0.1977	0.4727	0.0563	0 0886	0.1449	0 1044	1.3823	7.7122
1/25/2001	6 33	0.5749	0 0854	0 6603	0 2749	0.1977	0.4726	0.0564	0.0886	0 1450	0 1047	1.3827	7.7109
1/26/2001	6.66	0 5749	0.0899	0.6648	0.2749	0.2080	0.4830	0.0565	0.0932	0.1497	0.1048	1.4023	8 0621
1/27/2001	6.35	0.5749	0.0858	0.6607	0.2749	0.1985	0.4734	0.0567	0 0890	0.1456	0.1052	1 3850	7 7392
1/28/2001	6.35	0 5749	0 0858	0 6607	0.2749	0.1985	0.4734	0.0567	0.0890	0.1456	0 1052	1.3850	7.7392
1/29/2001	6.35	0 5749	0 0858	0.6607	0.2749	0.1985	0.4734	0.0567	0.0890	0.1456	0.1052	1.3850	7.7392
1/30/2001	5 96	0.5749	0.0805	0.6554	0 2749	0.1862	0.4611	0.0568	0.0834	0 1402	0.1054	1.3621	7 3221
1/31/2001	5.13	0.5749	0.0692	0 6441	0.2749	0.1601	0.4350	0.0568	0 0718	0.1285	0.1054	1 3131	6.4388
2/1/2001	5.29	0.6405	0.0714	0.7119	0.2749	0.1878	0.4627	0 0569	0.0740	0.1309	0.1057	1.4112	6.6978
2/2/2001	5 32	0.6405	0 0718	0.7123	0 2749	0 1890	0.4639	0 0570	0 0745	0 1314	0 1058	1.4135	6 7336
2/3/2001	6 01	0.6405	0.0812	0 7217	0.2749	0.2135	0.4885	0.0565	0.0842	0.1407	0.1050	1.4558	7 4671
2/4/2001	6 01	0 6405	0.0812	0.7217	0.2749	0.2135	0.4885	0.0565	0 0842	0 1407	0.1050	1 4558	7.4671
2/5/2001	6.01	0 6405	0.0812	0.7217	0.2749	0.2135	0.4885	0.0565	0.0842	0.1407	0.1050	1 4558	7.4671
2/6/2001	5 26	0 6405	0.0710	0.7115	0.2749	0 1869	0.4618	0.0564	0.0737	0.1301	0.1047	1 4082	6 6695
2/7/2001	5.53	0.6405	0.0747	0.7152	0.2749	0.1964	0.4714	0.0563	0.0774	0.1337	0.1045	1.4248	6 9549
2/8/2001	5 67	0.6405	0.0766	0.7171	0.2749	0.2014	0 4764	0.0563	0 0794	0.1357	0 1045	1.4336	7.1042
2/9/2001	6.12	0 6405	0.0827	0.7232	0.2749	0.2176	0.4925	0.0564	0 0857	0.1421	0.1047	1.4625	7.5873
2/10/2001	5.97	0.6405	0.0807	0.7212	0.2749	0 2122	0.4872	0.0559	0.0836	0.1396	0.1039	1.4518	7 4262
2/11/2001	5 97	0.6405	0.0807	0.7212	0.2749	0.2122	0.4872	0.0559	0.0836	0.1396	0.1039	1.4518	7.4262

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

Flow Date	Gas Daily Daily Midpoint	PG&E: Malin to On-System Deliveries			PGT-NW: Kingsgate to Malin			ANG: Alberta/BC to Kingsgate			NOVA[1]	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge		
							($/MMBtu)						
				(2) + (3)			(5) + (6)			(8) + (9)		(4) + (7) + (10) + (11)	(1) + (12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2/12/2001	5 97	0.6405	0.0807	0.7212	0.2749	0.2122	0.4872	0 0559	0.0836	0.1396	0.1039	1 4518	7.4282
2/13/2001	5 37	0 6405	0.0726	0 7131	0.2749	0 1909	0.4659	0.0559	0 0752	0 1311	0 1038	1.4139	6.7883
2/14/2001	5 44	0.6405	0.0734	0 7139	0 2749	0.1931	0 4680	0.0556	0 0761	0.1317	0.1033	1.4169	6 8520
2/15/2001	5 82	0.6405	0.0785	0.7190	0 2749	0.2066	0.4815	0 0557	0.0814	0.1371	0.1034	1.4411	7.2568
2/16/2001	5 31	0 6405	0.0717	0.7122	0.2749	0 1888	0.4637	0.0553	0.0744	0.1297	0.1028	1.4085	6.7222
2/17/2001	5.23	0.6405	0.0706	0.7111	0.2749	0.1858	0.4608	0.0552	0 0732	0.1285	0.1026	1.4029	6 6340
2/18/2001	5.23	0.6405	0 0706	0.7111	0.2749	0.1858	0.4608	0.0552	0.0732	0.1285	0.1026	1.4029	6.6340
2/19/2001	5.23	0 6405	0.0706	0.7111	0.2749	0 1858	0.4608	0.0552	0.0732	0.1285	0.1026	1.4029	6.6340
2/20/2001	5 23	0.6405	0 0706	0.7111	0.2749	0 1858	0.4608	0.0552	0.0732	0.1285	0.1026	1.4029	6.6340
2/21/2001	5.09	0 6405	0 0688	0.7093	0.2749	0.1809	0 4559	0.0553	0 0713	0 1266	0.1028	1.3946	6.4879
2/22/2001	5.07	0 6405	0.0685	0.7090	0.2749	0.1802	0.4552	0.0553	0.0710	0.1263	0.1027	1 3932	6.4668
2/23/2001	4.94	0.6405	0 0667	0.7072	0.2749	0.1755	0 4504	0.0553	0 0692	0.1245	0 1027	1 3848	6 3246
2/24/2001	4 98	0 6405	0.0672	0.7077	0.2749	0.1768	0.4518	0.0555	0.0697	0.1252	0 1031	1.3878	6 3655
2/25/2001	4.98	0 6405	0 0672	0.7077	0.2749	0.1768	0 4518	0 0555	0 0697	0.1252	0.1031	1.3878	6 3655
2/26/2001	4.98	0 6405	0 0672	0.7077	0.2749	0.1768	0 4518	0.0555	0.0697	0 1252	0.1031	1.3878	6 3655
2/27/2001	5.08	0.6405	0 0686	0.7091	0.2749	0.1805	0 4554	0.0557	0.0711	0.1269	0.1035	1.3949	6.4763
2/28/2001	5.10	0.6405	0.0689	0 7094	0.2749	0.1813	0.4562	0.0555	0.0714	0 1270	0.1031	1.3957	6 4988
3/1/2001	5.03	0.6442	0.0679	0.7121	0 2749	0.1726	0 4475	0 0550	0.0704	0.1254	0.1021	1 3872	6 4186
3/2/2001	4.94	0.6442	0.0666	0.7108	0 2749	0.1693	0.4442	0.0549	0.0691	0.1240	0.1020	1 3810	6 3161
3/3/2001	4.97	0.6442	0 0671	0.7113	0.2749	0 1703	0.4453	0 0550	0.0695	0 1245	0.1021	1.3831	6.3499
3/4/2001	4 97	0.6442	0.0671	0.7113	0.2749	0.1703	0.4453	0.0550	0.0695	0.1245	0 1021	1.3831	6 3499
3/5/2001	4.97	0 6442	0.0671	0 7113	0 2749	0.1703	0.4453	0.0550	0.0695	0.1245	0.1021	1.3831	6.3499
3/6/2001	5.18	0.6442	0.0699	0.7141	0.2749	0.1775	0.4525	0.0553	0.0725	0.1277	0.1027	1.3970	6.5735
3/7/2001	5.05	0.6442	0.0682	0.7124	0.2749	0.1733	0.4483	0.0549	0.0707	0.1256	0.1020	1.3883	6.4416
3/8/2001	5.03	0.6442	0.0680	0.7122	0.2749	0.1727	0.4476	0.0549	0.0705	0.1254	0.1019	1.3871	6 4217
3/9/2001	5.05	0.6442	0.0682	0.7124	0.2749	0.1733	0.4483	0.0549	0.0708	0 1257	0.1020	1.3884	6.4422
3/10/2001	4.94	0.6442	0.0667	0.7109	0.2749	0.1696	0.4445	0.0549	0.0692	0.1241	0.1019	1 3814	6.3249
3/11/2001	4.94	0.6442	0.0667	0.7109	0.2749	0.1696	0.4445	0.0549	0.0692	0.1241	0.1019	1.3814	6.3249
3/12/2001	4.94	0 6442	0.0667	0.7109	0.2749	0.1696	0.4445	0.0549	0.0692	0.1241	0.1019	1 3814	6.3249
3/13/2001	4.82	0.6442	0.0651	0.7093	0.2749	0.1654	0.4404	0.0550	0.0675	0 1225	0.1021	1.3742	6.1972
3/14/2001	4.87	0.6442	0.0657	0.7099	0.2749	0.1670	0.4419	0.0548	0.0682	0.1229	0.1017	1.3765	6.2448
3/15/2001	4.82	0.6442	0.0650	0.7092	0.2749	0.1652	0.4402	0.0545	0.0674	0.1220	0.1013	1 3726	6.1896
3/16/2001	4 72	0.6442	0.0638	0.7080	0.2749	0.1620	0.4369	0.0543	0 0661	0.1204	0 1008	1.3661	6.0896
3/17/2001	4.71	0.6442	0.0636	0.7078	0.2749	0.1615	0.4364	0.0542	0.0659	0.1201	0.1006	1.3649	6.0729
3/18/2001	4.71	0.6442	0.0636	0.7078	0.2749	0.1615	0.4364	0.0542	0.0659	0.1201	0.1006	1.3649	6.0729
3/19/2001	4.71	0.6442	0.0636	0.7078	0.2749	0.1615	0.4364	0.0542	0.0659	0.1201	0.1006	1.3649	6.0729
3/20/2001	4.88	0.6442	0.0659	0.7101	0.2749	0.1675	0.4424	0.0545	0.0684	0.1228	0.1012	1.3766	6.2595
3/21/2001	4.88	0.6442	0.0658	0.7100	0.2749	0.1672	0.4422	0.0541	0.0683	0.1223	0.1004	1.3750	6.2512
3/22/2001	4.96	0.6442	0.0670	0 7112	0.2749	0.1701	0.4450	0.0540	0.0694	0.1235	0 1003	1.3800	6 3396
3/23/2001	4.89	0.6442	0.0660	0.7102	0.2749	0.1677	0.4426	0.0543	0.0684	0.1227	0.1008	1.3764	6 2655
3/24/2001	5.13	0.6442	0.0693	0.7135	0.2749	0.1761	0.4510	0.0547	0.0719	0.1266	0.1016	1 3928	6.5272

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily Daily Midpoint	PG&E: Malin to On-System Deliveries			PGT-NW Kingsgate to Malin			ANG: Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
							($/MMBtu)						
	(1)	(2)	(3)	(2) + (3) (4)	(5)	(6)	(5) + (6) (7)	(8)	(9)	(8) + (9) (10)	(11)	(4) + (7) + (10) + (11) (12)	(1) + (12) (13)
3/25/2001	5 13	0.6442	0.0693	0.7135	0.2749	0.1761	0.4510	0.0547	0.0719	0 1266	0.1016	1.3928	6.5272
3/26/2001	5 13	0 6442	0.0693	0.7135	0.2749	0 1761	0.4510	0.0547	0 0719	0.1266	0.1016	1.3928	6.5272
3/27/2001	4.95	0 6442	0.0669	0.7111	0 2749	0.1699	0 4449	0 0542	0 0694	0.1236	0.1007	1.3802	6 3351
3/28/2001	5 21	0 6442	0.0703	0.7145	0.2749	0.1786	0.4536	0 0543	0.0729	0.1272	0.1008	1 3961	6.6047
3/29/2001	5 35	0.6442	0 0722	0.7164	0.2749	0.1835	0 4585	0.0541	0.0749	0.1290	0 1005	1 4043	6.7551
3/30/2001	5.11	0 6442	0.0689	0.7131	0 2749	0.1752	0.4501	0.0539	0.0715	0.1254	0.1001	1 3887	6 4955
3/31/2001	5 16	0 6442	0.0696	0.7138	0 2749	0.1769	0 4519	0.0540	0 0722	0.1262	0.1003	1 3922	6.5502
4/1/2001	5 16	0.6049	0 0696	0.6745	0 2749	0.1611	0 4361	0 0540	0.0464	0.1004	0.1003	1.3113	6.4694
4/2/2001	5 16	0.6049	0.0696	0.6745	0.2749	0.1611	0.4361	0.0540	0.0464	0.1004	0.1003	1.3113	6 4694
4/3/2001	4 79	0 6049	0 0646	0 6695	0.2749	0.1495	0 4245	0.0539	0.0431	0.0969	0.1000	1 2910	6.0785
4/4/2001	5.04	0.6049	0.0681	0.6730	0 2749	0.1575	0 4324	0.0542	0.0454	0.0995	0.1006	1.3055	6 3466
4/5/2001	4 92	0.6049	0.0664	0 6713	0.2749	0.1537	0.4287	0 0539	0.0443	0.0982	0.1001	1.2982	6.2200
4/6/2001	5 06	0 6049	0 0683	0.6732	0 2749	0.1580	0.4329	0.0545	0.0455	0.1000	0.1012	1.3072	6.3646
4/7/2001	5.19	0 6049	0 0700	0.6749	0.2749	0.1620	0.4369	0.0544	0.0467	0.1011	0.1010	1.3139	6.4998
4/8/2001	5 19	0 6049	0.0700	0 6749	0 2749	0.1620	0 4369	0.0544	0.0467	0.1011	0 1010	1.3139	6 4998
4/9/2001	5.19	0 6049	0.0700	0.6749	0.2749	0 1620	0.4369	0.0544	0 0467	0.1011	0.1010	1.3139	6.4998
4/10/2001	5 25	0.6049	0.0708	0.6757	0.2749	0.1639	0.4388	0 0547	0.0472	0.1019	0.1015	1.3180	6.5644
4/11/2001	5.27	0 6049	0.0712	0.6761	0.2749	0.1647	0.4397	0.0544	0.0475	0 1019	0.1011	1.3187	6 5920
4/12/2001	5.19	0 6049	0.0701	0 6750	0.2749	0.1622	0.4372	0.0545	0.0467	0.1013	0 1013	1.3147	6 5088
4/13/2001	5 12	0.6049	0.0691	0.6740	0.2749	0.1598	0 4348	0 0544	0.0461	0.1005	0 1011	1 3103	6 4280
4/14/2001	5 12	0 6049	0.0691	0.6740	0 2749	0.1599	0.4348	0.0544	0.0461	0.1005	0.1011	1 3104	6.4287
4/15/2001	5.12	0 6049	0.0691	0 6740	0.2749	0.1599	0.4348	0.0544	0.0461	0.1005	0.1011	1.3104	6.4287
4/16/2001	5.12	0 6049	0.0691	0.6740	0.2749	0.1599	0 4348	0 0544	0 0461	0.1005	0.1011	1.3104	6.4287
4/17/2001	5 22	0.6049	0.0704	0.6753	0.2749	0.1629	0.4379	0.0546	0 0469	0.1015	0.1014	1 3161	6.5322
4/18/2001	5.02	0 6049	0.0678	0.6727	0 2749	0.1568	0.4317	0.0542	0.0452	0.0994	0.1007	1 3044	6.3235
4/19/2001	4 94	0 6049	0 0667	0.6716	0.2749	0.1542	0.4292	0 0550	0 0444	0 0994	0.1021	1.3023	6.2399
4/20/2001	4 86	0.6049	0 0656	0.6705	0.2749	0.1518	0.4267	0.0551	0.0437	0.0989	0.1024	1 2985	6.1583
4/21/2001	4 76	0.6049	0 0642	0 6691	0.2749	0.1486	0.4235	0.0550	0.0428	0.0978	0.1022	1.2926	6.0492
4/22/2001	4.76	0.6049	0 0642	0.6691	0.2749	0 1486	0.4235	0.0550	0.0428	0 0978	0.1022	1 2926	6 0492
4/23/2001	4.76	0 6049	0.0642	0.6691	0 2749	0.1486	0 4235	0 0550	0 0428	0 0978	0.1022	1 2926	6.0492
4/24/2001	4.84	0 6049	0.0654	0.6703	0.2749	0.1513	0.4262	0.0549	0 0436	0 0985	0.1020	1 2969	6 1397
4/25/2001	4 80	0.6049	0.0648	0.6697	0 2749	0.1498	0.4248	0.0550	0 0432	0.0981	0 1021	1 2946	6 0913
4/26/2001	4 67	0 6049	0 0631	0 6680	0 2749	0.1459	0.4209	0 0550	0.0420	0.0971	0.1022	1 2880	5 9594
4/27/2001	4 66	0.6049	0.0630	0 6679	0.2749	0 1457	0.4206	0.0552	0 0420	0 0971	0.1025	1 2881	5 9519
4/28/2001	4 59	0 6049	0 0619	0.6668	0.2749	0.1433	0 4183	0.0554	0.0413	0.0967	0.1028	1 2846	5.8730
4/29/2001	4.59	0 6049	0 0619	0.6668	0.2749	0.1433	0.4183	0.0554	0.0413	0 0967	0.1028	1.2846	5 8730
4/30/2001	4.59	0 6049	0.0619	0 6668	0.2749	0.1433	0.4183	0.0554	0.0413	0.0967	0 1028	1.2846	5.8730
5/1/2001	4.40	0 5743	0 0594	0 6337	0.2749	0.1159	0.3909	0.0554	0.0396	0.0951	0 1030	1.2227	5.6250
5/2/2001	4 20	0.5743	0 0567	0.6310	0.2749	0.1107	0.3857	0.0555	0.0378	0.0934	0.1032	1.2133	5.4169
5/3/2001	4 18	0.5743	0 0565	0.6308	0.2749	0.1102	0.3851	0 0555	0.0377	0.0931	0.1030	1.2121	5 3965
5/4/2001	4.13	0.5743	0.0558	0.6301	0.2749	0.1088	0.3837	0.0554	0.0372	0.0926	0.1029	1 2092	5 3393

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily: Daily Midpoint	PG&E: Malin to On-System Deliveries			PGT-NW: Kingsgate to Malin			ANG: Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
							($/MMBtu)						
	(1)	(2)	(3)	(2) + (3) (4)	(5)	(6)	(5) + (6) (7)	(8)	(9)	(8) + (9) (10)	(11)	(4) + (7) + (10) + (11) (12)	(1) + (12) (13)
5/5/2001	4.11	0 5743	0 0555	0 6298	0.2749	0.1083	0.3833	0.0552	0 0370	0 0922	0 1025	1.2078	5.3205
5/6/2001	4.11	0 5743	0 0555	0 6298	0 2749	0.1083	0.3833	0 0552	0.0370	0.0922	0 1025	1.2078	5.3205
5/7/2001	4 11	0 5743	0 0555	0.6298	0.2749	0 1083	0.3833	0.0552	0 0370	0.0922	0.1025	1.2078	5 3205
5/8/2001	4.00	0.5743	0.0540	0.6283	0.2749	0.1053	0 3803	0.0551	0 0360	0.0911	0 1023	1 2019	5 2015
5/9/2001	3.96	0 5743	0 0534	0.6277	0.2749	0.1042	0.3792	0 0552	0 0356	0.0908	0.1025	1.2003	5 1583
5/10/2001	3 88	0.5743	0.0524	0.6267	0 2749	0.1023	0.3772	0.0553	0 0350	0.0902	0 1026	1.1968	5 0801
5/11/2001	3.88	0.5743	0 0523	0 6266	0.2749	0.1021	0.3770	0.0549	0.0349	0.0897	0.1019	1.1953	5 0710
5/12/2001	3.87	0.5743	0 0523	0.6266	0.2749	0.1020	0.3769	0.0547	0 0349	0.0896	0.1016	1.1948	5 0678
5/13/2001	3.87	0 5743	0.0523	0 6266	0.2749	0 1020	0.3769	0.0547	0 0349	0.0896	0 1016	1.1948	5 0678
5/14/2001	3.87	0.5743	0 0523	0.6266	0.2749	0.1020	0.3769	0.0547	0 0349	0.0896	0.1016	1 1948	5.0678
5/15/2001	3.98	0 5743	0.0537	0.6280	0 2749	0 1047	0.3797	0.0549	0.0358	0.0907	0.1020	1.2003	5.1773
5/16/2001	4 16	0.5743	0.0562	0.6305	0 2749	0.1097	0 3846	0.0552	0.0375	0.0927	0.1025	1.2103	5 3744
5/17/2001	4.14	0.5743	0.0558	0.6301	0.2749	0.1089	0.3838	0.0554	0 0372	0.0926	0.1028	1 2094	5.3444
5/18/2001	3 90	0.5743	0.0527	0.6270	0.2749	0.1028	0.3777	0.0555	0.0351	0.0906	0.1031	1.1984	5 1011
5/19/2001	3 73	0.5743	0 0504	0.6247	0 2749	0.0983	0.3732	0.0555	0.0336	0.0891	0 1031	1.1900	4.9215
5/20/2001	3.73	0.5743	0 0504	0.6247	0 2749	0.0983	0.3732	0.0555	0.0336	0 0891	0 1031	1.1900	4.9215
5/21/2001	3.73	0 5743	0.0504	0.6247	0.2749	0.0983	0.3732	0.0555	0.0336	0 0891	0.1031	1.1900	4.9215
5/22/2001	3.71	0.5743	0.0501	0.6244	0.2749	0.0977	0.3726	0.0552	0 0334	0.0886	0.1025	1.1880	4.8977
5/23/2001	3.65	0 5743	0.0493	0.6236	0.2749	0.0962	0.3711	0.0550	0.0329	0.0879	0.1022	1.1849	4.8379
5/24/2001	3.72	0.5743	0.0503	0.6246	0.2749	0.0980	0.3730	0.0550	0.0335	0.0885	0.1021	1.1881	4.9109
5/25/2001	3 83	0.5743	0.0517	0.6260	0.2749	0.1009	0.3759	0.0550	0.0345	0.0895	0.1022	1.1937	5.0268
5/26/2001	3.57	0 5743	0.0483	0.6226	0.2749	0.0941	0.3691	0.0553	0 0322	0.0875	0.1027	1.1819	4.7568
5/27/2001	3 57	0.5743	0.0483	0.6226	0.2749	0.0941	0.3691	0.0553	0.0322	0.0875	0.1027	1.1819	4.7568
5/28/2001	3.57	0 5743	0.0483	0.6226	0.2749	0.0941	0.3691	0.0553	0.0322	0.0875	0.1027	1 1819	4.7568
5/29/2001	3.57	0.5743	0.0483	0.6226	0.2749	0.0941	0.3691	0.0553	0.0322	0.0875	0.1027	1.1819	4 7568
5/30/2001	3 40	0.5743	0.0459	0.6202	0.2749	0.0895	0.3644	0.0550	0.0306	0.0856	0.1021	1.1723	4 5700
5/31/2001	3.28	0 5743	0.0443	0.6186	0.2749	0.0864	0.3613	0 0550	0.0295	0.0845	0.1022	1.1665	4.4455
6/1/2001	3.35	0 5686	0 0452	0.6138	0.2749	0.0800	0.3550	0.0555	0.0402	0.0957	0.1118	1.1762	4.5258
6/2/2001	3.24	0 5686	0.0438	0 6124	0.2749	0.0775	0.3525	0.0554	0.0389	0.0944	0.1116	1.1708	4.4157
6/3/2001	3.24	0.5686	0.0438	0.6124	0 2749	0.0775	0.3525	0.0554	0 0389	0 0944	0.1116	1.1708	4.4157
6/4/2001	3.24	0.5686	0.0438	0 6124	0.2749	0.0775	0.3525	0.0554	0.0389	0.0944	0.1116	1 1708	4.4157
6/5/2001	3 37	0 5686	0.0455	0 6141	0.2749	0.0806	0.3555	0.0555	0.0405	0.0960	0.1117	1.1773	4.5501
6/6/2001	3 36	0.5686	0.0453	0.6139	0.2749	0.0802	0.3551	0.0558	0 0403	0.0960	0 1123	1.1774	4.5332
6/7/2001	3 06	0.5686	0.0413	0.6099	0.2749	0 0730	0.3479	0.0559	0 0367	0.0926	0 1126	1.1630	4 2185
6/8/2001	3.04	0.5686	0.0410	0.6096	0.2749	0.0726	0.3476	0 0559	0.0365	0.0924	0.1126	1.1622	4.2029
6/9/2001	3 04	0.5686	0.0410	0.6096	0.2749	0 0726	0.3475	0.0561	0 0364	0.0925	0.1130	1.1626	4.2000
6/10/2001	3 04	0.5686	0.0410	0.6096	0 2749	0.0726	0.3475	0 0561	0 0364	0 0925	0 1130	1.1626	4.2000
6/11/2001	3 04	0 5686	0 0410	0.6096	0.2749	0.0726	0.3475	0.0561	0.0364	0.0925	0.1130	1.1626	4 2000
6/12/2001	3.34	0.5686	0 0451	0.6137	0.2749	0.0798	0.3547	0.0558	0 0401	0 0958	0 1123	1.1766	4.5156
6/13/2001	3 58	0.5686	0.0483	0.6169	0.2749	0.0855	0.3604	0 0560	0.0429	0.0990	0.1128	1.1891	4.7678
6/14/2001	3 61	0 5686	0.0488	0.6174	0.2749	0.0863	0.3613	0 0559	0.0434	0.0993	0.1126	1.1906	4.8050

Appendix O - Calculated Rates for Natural Gas Deliveries to Northern California Electricity Generators

	Gas Daily: Daily Midpoint	PG&E: Malin to On-System Deliveries			PGT-NW: Kingsgate to Malin			ANG: Alberta/BC to Kingsgate			NOVA[1]		
Flow Date	NOVA (AECO-C, NIT)	Transport Charge	Shrinkage Charge	Total PG&E Charges	Transport Charge	Fuel Charge	Total PGT-NW Charges	Converted Transport Charge	Converted Fuel Charge	Total ANG Charges	Converted Transport Charge	Total Transport Charges on All Pipelines	Total Cost of Delivered Gas
	($/MMBtu)												
				(2) + (3)			(5) + (6)			(8) + (9)		(4) + (7) + (10) + (11)	(1) + (12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
6/15/2001	3.45	0 5686	0.0466	0 6152	0.2749	0 0824	0 3573	0 0559	0 0414	0.0973	0 1125	1.1823	4 6310
6/16/2001	3 25	0.5686	0 0438	0 6124	0 2749	0 0776	0 3525	0.0555	0.0390	0 0944	0.1117	1.1710	4.4182
6/17/2001	3.25	0 5686	0 0438	0 6124	0 2749	0.0776	0 3525	0 0555	0 0390	0 0944	0.1117	1.1710	4 4182
6/18/2001	3.25	0.5686	0 0438	0.6124	0.2749	0.0776	0 3525	0.0555	0 0390	0.0944	0.1117	1 1710	4 4182
6/19/2001	3.33	0 5686	0.0449	0.6135	0.2749	0 0795	0 3545	0 0555	0.0400	0.0954	0.1117	1.1751	4.5046
6/20/2001	3 37	0 5686	0.0455	0 6141	0 2749	0 0805	0 3554	0 0555	0.0404	0.0960	0.1119	1 1774	4.5472
6/21/2001	3.24	0 5686	0.0438	0 6124	0.2749	0.0774	0 3524	0.0555	0 0389	0 0945	0 1119	1.1711	4.4134
6/22/2001	3 15	0 5686	0 0438	0.6124	0 2749	0.0753	0.3503	0.0556	0 0378	0 0934	0.1120	1.1681	4 3209
6/23/2001	3 11	0 5686	0.0438	0 6124	0 2749	0.0744	0 3493	0 0560	0.0374	0.0933	0 1127	1.1678	4.2819
6/24/2001	3.11	0 5686	0.0438	0 6124	0 2749	0 0744	0.3493	0 0560	0.0374	0 0933	0.1127	1 1678	4.2819
6/25/2001	3 11	0 5686	0 0438	0.6124	0 2749	0.0744	0.3493	0 0560	0.0374	0.0933	0.1127	1.1678	4 2819
6/26/2001	2 88	0 5686	0 0438	0.6124	0 2749	0 0688	0.3438	0.0562	0.0346	0 0907	0.1131	1 1600	4.0412
6/27/2001	2.81	0 5686	0 0438	0 6124	0 2749	0.0670	0.3419	0.0560	0.0337	0.0897	0 1129	1.1569	3 9621
6/28/2001	2.71	0.5686	0.0438	0 6124	0 2749	0.0647	0.3396	0.0558	0.0325	0.0883	0.1124	1.1528	3.8609
6/29/2001	2.51	0.5686	0.0438	0.6124	0 2749	0 0600	0 3349	0.0560	0.0301	0 0862	0 1129	1 1463	3 6562
6/30/2001	2 17	0.5686	0.0438	0.6124	0.2749	0.0519	0.3268	0.0561	0.0261	0 0822	0.1130	1.1344	3.3068

Source: Col (1): Gas Daily daily midpoint spot-gas price for NOVA (AECO-C, NIT), See Appendix O - Data, Column (3).

Col (2) - (3): PG&E: Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR, and Rule 21, See Appendix O - Data, Columns (7) and (9).

Col (5) - (6): PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1 and % Fuel Charge; See Appendix O - Data, Columns (14) and (16).

Col (8) - (9): ANG: Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge and % Fuel Rate; See Appendix O - Data, Columns (22) and (25).

Col. (11): NOVA (Alberta System) based on FT-D demand charge. Fuel charges do not apply for delivery service. See Appendix O - Data, Columns (28).

Appendix

	Gas Daily: Daily Midpoint			PG&E. Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Del. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn/$US)	($US / MMBtu)		($/MMBtu)							($/MMBtu)			
	(1)	(2)	(1) *1.055056 / (2) (3)	(4)	(5)	(6)	(4) + (5) + (6) (7)	(8)	(3) * (8) (9)	(10)	(11)	(12)	(13)	(10) + (11) + (12) + (13) (14)	(15)
5/1/2000	3 86	1.48	2.74	0 195700	0.267000	0.028600	0.491300	1.73%	0.047485	0 262787	0.007561	0 007500	0 002200	0.280048	1.96%
5/2/2000	3.89	1.48	2.77	0.195700	0.267000	0.028600	0.491300	1 73%	0.047968	0 262787	0 007561	0.007500	0 002200	0.280048	1 96%
5/3/2000	3 89	1.49	2.76	0 195700	0 267000	0.028600	0.491300	1 73%	0.047729	0 262787	0 007561	0 007500	0.002200	0.280048	1 96%
5/4/2000	3.96	1.49	2.80	0.195700	0.267000	0.028600	0.491300	1 73%	0.048374	0.262787	0.007561	0 007500	0.002200	0.280048	1.96%
5/5/2000	3 83	1 50	2.70	0.195700	0 267000	0 028600	0.491300	1.73%	0.046667	0 262787	0.007561	0.007500	0.002200	0.280048	1.96%
5/6/2000	3.78	1.50	2.66	0.195700	0.267000	0 028600	0.491300	1.73%	0.045997	0 262787	0 007561	0.007500	0.002200	0.280048	1.96%
5/7/2000	3 78	1 50	2.66	0.195700	0 267000	0 028600	0.491300	1.73%	0.045997	0 262787	0 007561	0 007500	0.002200	0.280048	1 96%
5/8/2000	3 78	1 50	2.66	0.195700	0 267000	0 028600	0.491300	1.73%	0.045997	0 262787	0.007561	0 007500	0 002200	0.280048	1 96%
5/9/2000	3 82	1.49	2.70	0.195700	0.267000	0 028600	0.491300	1 73%	0.046649	0 262787	0.007561	0.007500	0 002200	0.280048	1 96%
5/10/2000	3 84	1 49	2.71	0.195700	0 267000	0.028600	0.491300	1 73%	0.046898	0 262787	0.007561	0.007500	0 002200	0.280048	1.96%
5/11/2000	3 82	1 50	2.69	0.195700	0 267000	0.028600	0.491300	1.73%	0.046623	0.262787	0 007561	0.007500	0 002200	0.280048	1 96%
5/12/2000	4 03	1 49	2.85	0 195700	0 267000	0.028600	0.491300	1 73%	0.049367	0 262787	0.007561	0 007500	0 002200	0.280048	1 96%
5/13/2000	4 03	1 49	2.86	0 195700	0 267000	0 028600	0.491300	1 73%	0.049460	0 262787	0.007561	0.007500	0 002200	0.280048	1.96%
5/14/2000	4.03	1.49	2.86	0 195700	0.267000	0 028600	0.491300	1 73%	0.049460	0.262787	0.007561	0 007500	0.002200	0.280048	1 96%
5/15/2000	4 03	1 49	2.86	0 195700	0 267000	0 028600	0.491300	1 73%	0.049460	0 262787	0.007561	0.007500	0 002200	0.280048	1 96%
5/16/2000	4 08	1.49	2.89	0.195700	0.267000	0 028600	0.491300	1 73%	0.049929	0 262787	0 007561	0.007500	0.002200	0.280048	1 96%
5/17/2000	4 14	1 49	2.94	0 195700	0.267000	0 028600	0.491300	1 73%	0.050845	0 262787	0.007561	0 007500	0.002200	0.280048	1.96%
5/18/2000	4 20	1 50	2.96	0 195700	0.267000	0.028600	0.491300	1.73%	0.051134	0.262787	0.007561	0 007500	0 002200	0.280048	1 96%
5/19/2000	4.51	1 50	3.17	0 195700	0.267000	0.028600	0.491300	1 73%	0.054793	0.262787	0.007561	0.007500	0 002200	0.280048	1 96%
5/20/2000	4 50	1.50	3.17	0 195700	0.267000	0 028600	0.491300	1 73%	0.054832	0.262787	0.007561	0.007500	0 002200	0.280048	1 96%
5/21/2000	4 50	1 50	3.17	0 195700	0 267000	0 028600	0.491300	1.73%	0.054832	0 262787	0.007561	0.007500	0.002200	0.280048	1.96%
5/22/2000	4.50	1 50	3.17	0.195700	0.267000	0.028600	0.491300	1 73%	0.054832	0.262787	0.007561	0 007500	0 002200	0.280048	1.96%
5/23/2000	4.98	1.50	3.51	0 195700	0 267000	0.028600	0.491300	1 73%	0.060667	0.262787	0.007561	0 007500	0.002200	0.280048	1.96%
5/24/2000	4.78	1 50	3.35	0 195700	0.267000	0.028600	0.491300	1.73%	0.057965	0.262787	0 007561	0.007500	0 002200	0.280048	1 96%
5/25/2000	4 92	1 51	3.44	0.195700	0.267000	0.028600	0.491300	1.73%	0.059470	0.262787	0.007561	0.007500	0.002200	0.280048	1 96%
5/26/2000	5 06	1.51	3.55	0.195700	0 267000	0 028600	0.491300	1.73%	0.061339	0 262787	0.007561	0 007500	0.002200	0.280048	1 96%
5/27/2000	5 14	1 50	3.60	0.195700	0.267000	0.028600	0.491300	1.73%	0.062297	0.262787	0.007561	0 007500	0.002200	0.280048	1.96%
5/28/2000	5 14	1.50	3.60	0.195700	0 267000	0 028600	0.491300	1.73%	0.062297	0.262787	0.007561	0.007500	0 002200	0.280048	1.96%
5/29/2000	5.14	1 50	3.60	0 195700	0 267000	0 028600	0.491300	1.73%	0.062297	0.262787	0.007561	0.007500	0.002200	0.280048	1 96%
5/30/2000	5.14	1.50	3.60	0 195700	0.267000	0 028600	0.491300	1.73%	0.062297	0.262787	0.007561	0 007500	0.002200	0.280048	1 96%
5/31/2000	5.52	1 50	3.87	0.195700	0.267000	0 028600	0.491300	1.73%	0.067008	0.262787	0.007561	0.007500	0.002200	0.280048	1.96%
6/1/2000	5.92	1 50	4.17	0.195700	0.267000	0.044300	0.507000	1.73%	0.072086	0.262787	0.007561	0.007500	0.002200	0.280048	2 08%
6/2/2000	5 34	1.49	3.78	0 195700	0 267000	0.044300	0.507000	1 73%	0.065310	0.262787	0.007561	0.007500	0.002200	0.280048	2.08%
6/3/2000	5 05	1 48	3.60	0.195700	0 267000	0.044300	0.507000	1.73%	0.062344	0.262787	0.007561	0 007500	0 002200	0.280048	2 08%
6/4/2000	5 05	1.48	3.60	0.195700	0.267000	0 044300	0.507000	1.73%	0.062344	0.262787	0.007561	0.007500	0 002200	0.280048	2.08%
6/5/2000	5.05	1.48	3.60	0.195700	0.267000	0.044300	0.507000	1.73%	0.062344	0.262787	0.007561	0.007500	0.002200	0.280048	2.08%
6/6/2000	5 13	1.48	3.66	0 195700	0.267000	0.044300	0.507000	1 73%	0.063295	0 262787	0.007561	0.007500	0 002200	0.280048	2 08%
6/7/2000	5 42	1.48	3.87	0.195700	0.267000	0.044300	0.507000	1.73%	0.066934	0.262787	0.007561	0 007500	0 002200	0.280048	2 08%
6/8/2000	5 07	1 48	3.62	0.195700	0.267000	0 044300	0.507000	1.73%	0.062590	0.262787	0.007561	0 007500	0.002200	0.280048	2.08%
6/9/2000	4 96	1.48	3.53	0.195700	0.267000	0.044300	0.507000	1.73%	0.061109	0.262787	0.007561	0 007500	0 002200	0.280048	2 08%
6/10/2000	5 09	1.48	3.64	0 195700	0.267000	0.044300	0.507000	1.73%	0.062922	0.262787	0 007561	0 007500	0.002200	0.280048	2 08%
6/11/2000	5 09	1 48	3.64	0.195700	0.267000	0.044300	0.507000	1.73%	0.062922	0.262787	0.007561	0.007500	0.002200	0.280048	2.08%
6/12/2000	5.09	1.48	3.64	0.195700	0.267000	0.044300	0.507000	1.73%	0.062922	0 262787	0.007561	0 007500	0.002200	0.280048	2 08%

O - Data

		ANG. Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[8]		
Flow Date	PGT-NW Fuel Charge	Distance	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/$10^3m^3$)	($Cdn/GJ)	($/MMBtu)
	(3) * (15)					(17) * [(16) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
5/1/2000	0.053795	170 7	0.012662	0.000032	0 004321	0.080967	0.057649	0 20%	0.007710	0.005490	170 45	0.149717	0.106600
5/2/2000	0.054342	170 7	0 012662	0.000032	0.004321	0.080967	0.057785	0.20%	0.007770	0.005545	170 45	0.149717	0.106852
5/3/2000	0.054072	170 7	0.012662	0.000032	0.004321	0.080967	0.057498	0.20%	0.007770	0.005518	170 45	0.149717	0.106320
5/4/2000	0.054802	170.7	0.012662	0.000032	0 004321	0.080967	0.057243	0.20%	0 007910	0.005592	170.45	0.149717	0.105850
5/5/2000	0.052868	170 7	0 012662	0.000032	0 004321	0.080967	0.057026	0 20%	0.007660	0.005395	170.45	0.149717	0.105447
5/6/2000	0.052109	170.7	0 012662	0.000032	0.004321	0.080967	0.057026	0.20%	0 007550	0.005318	170.45	0 149717	0.105447
5/7/2000	0.052109	170.7	0 012662	0 000032	0.004321	0 080967	0.057026	0 20%	0.007550	0.005318	170 45	0.149717	0.105447
5/8/2000	0.052109	170.7	0.012662	0.000032	0 004321	0 080967	0.057026	0.20%	0.007550	0.005318	170.45	0 149717	0.105447
5/9/2000	0.052848	170.7	0.012662	0.000032	0.004321	0.080967	0.057228	0.20%	0.007630	0.005393	170.45	0 149717	0.105822
5/10/2000	0.053131	170.7	0 012662	0.000032	0 004321	0.080967	0.057159	0.20%	0 007680	0.005422	170 45	0.149717	0.105694
5/11/2000	0.052819	170 7	0.012662	0.000032	0.004321	0.080967	0.057121	0.20%	0.007640	0.005390	170.45	0.149717	0.105624
5/12/2000	0.055928	170.7	0 012662	0.000032	0.004321	0.080967	0.057332	0.20%	0 008060	0.005707	170 45	0.149717	0.106013
5/13/2000	0.056033	170 7	0 012662	0 000032	0 004321	0 080967	0.057440	0 20%	0.008060	0.005718	170.45	0 149717	0.106213
5/14/2000	0.056033	170.7	0 012662	0 000032	0.004321	0.080967	0.057440	0 20%	0.008060	0.005718	170 45	0.149717	0.106213
5/15/2000	0.056033	170.7	0 012662	0 000032	0 004321	0.080967	0.057440	0 20%	0 008060	0.005718	170 45	0.149717	0.106213
5/16/2000	0.056564	170 7	0 012662	0.000032	0.004321	0 080967	0.057343	0 20%	0.008150	0.005772	170 45	0.149717	0.106035
5/17/2000	0.057601	170.7	0 012662	0 000032	0 004321	0 080967	0.057478	0.20%	0.008280	0.005878	170.45	0.149717	0.106284
5/18/2000	0.057929	170.7	0.012662	0 000032	0.004321	0.080967	0.056980	0.20%	0.008400	0.005911	170 45	0.149717	0.105363
5/19/2000	0.062074	170.7	0.012662	0 000032	0.004321	0 080967	0.056923	0.20%	0 009010	0.006334	170 45	0.149717	0.105258
5/20/2000	0.062118	170 7	0.012662	0.000032	0.004321	0 080967	0.057090	0.20%	0 008990	0.006339	170 45	0.149717	0.105567
5/21/2000	0.062118	170 7	0 012662	0.000032	0.004321	0 080967	0.057090	0 20%	0 008990	0.006339	170.45	0 149717	0.105567
5/22/2000	0.062118	170.7	0 012662	0 000032	0.004321	0 080967	0.057090	0.20%	0.008990	0.006339	170.45	0 149717	0.105567
5/23/2000	0.068729	170.7	0.012662	0.000032	0.004321	0 080967	0.057014	0.20%	0.009960	0.007014	170.45	0 149717	0.105426
5/24/2000	0.065668	170.7	0.012662	0 000032	0.004321	0.080967	0.056813	0.20%	0.009550	0.006701	170 45	0.149717	0.105055
5/25/2000	0.067373	170.7	0 012662	0.000032	0.004321	0.080967	0.056629	0 20%	0.009830	0.006875	170 45	0.149717	0.104713
5/26/2000	0.069490	170.7	0.012662	0.000032	0.004321	0 080967	0.056734	0.20%	0 010120	0.007091	170.45	0.149717	0.104908
5/27/2000	0.070576	170.7	0 012662	0.000032	0.004321	0.080967	0.056779	0.20%	0.010270	0.007202	170.45	0 149717	0.104992
5/28/2000	0.070576	170.7	0.012662	0 000032	0.004321	0.080967	0.056779	0.20%	0.010270	0.007202	170.45	0.149717	0.104992
5/29/2000	0.070576	170.7	0.012662	0.000032	0.004321	0.080967	0.056779	0.20%	0.010270	0.007202	170.45	0.149717	0.104992
5/30/2000	0.070576	170.7	0 012662	0.000032	0 004321	0.080967	0.056779	0.20%	0.010270	0.007202	170.45	0.149717	0.104992
5/31/2000	0.075913	170 7	0 012662	0.000032	0.004321	0.080967	0.056813	0.20%	0.011040	0.007747	170.45	0 149717	0.105055
6/1/2000	0.086770	170.7	0.012662	0.000033	0.004343	0.081018	0.057074	0.30%	0.017745	0.012500	170.45	0 149717	0.105468
6/2/2000	0.078613	170.7	0 012662	0.000033	0 004343	0.081018	0.057330	0.30%	0 016005	0.011325	170.45	0 149717	0.105942
6/3/2000	0.075043	170.7	0.012662	0.000033	0 004343	0.081018	0.057815	0.30%	0 015150	0.010811	170 45	0.149717	0.106838
6/4/2000	0.075043	170.7	0.012662	0.000033	0.004343	0 081018	0.057815	0.30%	0.015150	0.010811	170 45	0.149717	0.106838
6/5/2000	0.075043	170 7	0.012662	0 000033	0.004343	0.081018	0.057815	0.30%	0.015150	0.010811	170.45	0.149717	0.106838
6/6/2000	0.076188	170.7	0.012662	0 000033	0.004343	0.081018	0.057838	0.30%	0.015375	0.010976	170.45	0 149717	0.106881
6/7/2000	0.080568	170.7	0.012662	0.000033	0.004343	0 081018	0.057834	0.30%	0 016260	0.011607	170.45	0 149717	0.106874
6/8/2000	0.075340	170 7	0.012662	0.000033	0.004343	0.081018	0.057815	0.30%	0.015210	0.010854	170 45	0.149717	0.106838
6/9/2000	0.073557	170.7	0 012662	0.000033	0.004343	0.081018	0.057756	0 30%	0 014865	0.010597	170 45	0 149717	0.106730
6/10/2000	0.075740	170.7	0 012662	0.000033	0.004343	0.081018	0.057893	0.30%	0.015270	0.010911	170.45	0.149717	0.106983
6/11/2000	0.075740	170.7	0.012662	0.000033	0.004343	0.081018	0.057893	0.30%	0.015270	0.010911	170.45	0.149717	0.106983
6/12/2000	0.075740	170.7	0.012662	0.000033	0.004343	0.081018	0.057893	0.30%	0 015270	0.010911	170 45	0 149717	0.106983

	Gas Daily: Daily Midpoint			PG&E: Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res Surcharge	GRI[6] Del. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn/$US)	($US / MMBtu)		($/MMBtu)							($/MMBtu)			
			(1) *1.055056 / (2)				(4) + (5) + (6)		(3) * (8)					(10) + (11) + (12) + (13)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
6/13/2000	5.06	1 48	3.61	0.195700	0.267000	0.044300	0.507000	1.73%	0.062490	0.262787	0.007561	0 007500	0 002200	0.280048	2 08%
6/14/2000	4 99	1.47	3.58	0.195700	0.267000	0.044300	0.507000	1.73%	0.061972	0.262787	0.007561	0.007500	0.002200	0.280048	2.08%
6/15/2000	4 86	1 47	3.49	0.195700	0.267000	0.044300	0.507000	1.73%	0.060365	0.262787	0 007561	0.007500	0 002200	0.280048	2 08%
6/16/2000	5.15	1 48	3.68	0.195700	0 267000	0 044300	0.507000	1.73%	0.063694	0.262787	0 007561	0.007500	0.002200	0.280048	2.08%
6/17/2000	5 19	1.47	3.72	0.195700	0.267000	0.044300	0.507000	1 73%	0.064345	0.262787	0.007561	0.007500	0 002200	0.280048	2.08%
6/18/2000	5 19	1.47	3.72	0.195700	0.267000	0.044300	0.507000	1.73%	0.064345	0.262787	0.007561	0 007500	0.002200	0.280048	2 08%
6/19/2000	5 19	1.47	3.72	0.195700	0.267000	0 044300	0.507000	1.73%	0.064345	0.262787	0.007561	0.007500	0.002200	0.280048	2.08%
6/20/2000	5 01	1 47	3.61	0 195700	0.267000	0 044300	0.507000	1.73%	0.062390	0.262787	0 007561	0.007500	0.002200	0.280048	2.08%
6/21/2000	4 67	1.47	3.35	0.195700	0.267000	0.044300	0.507000	1.73%	0.057954	0 262787	0 007561	0.007500	0 002200	0.280048	2 08%
6/22/2000	4 94	1.47	3.54	0 195700	0 267000	0 044300	0.507000	1.73%	0.061217	0.262787	0 007561	0.007500	0.002200	0.280048	2.08%
6/23/2000	5 32	1.47	3.81	0 195700	0.267000	0 044300	0.507000	1.73%	0.065944	0.262787	0 007561	0 007500	0 002200	0.280048	2.08%
6/24/2000	4.97	1 48	3.54	0.195700	0.267000	0.044300	0.507000	1.73%	0.061323	0.262787	0.007561	0 007500	0 002200	0.280048	2.08%
6/25/2000	4 97	1.48	3.54	0.195700	0.267000	0 044300	0.507000	1.73%	0.061323	0 262787	0.007561	0.007500	0 002200	0.280048	2 08%
6/26/2000	4.97	1.48	3.54	0.195700	0.267000	0.044300	0.507000	1.73%	0.061323	0.262787	0.007561	0.007500	0 002200	0.280048	2 08%
6/27/2000	5 02	1 48	3.57	0.195700	0.267000	0.044300	0.507000	1 73%	0.061724	0.262787	0.007561	0.007500	0.002200	0.280048	2.08%
6/28/2000	5.27	1.48	3.75	0 195700	0.267000	0.044300	0.507000	1.73%	0.064822	0.262787	0 007561	0.007500	0.002200	0.280048	2 08%
6/29/2000	5 22	1.48	3.71	0 195700	0 267000	0 044300	0.507000	1.73%	0.064151	0 262787	0 007561	0.007500	0 002200	0.280048	2.08%
6/30/2000	5 04	1.48	3.58	0.195700	0.267000	0.044300	0.507000	1.73%	0.062012	0.262787	0.007561	0.007500	0 002200	0.280048	2.08%
7/1/2000	5 05	1 48	3.60	0 195700	0.267000	0.048500	0.511200	1.73%	0.062227	0.262787	0.007561	0.007500	0 002200	0.280048	2.63%
7/2/2000	5.05	1 48	3.60	0 195700	0.267000	0.048500	0.511200	1.73%	0.062227	0.262787	0.007561	0.007500	0.002200	0.280048	2 63%
7/3/2000	5.05	1.48	3.60	0.195700	0.267000	0.048500	0.511200	1.73%	0.062227	0.262787	0.007561	0.007500	0.002200	0.280048	2 63%
7/4/2000	5.05	1.48	3.60	0.195700	0.267000	0.048500	0.511200	1.73%	0.062248	0.262787	0.007561	0.007500	0.002200	0.280048	2 63%
7/5/2000	5 05	1.48	3.60	0.195700	0.267000	0.048500	0.511200	1.73%	0.062248	0.262787	0.007561	0.007500	0.002200	0.280048	2.63%
7/6/2000	4 74	1 49	3.35	0 195700	0.267000	0.048500	0.511200	1.73%	0.057969	0.262787	0.007561	0.007500	0 002200	0.280048	2.63%
7/7/2000	4.71	1 49	3.34	0.195700	0.267000	0.048500	0.511200	1.73%	0.057830	0 262787	0.007561	0.007500	0 002200	0.280048	2 63%
7/8/2000	4.48	1 48	3.19	0.195700	0 267000	0 048500	0.511200	1.73%	0.055213	0 262787	0.007561	0.007500	0.002200	0.280048	2.63%
7/9/2000	4.48	1 48	3.19	0.195700	0 267000	0.048500	0.511200	1.73%	0.055213	0.262787	0.007561	0.007500	0.002200	0.280048	2.63%
7/10/2000	4.48	1.48	3.19	0.195700	0.267000	0.048500	0.511200	1.73%	0.055213	0.262787	0.007561	0 007500	0 002200	0.280048	2 63%
7/11/2000	4.81	1.48	3.43	0.195700	0.267000	0.048500	0.511200	1.73%	0.059267	0.262787	0 007561	0 007500	0.002200	0.280048	2.63%
7/12/2000	4 69	1.48	3.35	0.195700	0.267000	0.048500	0.511200	1.73%	0.057899	0.262787	0.007561	0.007500	0.002200	0.280048	2 63%
7/13/2000	4.89	1 48	3.48	0.195700	0 267000	0.048500	0.511200	1 73%	0.060246	0 262787	0.007561	0.007500	0.002200	0.280048	2.63%
7/14/2000	4.67	1.48	3.33	0.195700	0.267000	0.048500	0.511200	1 73%	0.057559	0.262787	0.007561	0.007500	0.002200	0.280048	2 63%
7/15/2000	4 76	1 48	3.38	0.195700	0.267000	0.048500	0.511200	1.73%	0.058464	0 262787	0.007561	0.007500	0.002200	0.280048	2 63%
7/16/2000	4 76	1.48	3.38	0.195700	0.267000	0.048500	0.511200	1.73%	0.058464	0.262787	0 007561	0 007500	0 002200	0.280048	2.63%
7/17/2000	4.76	1 48	3.38	0.195700	0.267000	0.048500	0.511200	1.73%	0.058464	0 262787	0.007561	0.007500	0 002200	0.280048	2.63%
7/18/2000	4 44	1.48	3.16	0.195700	0.267000	0.048500	0.511200	1.73%	0.054648	0.262787	0 007561	0.007500	0.002200	0.280048	2 63%
7/19/2000	4 25	1.48	3.03	0.195700	0.267000	0.048500	0.511200	1.73%	0.052413	0.262787	0.007561	0.007500	0.002200	0.280048	2.63%
7/20/2000	4 44	1.48	3.17	0.195700	0.267000	0.048500	0.511200	1.73%	0.054851	0.262787	0.007561	0.007500	0 002200	0.280048	2 63%
7/21/2000	4.25	1.47	3.04	0.195700	0.267000	0.048500	0.511200	1.73%	0.052537	0.262787	0 007561	0.007500	0 002200	0.280048	2 63%
7/22/2000	4 25	1.47	3.04	0 195700	0.267000	0.048500	0.511200	1.73%	0.052655	0.262787	0.007561	0.007500	0.002200	0.280048	2.63%
7/23/2000	4.25	1.47	3.04	0.195700	0.267000	0.048500	0.511200	1.73%	0.052655	0.262787	0 007561	0.007500	0.002200	0.280048	2.63%
7/24/2000	4.25	1.47	3.04	0 195700	0.267000	0.048500	0.511200	1.73%	0.052655	0.262787	0.007561	0 007500	0.002200	0.280048	2.63%
7/25/2000	3 90	1.46	2.81	0.195700	0.267000	0.048500	0.511200	1.73%	0.048564	0 262787	0.007561	0.007500	0 002200	0.280048	2.63%
7/26/2000	4.06	1.47	2.92	0.195700	0 267000	0.048500	0.511200	1.73%	0.050573	0 262787	0.007561	0 007500	0.002200	0.280048	2 63%

		ANG: Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[8]		
Flow Date	PGT-NW Fuel Charge	Distance	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/10^{3}m^3)	($Cdn/GJ)	($/MMBtu)
	(3) * (15)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1 055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
6/13/2000	0.075219	170.7	0.012662	0 000033	0.004343	0.081018	0.057893	0.30%	0 015165	0.010836	170 45	0.149717	0.106983
6/14/2000	0.074595	170.7	0.012662	0.000033	0.004343	0.081018	0.058161	0.30%	0.014970	0.010747	170 45	0 149717	0.107478
6/15/2000	0.072662	170 7	0 012662	0.000033	0 004343	0.081018	0.058169	0.30%	0.014580	0.010468	170 45	0.149717	0.107492
6/16/2000	0.076669	170.7	0 012662	0 000033	0 004343	0.081018	0.057920	0.30%	0.015450	0.011045	170.45	0.149717	0.107033
6/17/2000	0.077452	170.7	0.012662	0.000033	0 004343	0 081018	0.058117	0.30%	0 015555	0.011158	170.45	0.149717	0.107397
6/18/2000	0.077452	170 7	0.012662	0.000033	0.004343	0 081018	0.058117	0.30%	0 015555	0.011158	170 45	0.149717	0.107397
6/19/2000	0.077452	170.7	0.012662	0 000033	0.004343	0 081018	0.058117	0 30%	0.015555	0.011158	170.45	0.149717	0.107397
6/20/2000	0.075099	170.7	0 012662	0 000033	0.004343	0.081018	0.058320	0 30%	0 015030	0.010819	170.45	0.149717	0.107771
6/21/2000	0.069759	170 7	0 012662	0.000033	0 004343	0 081018	0.058117	0.30%	0.014010	0.010050	170.45	0.149717	0.107397
6/22/2000	0.073687	170.7	0.012662	0 000033	0.004343	0 081018	0.058034	0 30%	0.014820	0.010616	170.45	0 149717	0.107244
6/23/2000	0.079377	170.7	0 012662	0 000033	0.004343	0.081018	0.058050	0 30%	0 015960	0.011435	170.45	0.149717	0.107273
6/24/2000	0.073814	170 7	0 012662	0.000033	0.004343	0 081018	0.057783	0.30%	0 014910	0.010634	170.45	0 149717	0.106780
6/25/2000	0.073814	170.7	0 012662	0.000033	0 004343	0 081018	0.057783	0 30%	0.014910	0.010634	170 45	0.149717	0.106780
6/26/2000	0.073814	170.7	0.012662	0.000033	0.004343	0 081018	0.057783	0 30%	0 014910	0.010634	170 45	0.149717	0.106780
6/27/2000	0.074297	170.7	0.012662	0.000033	0.004343	0.081018	0.057639	0 30%	0.015045	0.010704	170 45	0.149717	0.106514
6/28/2000	0.078027	170.7	0 012662	0.000033	0.004343	0.081018	0.057659	0 30%	0 015795	0.011241	170 45	0 149717	0.106550
6/29/2000	0.077218	170 7	0.012662	0.000033	0.004343	0 081018	0.057608	0.30%	0.015645	0.011124	170.45	0.149717	0.106456
6/30/2000	0.074643	170.7	0 012662	0 000033	0.004343	0 081018	0.057678	0.30%	0 015105	0.010753	170.45	0 149717	0.106586
7/1/2000	0.094729	170.7	0.012662	0.000033	0.004366	0.081071	0.057801	0 70%	0 035315	0.025179	170.45	0.149717	0.106744
7/2/2000	0.094729	170 7	0 012662	0.000033	0.004366	0.081071	0.057801	0 70%	0 035315	0.025179	170.45	0 149717	0.106744
7/3/2000	0.094729	170 7	0 012662	0.000033	0 004366	0.081071	0.057801	0.70%	0.035315	0.025179	170 45	0 149717	0.106744
7/4/2000	0.094761	170 7	0.012662	0.000033	0.004366	0.081071	0.057821	0.70%	0 035315	0.025187	170.45	0.149717	0.106780
7/5/2000	0.094761	170.7	0 012662	0.000033	0 004366	0 081071	0.057821	0.70%	0.035315	0.025187	170.45	0.149717	0.106780
7/6/2000	0.088246	170 7	0.012662	0.000033	0 004366	0.081071	0.057371	0 70%	0.033145	0.023456	170.45	0.149717	0.105949
7/7/2000	0.088036	170.7	0.012662	0 000033	0.004366	0.081071	0.057599	0.70%	0.032935	0.023400	170.45	0.149717	0.106370
7/8/2000	0.084052	170.7	0 012662	0 000033	0.004366	0.081071	0.057754	0.70%	0.031360	0.022341	170.45	0.149717	0.106658
7/9/2000	0.084052	170.7	0 012662	0 000033	0 004366	0.081071	0.057754	0.70%	0 031360	0.022341	170.45	0.149717	0.106658
7/10/2000	0.084052	170 7	0.012662	0.000033	0 004366	0.081071	0.057754	0.70%	0.031360	0.022341	170 45	0.149717	0.106658
7/11/2000	0.090223	170.7	0 012662	0.000033	0.004366	0.081071	0.057801	0 70%	0.033635	0.023981	170.45	0.149717	0.106744
7/12/2000	0.088141	170.7	0.012662	0.000033	0.004366	0.081071	0.057852	0.70%	0.032830	0.023427	170 45	0.149717	0.106838
7/13/2000	0.091713	170 7	0 012662	0.000033	0.004366	0.081071	0.057735	0.70%	0.034230	0.024377	170.45	0.149717	0.106622
7/14/2000	0.087623	170.7	0.012662	0 000033	0.004366	0.081071	0.057758	0.70%	0 032690	0.023290	170.45	0 149717	0.106665
7/15/2000	0.089001	170 7	0.012662	0 000033	0.004366	0.081071	0.057618	0.70%	0 033285	0.023656	170.45	0.149717	0.106406
7/16/2000	0.089001	170.7	0 012662	0.000033	0.004366	0.081071	0.057618	0.70%	0.033285	0.023656	170.45	0.149717	0.106406
7/17/2000	0.089001	170.7	0.012662	0.000033	0.004366	0.081071	0.057618	0.70%	0.033285	0.023656	170.45	0.149717	0.106406
7/18/2000	0.083191	170.7	0.012662	0.000033	0.004366	0.081071	0.057743	0.70%	0.031045	0.022112	170.45	0 149717	0.106636
7/19/2000	0.079789	170 7	0.012662	0 000033	0.004366	0.081071	0.057860	0.70%	0.029715	0.021207	170.45	0.149717	0.106852
7/20/2000	0.083501	170.7	0 012662	0.000033	0.004366	0.081071	0.057958	0.70%	0.031045	0.022194	170.45	0.149717	0.107033
7/21/2000	0.079978	170.7	0 012662	0.000033	0.004366	0.081071	0.057997	0.70%	0.029715	0.021258	170.45	0.149717	0.107106
7/22/2000	0.080157	170.7	0.012662	0 000033	0.004366	0.081071	0.058127	0.70%	0.029715	0.021305	170 45	0.149717	0.107346
7/23/2000	0.080157	170.7	0.012662	0.000033	0.004366	0.081071	0.058127	0.70%	0 029715	0.021305	170.45	0.149717	0.107346
7/24/2000	0.080157	170.7	0.012662	0.000033	0.004366	0.081071	0.058127	0.70%	0.029715	0.021305	170.45	0.149717	0.107346
7/25/2000	0.073930	170 7	0.012662	0 000033	0.004366	0.081071	0.058429	0.70%	0.027265	0.019650	170.45	0.149717	0.107904
7/26/2000	0.076988	170.7	0.012662	0.000033	0.004366	0.081071	0.058373	0.70%	0.028420	0.020463	170 45	0.149717	0.107800

	Gas Daily: Daily Midpoint			PG&E Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Del. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn:$US)	($US / MMBtu)		($/MMBtu)							($/MMBtu)			
	(1)	(2)	(1) *1.055056 / (2) (3)	(4)	(5)	(6)	(4) + (5) + (6) (7)	(8)	(3) * (8) (9)	(10)	(11)	(12)	(13)	(10) + (11) + (12) + (13) (14)	(15)
7/27/2000	4.05	1 47	2.91	0.195700	0.267000	0.048500	0.511200	1.73%	0.050407	0.262787	0.007561	0.007500	0.002200	0.280048	2.63%
7/28/2000	4.24	1 47	3.04	0.195700	0.267000	0.048500	0.511200	1 73%	0.052538	0.262787	0.007561	0.007500	0.002200	0.280048	2.63%
7/29/2000	4 29	1 48	3.06	0 195700	0.267000	0.048500	0.511200	1.73%	0.052932	0.262787	0.007561	0.007500	0.002200	0.280048	2.63%
7/30/2000	4 29	1 48	3.06	0 195700	0.267000	0.048500	0.511200	1.73%	0.052932	0.262787	0.007561	0 007500	0 002200	0.280048	2 63%
7/31/2000	4.29	1.48	3.06	0.195700	0 267000	0 048500	0.511200	1.73%	0.052932	0.262787	0.007561	0.007500	0 002200	0.280048	2.63%
8/1/2000	4 22	1 49	2.99	0 195700	0.267000	0.058600	0.521300	1 73%	0.051703	0.262787	0 007561	0.007500	0 002200	0.280048	2 88%
8/2/2000	4 29	1.49	3.04	0 195700	0 267000	0.058600	0.521300	1 73%	0.052519	0 262787	0.007561	0.007500	0.002200	0.280048	2.88%
8/3/2000	4 48	1.48	3.19	0.195700	0 267000	0.058600	0.521300	1.73%	0.055141	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
8/4/2000	4.65	1 48	3.31	0.195700	0 267000	0.058600	0.521300	1.73%	0.057177	0.262787	0.007561	0 007500	0 002200	0.280048	2.88%
8/5/2000	4 58	1.49	3.24	0.195700	0 267000	0.058600	0.521300	1.73%	0.056085	0 262787	0.007561	0.007500	0 002200	0.280048	2.88%
8/6/2000	4 58	1.49	3.24	0.195700	0.267000	0.058600	0.521300	1.73%	0.056085	0.262787	0.007561	0 007500	0.002200	0.280048	2.88%
8/7/2000	4.58	1 49	3.24	0 195700	0 267000	0.058600	0.521300	1.73%	0.056085	0.262787	0.007561	0 007500	0 002200	0.280048	2.88%
8/8/2000	4.58	1.49	3.24	0.195700	0.267000	0.058600	0.521300	1.73%	0.056138	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
8/9/2000	4.51	1.49	3.19	0.195700	0.267000	0.058600	0.521300	1.73%	0.055227	0.262787	0 007561	0.007500	0.002200	0.280048	2.88%
8/10/2000	4 33	1 48	3.07	0.195700	0 267000	0 058600	0.521300	1.73%	0.053167	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
8/11/2000	4.05	1 48	2.88	0.195700	0 267000	0.058600	0.521300	1.73%	0.049798	0.262787	0.007561	0.007500	0 002200	0.280048	2.88%
8/12/2000	4 10	1.48	2.91	0.195700	0.267000	0.058600	0.521300	1.73%	0.050370	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
8/13/2000	4.10	1.48	2.91	0.195700	0.267000	0 058600	0.521300	1.73%	0.050370	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
8/14/2000	4 10	1.48	2.91	0.195700	0.267000	0 058600	0.521300	1.73%	0.050370	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
8/15/2000	4.14	1 48	2.94	0 195700	0.267000	0.058600	0.521300	1.73%	0.050834	0.262787	0 007561	0.007500	0.002200	0.280048	2 88%
8/16/2000	4.19	1 49	2.97	0.195700	0 267000	0 058600	0.521300	1.73%	0.051431	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
8/17/2000	4.32	1 48	3.08	0 195700	0.267000	0 058600	0.521300	1.73%	0.053309	0.262787	0 007561	0.007500	0.002200	0.280048	2.88%
8/18/2000	4.65	1 48	3.32	0.195700	0.267000	0.058600	0.521300	1 73%	0.057507	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
8/19/2000	4.73	1.47	3.38	0 195700	0.267000	0.058600	0.521300	1.73%	0.058544	0.262787	0.007561	0 007500	0.002200	0.280048	2.88%
8/20/2000	4.73	1.47	3.38	0.195700	0 267000	0.058600	0.521300	1 73%	0.058544	0.262787	0 007561	0.007500	0 002200	0.280048	2.88%
8/21/2000	4.73	1.47	3.38	0.195700	0 267000	0 058600	0.521300	1 73%	0.058544	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
8/22/2000	4.87	1.48	3.48	0.195700	0.267000	0.058600	0.521300	1.73%	0.060203	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
8/23/2000	4 85	1.48	3.46	0.195700	0.267000	0.058600	0.521300	1 73%	0.059930	0.262787	0 007561	0.007500	0.002200	0.280048	2.88%
8/24/2000	4.70	1.49	3.33	0.195700	0.267000	0.058600	0.521300	1.73%	0.057603	0.262787	0 007561	0 007500	0.002200	0.280048	2.88%
8/25/2000	4 38	1.49	3.10	0.195700	0.267000	0.058600	0.521300	1.73%	0.053698	0.262787	0 007561	0 007500	0.002200	0.280048	2 88%
8/26/2000	4.44	1.48	3.16	0 195700	0.267000	0.058600	0.521300	1.73%	0.054592	0 262787	0.007561	0.007500	0.002200	0.280048	2 88%
8/27/2000	4 44	1.48	3.16	0 195700	0.267000	0 058600	0.521300	1.73%	0.054592	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
8/28/2000	4 44	1.48	3.16	0 195700	0.267000	0.058600	0.521300	1.73%	0.054592	0 262787	0 007561	0.007500	0.002200	0.280048	2.88%
8/29/2000	4 75	1.48	3.37	0.195700	0.267000	0 058600	0.521300	1 73%	0.058342	0.262787	0.007561	0 007500	0 002200	0.280048	2.88%
8/30/2000	4.93	1.49	3.50	0.195700	0.267000	0 058600	0.521300	1.73%	0.060522	0 262787	0.007561	0.007500	0.002200	0.280048	2.88%
8/31/2000	5 31	1.48	3.78	0.195700	0 267000	0.058600	0.521300	1.73%	0.065403	0.262787	0.007561	0 007500	0.002200	0.280048	2.88%
9/1/2000	5 66	1.47	4.05	0.195700	0 267000	0.052400	0.515100	1.73%	0.070121	0.262787	0.007561	0 007500	0.002200	0.280048	2 88%
9/2/2000	5.62	1.47	4.02	0 195700	0.267000	0.052400	0.515100	1.73%	0.069521	0.262787	0.007561	0 007500	0.002200	0.280048	2 88%
9/3/2000	5.62	1.47	4.02	0.195700	0.267000	0.052400	0.515100	1.73%	0.069521	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
9/4/2000	5.62	1.47	4.02	0.195700	0.267000	0.052400	0.515100	1.73%	0.069521	0.262787	0 007561	0.007500	0 002200	0.280048	2.88%
9/5/2000	5 62	1.47	4.02	0.195700	0.267000	0 052400	0.515100	1.73%	0.069521	0 262787	0.007561	0.007500	0.002200	0.280048	2 88%
9/6/2000	6 15	1 48	4.39	0.195700	0.267000	0.052400	0.515100	1.73%	0.076031	0.262787	0.007561	0.007500	0 002200	0.280048	2.88%
9/7/2000	6 42	1.48	4.56	0.195700	0.267000	0.052400	0.515100	1 73%	0.078885	0.262787	0.007561	0.007500	0 002200	0.280048	2 88%
9/8/2000	6.04	1 48	4.31	0.195700	0.267000	0.052400	0.515100	1.73%	0.074544	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%

		ANG Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[8]		
Flow Date	PGT-NW Fuel Charge	Distance	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/$10^3m^3$)	($Cdn/GJ)	($/MMBtu)
	(3) * (18)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
7/27/2000	0.076736	170 7	0.012662	0.000033	0.004366	0 081071	0.058326	0 70%	0 028350	0.020396	170.45	0 149717	0.107712
7/28/2000	0.079979	170.7	0.012662	0 000033	0 004366	0 081071	0.058135	0.70%	0.029645	0.021258	170.45	0 149717	0.107361
7/29/2000	0.080579	170 7	0.012662	0 000033	0 004366	0.081071	0.057887	0.70%	0.029995	0.021417	170 45	0 149717	0.106903
7/30/2000	0.080579	170 7	0 012662	0.000033	0.004366	0.081071	0.057887	0.70%	0.029995	0.021417	170.45	0 149717	0.106903
7/31/2000	0.080579	170 7	0.012662	0 000033	0.004366	0 081071	0.057887	0.70%	0.029995	0.021417	170 45	0.149717	0.106903
8/1/2000	0.086030	170.7	0.012662	0 000033	0 004343	0 081018	0.057446	0 80%	0.033720	0.023909	170.45	0 149717	0.106156
8/2/2000	0.087389	170.7	0 012662	0 000033	0 004343	0.081018	0.057399	0 80%	0 034280	0.024286	170 45	0.149717	0.106070
8/3/2000	0.091750	170.7	0.012662	0.000033	0 004343	0.081018	0.057705	0.80%	0 035800	0.025499	170.45	0 149717	0.106636
8/4/2000	0.095139	170 7	0 012662	0.000033	0.004343	0 081018	0.057585	0.80%	0.037200	0.026440	170 45	0 149717	0.106413
8/5/2000	0.093322	170.7	0.012662	0 000033	0 004343	0.081018	0.057411	0 80%	0.036600	0.025935	170 45	0.149717	0.106092
8/6/2000	0.093322	170 7	0 012662	0.000033	0 004343	0.081018	0.057411	0.80%	0 036600	0.025935	170 45	0 149717	0.106092
8/7/2000	0.093322	170 7	0 012662	0 000033	0 004343	0 081018	0.057411	0.80%	0.036600	0.025935	170.45	0 149717	0.106092
8/8/2000	0.093409	170.7	0 012662	0.000033	0.004343	0.081018	0.057465	0 80%	0.036600	0.025960	170.45	0.149717	0.106192
8/9/2000	0.091894	170.7	0.012662	0.000033	0 004343	0.081018	0.057411	0 80%	0.036040	0.025538	170.45	0 149717	0.106092
8/10/2000	0.088466	170 7	0.012662	0 000033	0 004343	0 081018	0.057569	0.80%	0.034600	0.024586	170 45	0 149717	0.106385
8/11/2000	0.082861	170.7	0.012662	0 000033	0 004343	0 081018	0.057655	0.80%	0.032360	0.023028	170 45	0 149717	0.106543
8/12/2000	0.083812	170.7	0.012662	0 000033	0.004343	0 081018	0.057604	0.80%	0.032760	0.023292	170 45	0 149717	0.106449
8/13/2000	0.083812	170 7	0.012662	0.000033	0.004343	0 081018	0.057604	0.80%	0.032760	0.023292	170.45	0.149717	0.106449
8/14/2000	0.083812	170.7	0 012662	0.000033	0 004343	0 081018	0.057604	0.80%	0.032760	0.023292	170.45	0 149717	0.106449
8/15/2000	0.084585	170 7	0 012662	0 000033	0 004343	0 081018	0.057573	0 80%	0 033080	0.023507	170.45	0.149717	0.106392
8/16/2000	0.085578	170.7	0 012662	0.000033	0.004343	0.081018	0.057484	0.80%	0 033520	0.023783	170 45	0.149717	0.106227
8/17/2000	0.088703	170 7	0.012662	0.000033	0.004343	0.081018	0.057858	0.80%	0.034520	0.024652	170.45	0.149717	0.106918
8/18/2000	0.095687	170 7	0.012662	0.000033	0 004343	0.081018	0.057917	0 80%	0.037200	0.026593	170.45	0 149717	0.107026
8/19/2000	0.097412	170 7	0.012662	0.000033	0 004343	0 081018	0.057964	0 80%	0.037840	0.027072	170.45	0.149717	0.107113
8/20/2000	0.097412	170.7	0.012662	0.000033	0.004343	0 081018	0.057964	0 80%	0.037840	0.027072	170 45	0.149717	0.107113
8/21/2000	0.097412	170.7	0 012662	0.000033	0.004343	0 081018	0.057964	0 80%	0.037840	0.027072	170.45	0.149717	0.107113
8/22/2000	0.100173	170 7	0.012662	0.000033	0.004343	0 081018	0.057893	0.80%	0.038960	0.027839	170.45	0.149717	0.106983
8/23/2000	0.099720	170.7	0 012662	0.000033	0 004343	0.081018	0.057928	0.80%	0 038760	0.027713	170.45	0.149717	0.107048
8/24/2000	0.095847	170 7	0 012662	0.000033	0 004343	0.081018	0.057457	0.80%	0 037580	0.026637	170.45	0.149717	0.106177
8/25/2000	0.089350	170 7	0.012662	0.000033	0.004343	0.081018	0.057480	0.80%	0.035000	0.024832	170.45	0.149717	0.106220
8/26/2000	0.090838	170 7	0.012662	0 000033	0.004343	0.081018	0.057647	0 80%	0.035480	0.025245	170.45	0.149717	0.106528
8/27/2000	0.090838	170 7	0.012662	0 000033	0.004343	0.081018	0.057647	0.80%	0.035480	0.025245	170.45	0.149717	0.106528
8/28/2000	0.090838	170.7	0 012662	0.000033	0.004343	0 081018	0.057647	0.80%	0 035480	0.025245	170.45	0 149717	0.106528
8/29/2000	0.097076	170.7	0 012662	0.000033	0.004343	0.081018	0.057581	0.80%	0.037960	0.026979	170.45	0 149717	0.106406
8/30/2000	0.100705	170.7	0.012662	0 000033	0.004343	0 081018	0.057492	0.80%	0.039440	0.027987	170 45	0 149717	0.106242
8/31/2000	0.108826	170.7	0 012662	0 000033	0.004343	0 081018	0.057737	0.80%	0.042440	0.030244	170.45	0 149717	0.106694
9/1/2000	0.116676	170 7	0.012662	0.000033	0.004343	0.081018	0.058070	0 90%	0.050895	0.036479	170.45	0.149717	0.107310
9/2/2000	0.115678	170.7	0.012662	0 000033	0 004343	0.081018	0.057983	0.90%	0.050535	0.036167	170.45	0 149717	0.107150
9/3/2000	0.115678	170 7	0.012662	0.000033	0 004343	0.081018	0.057983	0 90%	0 050535	0.036167	170.45	0 149717	0.107150
9/4/2000	0.115678	170.7	0 012662	0.000033	0.004343	0.081018	0.057983	0 90%	0.050535	0.036167	170 45	0.149717	0.107150
9/5/2000	0.115678	170 7	0.012662	0.000033	0.004343	0.081018	0.057983	0 90%	0.050535	0.036167	170 45	0.149717	0.107150
9/6/2000	0.126511	170.7	0.012662	0.000033	0.004343	0.081018	0.057944	0.90%	0.055305	0.039554	170 45	0.149717	0.107077
9/7/2000	0.131260	170.7	0.012662	0 000033	0.004343	0 081018	0.057589	0 90%	0.057735	0.041039	170.45	0.149717	0.106421
9/8/2000	0.124036	170.7	0.012662	0.000033	0.004343	0.081018	0.057846	0.90%	0.054315	0.038780	170 45	0.149717	0.106896

	Gas Daily: Daily Midpoint			PG&E Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Del. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn $US)	($US / MMBtu)		($/MMBtu)							($/MMBtu)			
			(1) *1.055056 / (2)				(4) + (5) + (6)		(3) * (8)					(10) + (11) + (12) + (13)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
9/9/2000	6.00	1.48	4.28	0 195700	0 267000	0.052400	0.515100	1 73%	0.074030	0.262787	0.007561	0 007500	0.002200	0.280048	2 88%
9/10/2000	6 00	1 48	4.28	0 195700	0.267000	0.052400	0.515100	1 73%	0.074030	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
9/11/2000	6 00	1 48	4.28	0.195700	0.267000	0.052400	0.515100	1 73%	0.074030	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
9/12/2000	6 18	1.48	4.40	0.195700	0 267000	0.052400	0.515100	1 73%	0.076155	0.262787	0 007561	0.007500	0.002200	0.280048	2 88%
9/13/2000	6.21	1 48	4.42	0.195700	0 267000	0.052400	0.515100	1.73%	0.076457	0.262787	0.007561	0 007500	0.002200	0.280048	2 88%
9/14/2000	6.33	1 48	4.50	0.195700	0.267000	0.052400	0.515100	1.73%	0.077866	0.262787	0 007561	0.007500	0.002200	0.280048	2 88%
9/15/2000	6 47	1 49	4.59	0 195700	0.267000	0 052400	0.515100	1.73%	0.079361	0.262787	0.007561	0.007500	0 002200	0.280048	2.88%
9/16/2000	6.68	1.48	4.75	0.195700	0.267000	0 052400	0.515100	1.73%	0.082139	0.262787	0 007561	0.007500	0 002200	0.280048	2 88%
9/17/2000	6.68	1 48	4.75	0.195700	0.267000	0.052400	0.515100	1 73%	0.082139	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
9/18/2000	6 68	1 48	4.75	0.195700	0 267000	0 052400	0.515100	1 73%	0.082139	0.262787	0.007561	0 007500	0.002200	0.280048	2.88%
9/19/2000	6.39	1 49	4.52	0 195700	0.267000	0.052400	0.515100	1 73%	0.078251	0.262787	0.007561	0 007500	0 002200	0.280048	2 88%
9/20/2000	6 49	1.49	4.60	0.195700	0.267000	0 052400	0.515100	1.73%	0.079609	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
9/21/2000	6.21	1.48	4.41	0.195700	0.267000	0.052400	0.515100	1.73%	0.076354	0.262787	0.007561	0 007500	0 002200	0.280048	2.88%
9/22/2000	6.48	1.49	4.60	0.195700	0.267000	0.052400	0.515100	1 73%	0.079524	0.262787	0 007561	0.007500	0.002200	0.280048	2.88%
9/23/2000	6.53	1.49	4.62	0.195700	0 267000	0.052400	0.515100	1.73%	0.079974	0.262787	0 007561	0.007500	0.002200	0.280048	2 88%
9/24/2000	6 53	1.49	4.62	0.195700	0.267000	0.052400	0.515100	1.73%	0.079974	0.262787	0.007561	0 007500	0.002200	0.280048	2 88%
9/25/2000	6 53	1.49	4.62	0.195700	0.267000	0.052400	0.515100	1.73%	0.079974	0.262787	0.007561	0.007500	0 002200	0.280048	2.88%
9/26/2000	6 44	1.49	4.56	0.195700	0.267000	0 052400	0.515100	1 73%	0.078943	0.262787	0.007561	0.007500	0 002200	0.280048	2.88%
9/27/2000	6 45	1 49	4.57	0.195700	0.267000	0.052400	0.515100	1 73%	0.079057	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
9/28/2000	6.60	1.50	4.65	0.195700	0.267000	0.052400	0.515100	1.73%	0.080454	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
9/29/2000	6 68	1.50	4.69	0.195700	0.267000	0.052400	0.515100	1.73%	0.081122	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
9/30/2000	6.63	1.51	4.64	0.195700	0 267000	0.052400	0.515100	1.73%	0.080241	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/1/2000	6.63	1.51	4.64	0.195700	0.267000	0.058000	0.520700	1.35%	0.062616	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/2/2000	6 63	1.51	4.63	0.195700	0.267000	0.058000	0.520700	1.35%	0.062458	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/3/2000	6.65	1 51	4.66	0.195700	0.267000	0.058000	0.520700	1.35%	0.062894	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/4/2000	6.79	1.50	4.78	0.195700	0.267000	0.058000	0.520700	1.35%	0.064470	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/5/2000	6.78	1.50	4.78	0.195700	0.267000	0.058000	0.520700	1.35%	0.064530	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/6/2000	6 65	1.50	4.67	0.195700	0.267000	0.058000	0.520700	1.35%	0.063043	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
10/7/2000	6.29	1.50	4.42	0.195700	0.267000	0.058000	0.520700	1.35%	0.059624	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/8/2000	6.29	1.50	4.42	0.195700	0.267000	0.058000	0.520700	1.35%	0.059624	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/9/2000	6.29	1.50	4.42	0.195700	0.267000	0.058000	0.520700	1.35%	0.059624	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/10/2000	6.30	1.50	4.42	0.195700	0.267000	0.058000	0.520700	1.35%	0.059718	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/11/2000	6 42	1.50	4.50	0.195700	0.267000	0.058000	0.520700	1.35%	0.060787	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/12/2000	6.51	1.51	4.55	0.195700	0.267000	0.058000	0.520700	1.35%	0.061420	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
10/13/2000	7 01	1.51	4.88	0.195700	0.267000	0.058000	0.520700	1.35%	0.065923	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/14/2000	6.78	1.52	4.71	0.195700	0 267000	0.058000	0.520700	1.35%	0.063553	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/15/2000	6.78	1.52	4.71	0.195700	0.267000	0.058000	0.520700	1.35%	0.063553	0.262787	0.007561	0 007500	0.002200	0.280048	2.88%
10/16/2000	6.78	1 52	4.71	0.195700	0.267000	0.058000	0.520700	1.35%	0.063553	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%
10/17/2000	6.90	1.52	4.79	0.195700	0.267000	0.058000	0.520700	1.35%	0.064678	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/18/2000	6.93	1.52	4.81	0.195700	0.267000	0.058000	0.520700	1.35%	0.064938	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/19/2000	7.04	1.51	4.91	0.195700	0.267000	0.058000	0.520700	1.35%	0.066306	0.262787	0 007561	0.007500	0.002200	0.280048	2.88%
10/20/2000	6 57	1.51	4.58	0.195700	0.267000	0.058000	0.520700	1 35%	0.061894	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/21/2000	6.30	1 51	4.41	0.195700	0.267000	0.058000	0.520700	1.35%	0.059504	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/22/2000	6.30	1 51	4.41	0.195700	0.267000	0.058000	0.520700	1.35%	0.059504	0.262787	0.007561	0.007500	0.002200	0.280048	2 88%

		ANG Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[8]		
Flow Date	PGT-NW Fuel Charge	Distance	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/$10^3m^3$)	($Cdn/GJ)	($/MMBtu)
	(3) * (15)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
9/9/2000	0.123181	170.7	0 012662	0.000033	0.004343	0.081018	0.057830	0 90%	0 053955	0.038513	170 45	0 149717	0.106867
9/10/2000	0.123181	170 7	0 012662	0.000033	0.004343	0.081018	0.057830	0.90%	0 053955	0.038513	170.45	0.149717	0.106867
9/11/2000	0.123181	170 7	0 012662	0 000033	0 004343	0 081018	0.057830	0 90%	0.053955	0.038513	170.45	0.149717	0.106867
9/12/2000	0.126716	170 7	0.012662	0 000033	0 004343	0.081018	0.057756	0 90%	0.055575	0.039618	170.45	0 149717	0.106730
9/13/2000	0.127220	170 7	0.012662	0 000033	0 004343	0.081018	0.057659	0.90%	0.055890	0.039775	170.45	0 149717	0.106550
9/14/2000	0.129564	170 7	0.012662	0.000033	0.004343	0.081018	0.057608	0 90%	0.056970	0.040509	170 45	0 149717	0.106456
9/15/2000	0.132052	170.7	0 012662	0 000033	0.004343	0.081018	0.057488	0 90%	0 058185	0.041286	170.45	0.149717	0.106234
9/16/2000	0.136673	170 7	0 012662	0 000033	0.004343	0.081018	0.057585	0.90%	0.060120	0.042731	170 45	0 149717	0.106413
9/17/2000	0.136673	170 7	0 012662	0.000033	0.004343	0.081018	0.057585	0 90%	0 060120	0.042731	170 45	0 149717	0.106413
9/18/2000	0.136673	170.7	0 012662	0 000033	0 004343	0.081018	0.057585	0 90%	0.060120	0.042731	170 45	0 149717	0.106413
9/19/2000	0.130204	170 7	0.012662	0.000033	0.004343	0 081018	0.057349	0 90%	0.057510	0.040709	170 45	0.149717	0.105978
9/20/2000	0.132464	170.7	0 012662	0.000033	0.004343	0 081018	0.057446	0.90%	0 058410	0.041415	170.45	0.149717	0.106156
9/21/2000	0.127049	170.7	0 012662	0.000033	0.004343	0.081018	0.057628	0 90%	0 055845	0.039722	170 45	0 149717	0.106492
9/22/2000	0.132322	170.7	0.012662	0 000033	0 004343	0 081018	0.057473	0.90%	0 058320	0.041371	170 45	0.149717	0.106206
9/23/2000	0.133071	170.7	0 012662	0 000033	0.004343	0 081018	0.057399	0.90%	0 058725	0.041605	170.45	0 149717	0.106070
9/24/2000	0.133071	170 7	0 012662	0 000033	0.004343	0 081018	0.057399	0.90%	0 058725	0.041605	170.45	0.149717	0.106070
9/25/2000	0.133071	170.7	0.012662	0.000033	0.004343	0 081018	0.057399	0 90%	0.058725	0.041605	170 45	0.149717	0.106070
9/26/2000	0.131355	170.7	0.012662	0 000033	0.004343	0.081018	0.057407	0.90%	0.057960	0.041069	170 45	0 149717	0.106085
9/27/2000	0.131546	170 7	0.012662	0 000033	0.004343	0 081018	0.057446	0.90%	0.058005	0.041128	170.45	0 149717	0.106156
9/28/2000	0.133870	170 7	0.012662	0 000033	0 004343	0 081018	0.057131	0 90%	0.059355	0.041855	170.45	0.149717	0.105574
9/29/2000	0.134982	170.7	0.012662	0.000033	0 004343	0.081018	0.056872	0.90%	0.060120	0.042202	170 45	0 149717	0.105096
9/30/2000	0.133515	170.7	0.012662	0.000033	0 004343	0 081018	0.056721	0.90%	0.059625	0.041744	170 45	0.149717	0.104818
10/1/2000	0.133515	170 7	0.012662	0 000033	0.004355	0.081045	0.056740	1.10%	0.072876	0.051020	170.45	0 149717	0.104818
10/2/2000	0.133175	170.7	0.012662	0 000033	0 004355	0.081045	0.056597	1.10%	0 072876	0.050892	170 45	0 149717	0.104554
10/3/2000	0.134104	170 7	0.012662	0.000033	0.004355	0.081045	0.056777	1.10%	0.073151	0.051247	170 45	0 149717	0.104887
10/4/2000	0.137465	170.7	0.012662	0 000033	0.004355	0.081045	0.057042	1.10%	0.074636	0.052531	170.45	0.149717	0.105377
10/5/2000	0.137593	170.7	0.012662	0 000033	0.004355	0.081045	0.057180	1.10%	0.074526	0.052580	170.45	0.149717	0.105631
10/6/2000	0.134422	170.7	0 012662	0.000033	0 004355	0.081045	0.056955	1.10%	0.073096	0.051369	170 45	0 149717	0.105215
10/7/2000	0.127131	170.7	0.012662	0.000033	0 004355	0 081045	0.056951	1.10%	0.069135	0.048583	170.45	0 149717	0.105208
10/8/2000	0.127131	170.7	0.012662	0.000033	0.004355	0 081045	0.056951	1.10%	0.069135	0.048583	170.45	0.149717	0.105208
10/9/2000	0.127131	170.7	0 012662	0 000033	0.004355	0.081045	0.056951	1.10%	0 069135	0.048583	170 45	0 149717	0.105208
10/10/2000	0.127334	170 7	0.012662	0 000033	0.004355	0.081045	0.056951	1.10%	0.069245	0.048660	170 45	0.149717	0.105208
10/11/2000	0.129612	170 7	0.012662	0 000033	0.004355	0 081045	0.056841	1.10%	0.070621	0.049530	170 45	0 149717	0.105006
10/12/2000	0.130962	170.7	0.012662	0 000033	0.004355	0.081045	0.056683	1.10%	0.071556	0.050046	170 45	0.149717	0.104713
10/13/2000	0.140563	170.7	0.012662	0.000033	0 004355	0.081045	0.056496	1.10%	0.077056	0.053715	170 45	0 149717	0.104367
10/14/2000	0.135511	170.7	0 012662	0.000033	0.004355	0.081045	0.056273	1.10%	0.074581	0.051785	170 45	0 149717	0.103955
10/15/2000	0.135511	170.7	0 012662	0.000033	0.004355	0.081045	0.056273	1.10%	0.074581	0.051785	170 45	0.149717	0.103955
10/16/2000	0.135511	170 7	0 012662	0.000033	0.004355	0.081045	0.056273	1.10%	0.074581	0.051785	170.45	0 149717	0.103955
10/17/2000	0.137909	170.7	0.012662	0 000033	0.004355	0.081045	0.056314	1.10%	0.075846	0.052701	170.45	0.149717	0.104031
10/18/2000	0.138463	170.7	0.012662	0.000033	0.004355	0.081045	0.056254	1.10%	0.076231	0.052913	170 45	0.149717	0.103921
10/19/2000	0.141379	170.7	0.012662	0.000033	0.004355	0.081045	0.056582	1.10%	0.077386	0.054027	170.45	0.149717	0.104526
10/20/2000	0.131973	170.7	0.012662	0.000033	0.004355	0.081045	0.056556	1.10%	0.072271	0.050433	170.45	0.149717	0.104478
10/21/2000	0.126877	170.7	0.012662	0.000033	0.004355	0.081045	0.056702	1.10%	0.069300	0.048485	170 45	0 149717	0.104748
10/22/2000	0.126877	170.7	0.012662	0 000033	0.004355	0.081045	0.056702	1.10%	0.069300	0.048485	170.45	0.149717	0.104748

	Gas Daily: Daily Midpoint			PG&E: Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Del Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn:$US)	($US / MMBtu)	[redacted]	[redacted]	[redacted]	[redacted]		[redacted]	[redacted]	[redacted]	[redacted]		[redacted]	
	(1)	(2)	(1) *1.055056 / (2) (3)	(4)	(5)	(6)	(4) + (5) + (6) (7)	(8)	(3) * (8) (9)	(10)	(11)	(12)	(13)	(10) + (11) + (12) + (13) (14)	(15)
10/23/2000	6 30	1 51	4.41	0.195700	0 267000	0.058000	0.520700	1.35%	0.059504	0.262787	0.007561	0.007500	0 002200	0.280048	2.88%
10/24/2000	6 28	1 51	4.38	0.195700	0.267000	0.058000	0.520700	1.35%	0.059166	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/25/2000	6.29	1 52	4.38	0 195700	0 267000	0 058000	0.520700	1.35%	0.059081	0 262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/26/2000	6 10	1 52	4.24	0.195700	0 267000	0.058000	0.520700	1.35%	0.057209	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/27/2000	5 95	1 53	4.11	0.195700	0.267000	0.058000	0.520700	1.35%	0.055481	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/28/2000	5 79	1.53	3.99	0.195700	0.267000	0.058000	0.520700	1.35%	0.053816	0.262787	0 007561	0.007500	0.002200	0.280048	2.88%
10/29/2000	5.79	1 53	3.99	0.195700	0 267000	0 058000	0.520700	1 35%	0.053816	0.262787	0.007561	0.007500	0.002200	0.280048	2.88%
10/30/2000	5.79	1.53	3.99	0.195700	0.267000	0.058000	0.520700	1.35%	0.053816	0.262787	0 007561	0.007500	0.002200	0.280048	2 88%
10/31/2000	5.94	1.53	4.10	0.195700	0 267000	0.058000	0.520700	1.35%	0.055395	0.262787	0.007561	0.007500	0 002200	0.280048	2.88%
11/1/2000	5.82	1 53	4.02	0.195700	0.267000	0 073100	0.535800	1.35%	0.054312	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/2/2000	5 66	1 53	3.89	0 195700	0.267000	0.073100	0.535800	1 35%	0.052531	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/3/2000	5.91	1 53	4.06	0.195700	0 267000	0.073100	0.535800	1 35%	0.054846	0 262787	0.006575	0.007200	0 002200	0.278762	2.88%
11/4/2000	5 98	1 53	4.12	0 195700	0.267000	0.073100	0.535800	1.35%	0.055652	0 262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/5/2000	5 98	1 53	4.12	0 195700	0.267000	0 073100	0.535800	1 35%	0.055652	0 262787	0 006575	0.007200	0 002200	0.278762	2 88%
11/6/2000	5.98	1 53	4.12	0.195700	0.267000	0 073100	0.535800	1 35%	0.055652	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/7/2000	6 17	1.53	4.25	0 195700	0.267000	0.073100	0.535800	1 35%	0.057382	0.262787	0.006575	0.007200	0.002200	0.278762	2 88%
11/8/2000	6 50	1.54	4.44	0.195700	0 267000	0.073100	0.535800	1.35%	0.059947	0.262787	0.006575	0.007200	0.002200	0.278762	2 88%
11/9/2000	7.01	1.55	4.78	0.195700	0 267000	0.073100	0.535800	1.35%	0.064558	0.262787	0 006575	0.007200	0.002200	0.278762	2 88%
11/10/2000	7.50	1.55	5.11	0.195700	0 267000	0.073100	0.535800	1 35%	0.069051	0.262787	0.006575	0.007200	0.002200	0.278762	2 88%
11/11/2000	7.15	1.55	4.87	0.195700	0.267000	0 073100	0.535800	1 35%	0.065776	0.262787	0.006575	0 007200	0.002200	0.278762	2.88%
11/12/2000	7 15	1 55	4.87	0 195700	0.267000	0.073100	0.535800	1 35%	0.065776	0 262787	0 006575	0 007200	0.002200	0.278762	2 88%
11/13/2000	7 15	1 55	4.87	0.195700	0.267000	0.073100	0.535800	1.35%	0.065776	0 262787	0.006575	0 007200	0 002200	0.278762	2 88%
11/14/2000	7.55	1 54	5.16	0.195700	0.267000	0.073100	0.535800	1 35%	0.069625	0 262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/15/2000	7.34	1.55	5.00	0.195700	0 267000	0.073100	0.535800	1.35%	0.067449	0 262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/16/2000	7 66	1.55	5.21	0.195700	0 267000	0.073100	0.535800	1 35%	0.070285	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/17/2000	7 71	1.56	5.21	0.195700	0.267000	0.073100	0.535800	1.35%	0.070395	0.262787	0.006575	0 007200	0.002200	0.278762	2 88%
11/18/2000	7 23	1 56	4.89	0.195700	0.267000	0 073100	0.535800	1.35%	0.066000	0.262787	0.006575	0.007200	0 002200	0.278762	2 88%
11/19/2000	7.23	1.56	4.89	0.195700	0.267000	0.073100	0.535800	1.35%	0.066000	0 262787	0.006575	0.007200	0 002200	0.278762	2.88%
11/20/2000	7 23	1 56	4.89	0.195700	0.267000	0.073100	0.535800	1 35%	0.066000	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/21/2000	7 97	1.56	5.40	0.195700	0 267000	0.073100	0.535800	1.35%	0.072943	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/22/2000	8.14	1.55	5.55	0 195700	0.267000	0.073100	0.535800	1.35%	0.074885	0.262787	0.006575	0 007200	0.002200	0.278762	2 88%
11/23/2000	7.82	1.54	5.36	0.195700	0 267000	0.073100	0.535800	1.35%	0.072299	0 262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/24/2000	7.82	1.54	5.36	0.195700	0.267000	0.073100	0.535800	1.35%	0.072299	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/25/2000	7.82	1.53	5.37	0.195700	0.267000	0.073100	0.535800	1.35%	0.072525	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/26/2000	7 82	1 53	5.37	0.195700	0.267000	0.073100	0.535800	1.35%	0.072525	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
11/27/2000	7 82	1.53	5.37	0.195700	0.267000	0.073100	0.535800	1.35%	0.072525	0.262787	0.006575	0.007200	0 002200	0.278762	2 88%
11/28/2000	8.17	1 54	5.60	0.195700	0.267000	0.073100	0.535800	1.35%	0.075659	0 262787	0.006575	0 007200	0.002200	0.278762	2.88%
11/29/2000	7.72	1.54	5.29	0.195700	0.267000	0.073100	0.535800	1.35%	0.071378	0.262787	0.006575	0.007200	0.002200	0.278762	2 88%
11/30/2000	7.93	1.54	5.45	0.195700	0.267000	0.073100	0.535800	1.35%	0.073512	0.262787	0.006575	0 007200	0 002200	0.278762	2.88%
12/1/2000	8.29	1 54	5.68	0.195700	0.267000	0.075500	0.538200	1.35%	0.076682	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
12/2/2000	8.79	1 55	6.00	0.195700	0.267000	0.075500	0.538200	1.35%	0.080993	0.262787	0.006575	0.007200	0 002200	0.278762	2.88%
12/3/2000	8.79	1.55	6.00	0.195700	0 267000	0.075500	0.538200	1.35%	0.080993	0.262787	0 006575	0 007200	0.002200	0.278762	2 88%
12/4/2000	8.79	1.55	6.00	0.195700	0.267000	0.075500	0.538200	1.35%	0.080993	0.262787	0.006575	0.007200	0 002200	0.278762	2 88%
12/5/2000	9.82	1.54	6.71	0.195700	0.267000	0.075500	0.538200	1.35%	0.090600	0.262787	0.006575	0.007200	0 002200	0.278762	2.88%

		ANG· Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[6]		
Flow Date	PGT-NW Fuel Charge	Distance	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/10³m³)	($Cdn/GJ)	($/MMBtu)
	(3) * (15)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
10/23/2000	0.126877	170.7	0 012662	0.000033	0.004355	0 081045	0.056702	1.10%	0.069300	0.048485	170 45	0 149717	0.104748
10/24/2000	0.126156	170.7	0 012662	0.000033	0.004355	0 081045	0.056559	1.10%	0 069080	0.048210	170.45	0.149717	0.104485
10/25/2000	0.125974	170 7	0.012662	0.000033	0.004355	0.081045	0.056388	1 10%	0 069190	0.048140	170 45	0 149717	0.104168
10/26/2000	0.121984	170.7	0.012662	0.000033	0.004355	0.081045	0.056302	1 10%	0 067100	0.046615	170 45	0.149717	0.104010
10/27/2000	0.118299	170.7	0.012662	0.000033	0.004355	0.081045	0.055978	1.10%	0.065450	0.045207	170.45	0 149717	0.103411
10/28/2000	0.114748	170.7	0 012662	0.000033	0 004355	0.081045	0.055847	1.10%	0.063635	0.043850	170 45	0.149717	0.103168
10/29/2000	0.114748	170.7	0.012662	0.000033	0 004355	0 081045	0.055847	1.10%	0.063635	0.043850	170.45	0.149717	0.103168
10/30/2000	0.114748	170.7	0.012662	0.000033	0 004355	0.081045	0.055847	1.10%	0.063635	0.043850	170 45	0 149717	0.103168
10/31/2000	0.118115	170.7	0.012662	0.000033	0.004355	0.081045	0.055985	1.10%	0 065340	0.045137	170 45	0.149717	0.103424
11/1/2000	0.115805	170.7	0.012662	0.000033	0.004355	0.081045	0.056022	1.30%	0.075660	0.052300	170 45	0 149717	0.103492
11/2/2000	0.112008	170.7	0 012662	0.000033	0.004355	0 081045	0.055766	1 30%	0 073515	0.050585	170.45	0.149717	0.103020
11/3/2000	0.116944	170 7	0 012662	0.000033	0 004355	0 081045	0.055712	1.30%	0.076830	0.052815	170.45	0.149717	0.102919
11/4/2000	0.118662	170 7	0 012662	0.000033	0.004355	0.081045	0.055868	1 30%	0.077740	0.053590	170.45	0 149717	0.103208
11/5/2000	0.118662	170.7	0 012662	0 000033	0 004355	0 081045	0.055868	1 30%	0.077740	0.053590	170.45	0.149717	0.103208
11/6/2000	0.118662	170.7	0 012662	0.000033	0.004355	0 081045	0.055868	1.30%	0.077740	0.053590	170.45	0 149717	0.103208
11/7/2000	0.122352	170.7	0.012662	0 000033	0 004355	0.081045	0.055832	1 30%	0.080210	0.055257	170.45	0.149717	0.103141
11/8/2000	0.127821	170.7	0.012662	0.000033	0.004355	0 081045	0.055409	1.30%	0.084435	0.057727	170.45	0.149717	0.102359
11/9/2000	0.137652	170 7	0 012662	0.000033	0.004355	0.081045	0.055326	1.30%	0.091065	0.062167	170.45	0.149717	0.102206
11/10/2000	0.147233	170 7	0 012662	0.000033	0.004355	0.081045	0.055308	1.30%	0.097435	0.066494	170.45	0.149717	0.102173
11/11/2000	0.140249	170.7	0 012662	0.000033	0.004355	0.081045	0.055265	1.30%	0.092885	0.063340	170.45	0.149717	0.102094
11/12/2000	0.140249	170.7	0 012662	0.000033	0.004355	0 081045	0.055265	1.30%	0.092885	0.063340	170.45	0.149717	0.102094
11/13/2000	0.140249	170.7	0 012662	0.000033	0.004355	0.081045	0.055265	1.30%	0.092885	0.063340	170.45	0.149717	0.102094
11/14/2000	0.148458	170.7	0 012662	0.000033	0.004355	0.081045	0.055362	1.30%	0.098150	0.067047	170.45	0.149717	0.102273
11/15/2000	0.143816	170.7	0.012662	0.000033	0.004355	0.081045	0.055166	1.30%	0 095420	0.064951	170.45	0.149717	0.101910
11/16/2000	0.149864	170.7	0.012662	0 000033	0 004355	0.081045	0.055084	1 30%	0.099580	0.067682	170.45	0.149717	0.101759
11/17/2000	0.150098	170 7	0 012662	0.000033	0.004355	0.081045	0.054812	1.30%	0.100230	0.067787	170.45	0.149717	0.101256
11/18/2000	0.140728	170 7	0 012662	0 000033	0.004355	0 081045	0.054840	1.30%	0 093925	0.063556	170.45	0 149717	0.101308
11/19/2000	0.140728	170.7	0 012662	0.000033	0.004355	0.081045	0.054840	1.30%	0.093925	0.063556	170 45	0.149717	0.101308
11/20/2000	0.140728	170.7	0 012662	0.000033	0.004355	0.081045	0.054840	1.30%	0.093925	0.063556	170.45	0.149717	0.101308
11/21/2000	0.155531	170 7	0 012662	0.000033	0.004355	0.081045	0.054978	1.30%	0 103545	0.070241	170.45	0.149717	0.101562
11/22/2000	0.159671	170 7	0 012662	0.000033	0.004355	0.081045	0.055262	1.30%	0 105755	0.072111	170.45	0.149717	0.102088
11/23/2000	0.154158	170 7	0.012662	0.000033	0 004355	0.081045	0.055538	1.30%	0.101595	0.069621	170.45	0.149717	0.102598
11/24/2000	0.154158	170.7	0.012662	0.000033	0.004355	0 081045	0.055538	1.30%	0.101595	0.069621	170.45	0 149717	0.102598
11/25/2000	0.154640	170.7	0 012662	0.000033	0.004355	0.081045	0.055712	1 30%	0.101595	0.069839	170.45	0.149717	0.102919
11/26/2000	0.154640	170.7	0 012662	0 000033	0 004355	0.081045	0.055712	1.30%	0.101595	0.069839	170.45	0.149717	0.102919
11/27/2000	0.154640	170.7	0.012662	0.000033	0.004355	0.081045	0.055712	1.30%	0.101595	0.069839	170 45	0.149717	0.102919
11/28/2000	0.161324	170.7	0.012662	0.000033	0.004355	0.081045	0.055629	1 30%	0.106145	0.072857	170.45	0.149717	0.102765
11/29/2000	0.152195	170.7	0.012662	0.000033	0.004355	0.081045	0.055506	1.30%	0.100360	0.068734	170 45	0 149717	0.102538
11/30/2000	0.156745	170.7	0.012662	0.000033	0 004355	0.081045	0.055686	1.30%	0.103025	0.070789	170.45	0.149717	0.102872
12/1/2000	0.163503	170 7	0 012662	0.000033	0.004343	0 081018	0.055546	1.40%	0.115990	0.079521	170.45	0.149717	0.102645
12/2/2000	0.172695	170.7	0.012662	0.000033	0.004343	0.081018	0.055298	1.40%	0.123060	0.083992	170.45	0 149717	0.102187
12/3/2000	0.172695	170.7	0.012662	0.000033	0.004343	0.081018	0.055298	1.40%	0.123060	0.083992	170.45	0 149717	0.102187
12/4/2000	0.172695	170 7	0.012662	0.000033	0.004343	0 081018	0.055298	1.40%	0.123060	0.083992	170.45	0 149717	0.102187
12/5/2000	0.193181	170.7	0.012662	0.000033	0.004343	0.081018	0.055369	1.40%	0.137480	0.093956	170.45	0.149717	0.102319

	Gas Daily: Daily Midpoint			PG&E: Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Del. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn:$US)	($US / MMBtu)		($/MMBtu)							($/MMBtu)			
	(1)	(2)	(1) *1.055056 / (2) (3)	(4)	(5)	(6)	(4) + (5) + (6) (7)	(8)	(3) * (8) (9)	(10)	(11)	(12)	(13)	(10) + (11) + (12) + (13) (14)	(15)
12/6/2000	10 55	1 53	7.26	0.195700	0.267000	0.075500	0.538200	1 35%	0.098066	0.262787	0 006575	0.007200	0 002200	0.278762	2 88%
12/7/2000	11 18	1.52	7.75	0.195700	0.267000	0 075500	0.538200	1.35%	0.104605	0.262787	0.006575	0.007200	0.002200	0.278762	2 88%
12/8/2000	11 21	1.52	7.78	0 195700	0.267000	0.075500	0.538200	1.35%	0.104963	0 262787	0.006575	0.007200	0.002200	0.278762	2 88%
12/9/2000	11.12	1 52	7.70	0.195700	0.267000	0.075500	0.538200	1.35%	0.104016	0.262787	0.006575	0 007200	0 002200	0.278762	2 88%
12/10/2000	11 12	1.52	7.70	0 195700	0.267000	0.075500	0.538200	1 35%	0.104016	0.262787	0.006575	0.007200	0.002200	0.278762	2 88%
12/11/2000	11.12	1 52	7.70	0.195700	0.267000	0.075500	0.538200	1.35%	0.104016	0.262787	0.006575	0.007200	0 002200	0.278762	2.88%
12/12/2000	15.16	1.52	10.49	0.195700	0.267000	0 075500	0.538200	1 35%	0.141601	0.262787	0.006575	0 007200	0.002200	0.278762	2.88%
12/13/2000	11 96	1.52	8.30	0.195700	0.267000	0.075500	0.538200	1.35%	0.112035	0.262787	0 006575	0 007200	0.002200	0.278762	2.88%
12/14/2000	10 88	1.52	7.57	0.195700	0.267000	0.075500	0.538200	1.35%	0.102187	0 262787	0.006575	0.007200	0.002200	0.278762	2.88%
12/15/2000	10 71	1 52	7.44	0.195700	0.267000	0.075500	0.538200	1 35%	0.100504	0 262787	0 006575	0.007200	0.002200	0.278762	2.88%
12/16/2000	11 89	1 53	8.22	0.195700	0.267000	0 075500	0.538200	1 35%	0.111022	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
12/17/2000	11 89	1.53	8.22	0.195700	0.267000	0 075500	0.538200	1.35%	0.111022	0.262787	0.006575	0 007200	0.002200	0.278762	2 88%
12/18/2000	11 89	1.53	8.22	0.195700	0.267000	0 075500	0.538200	1.35%	0.111022	0 262787	0.006575	0.007200	0.002200	0.278762	2 88%
12/19/2000	11 97	1 52	8.29	0.195700	0.267000	0.075500	0.538200	1.35%	0.111971	0.262787	0 006575	0.007200	0 002200	0.278762	2.88%
12/20/2000	12 20	1 52	8.46	0.195700	0.267000	0.075500	0.538200	1.35%	0.114161	0.262787	0.006575	0.007200	0 002200	0.278762	2.88%
12/21/2000	13 55	1.52	9.41	0 195700	0.267000	0.075500	0.538200	1 35%	0.127050	0.262787	0.006575	0.007200	0 002200	0.278762	2.88%
12/22/2000	13.94	1 52	9.69	0.195700	0 267000	0 075500	0.538200	1 35%	0.130854	0.262787	0 006575	0.007200	0.002200	0.278762	2.88%
12/23/2000	13 05	1.51	9.12	0.195700	0.267000	0.075500	0.538200	1.35%	0.123057	0 262787	0.006575	0.007200	0.002200	0.278762	2.88%
12/24/2000	13 05	1.51	9.12	0.195700	0.267000	0.075500	0.538200	1.35%	0.123057	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
12/25/2000	13.05	1.51	9.12	0.195700	0.267000	0 075500	0.538200	1 35%	0.123057	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
12/26/2000	13.05	1.51	9.12	0.195700	0.267000	0.075500	0.538200	1.35%	0.123057	0.262787	0.006575	0.007200	0 002200	0.278762	2 88%
12/27/2000	13 08	1 51	9.13	0.195700	0.267000	0.075500	0.538200	1.35%	0.123250	0.262787	0.006575	0 007200	0.002200	0.278762	2.88%
12/28/2000	13 09	1 51	9.16	0.195700	0.267000	0.075500	0.538200	1.35%	0.123647	0.262787	0.006575	0.007200	0 002200	0.278762	2.88%
12/29/2000	12.71	1 50	8.94	0 195700	0.267000	0.075500	0.538200	1.35%	0.120681	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
12/30/2000	13.40	1 50	9.44	0 195700	0.267000	0.075500	0.538200	1.35%	0.127507	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
12/31/2000	13.40	1.50	9.44	0.195700	0.267000	0.075500	0.538200	1.35%	0.127507	0.262787	0.006575	0.007200	0.002200	0.278762	2.88%
1/1/2001	13.40	1.50	9.44	0.199500	0.268000	0.107400	0.574900	1 35%	0.127507	0 262787	0.002959	0.007000	0.002200	0.274946	3.12%
1/2/2001	13.40	1 50	9.44	0.199500	0.268000	0.107400	0.574900	1 35%	0.127507	0.262787	0.002959	0.007000	0.002200	0.274946	3.12%
1/3/2001	12 05	1.50	8.49	0.199500	0.268000	0.107400	0.574900	1.35%	0.114558	0.262787	0.002959	0.007000	0.002200	0.274946	3.12%
1/4/2001	11 13	1 50	7.83	0.199500	0 268000	0 107400	0.574900	1.35%	0.105743	0.262787	0.002959	0.007000	0.002200	0.274946	3.12%
1/5/2001	11.21	1 50	7.88	0 199500	0 268000	0.107400	0.574900	1.35%	0.106423	0 262787	0.002959	0.007000	0.002200	0.274946	3 12%
1/6/2001	12 07	1 49	8.52	0 199500	0.268000	0.107400	0.574900	1.35%	0.115040	0 262787	0 002959	0.007000	0.002200	0.274946	3 12%
1/7/2001	12 07	1 49	8.52	0 199500	0.268000	0 107400	0.574900	1.35%	0.115040	0 262787	0 002959	0.007000	0.002200	0.274946	3 12%
1/8/2001	12 07	1.49	8.52	0 199500	0.268000	0.107400	0.574900	1 35%	0.115040	0.262787	0.002959	0 007000	0.002200	0.274946	3 12%
1/9/2001	12 75	1.50	8.98	0.199500	0.268000	0.107400	0.574900	1 35%	0.121238	0.262787	0.002959	0 007000	0.002200	0.274946	3 12%
1/10/2001	12 88	1.50	9.06	0.199500	0.268000	0.107400	0.574900	1 35%	0.122312	0.262787	0 002959	0 007000	0 002200	0.274946	3 12%
1/11/2001	12 79	1.50	9.01	0.199500	0.268000	0 107400	0.574900	1 35%	0.121578	0.262787	0.002959	0.007000	0 002200	0.274946	3 12%
1/12/2001	11 69	1 50	8.24	0.199500	0.268000	0.107400	0.574900	1 35%	0.111247	0.262787	0 002959	0.007000	0.002200	0.274946	3 12%
1/13/2001	11.32	1.50	7.94	0.199500	0.268000	0.107400	0.574900	1.35%	0.107177	0.262787	0.002959	0.007000	0.002200	0.274946	3 12%
1/14/2001	11.32	1.50	7.94	0.199500	0.268000	0.107400	0.574900	1.35%	0.107177	0 262787	0.002959	0 007000	0.002200	0.274946	3.12%
1/15/2001	11 32	1.50	7.94	0.199500	0.268000	0.107400	0.574900	1 35%	0.107177	0.262787	0.002959	0 007000	0 002200	0.274946	3.12%
1/16/2001	11 32	1.50	7.94	0.199500	0 268000	0.107400	0.574900	1.35%	0.107177	0 262787	0 002959	0 007000	0.002200	0.274946	3 12%
1/17/2001	10 71	1.51	7.47	0 199500	0.268000	0.107400	0.574900	1.35%	0.100823	0 262787	0 002959	0.007000	0.002200	0.274946	3.12%
1/18/2001	10 37	1 52	7.21	0.199500	0.268000	0.107400	0.574900	1.35%	0.097369	0 262787	0.002959	0 007000	0.002200	0.274946	3.12%

		ANG Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[6]		
Flow Date	PGT-NW Fuel Charge	Distanc e	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/10³m³)	($Cdn/GJ)	($/MMBtu)
	(3) * (16)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37.45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
12/6/2000	0.209099	170.7	0.012662	0.000033	0.004343	0.081018	0.055785	1.40%	0.147700	0.101698	170 45	0.149717	0.103087
12/7/2000	0.223041	170.7	0.012662	0 000033	0 004343	0 081018	0.056151	1.40%	0.156520	0.108479	170 45	0 149717	0.103764
12/8/2000	0.223805	170.7	0 012662	0 000033	0.004343	0 081018	0.056218	1 40%	0.156870	0.108850	170 45	0.149717	0.103887
12/9/2000	0.221786	170 7	0.012662	0.000033	0 004343	0 081018	0.056136	1.40%	0 155680	0.107868	170 45	0 149717	0.103737
12/10/2000	0.221786	170.7	0.012662	0 000033	0.004343	0.081018	0.056136	1.40%	0.155680	0.107868	170 45	0.149717	0.103737
12/11/2000	0.221786	170.7	0 012662	0 000033	0.004343	0 081018	0.056136	1 40%	0.155680	0.107868	170.45	0.149717	0.103737
12/12/2000	0.301927	170 7	0 012662	0 000033	0 004343	0.081018	0.056055	1.40%	0 212239	0.146845	170.45	0 149717	0.103587
12/13/2000	0.238885	170.7	0 012662	0.000033	0.004343	0.081018	0.056218	1 40%	0 167440	0.116184	170 45	0.149717	0.103887
12/14/2000	0.217887	170.7	0 012662	0.000033	0.004343	0.081018	0.056366	1.40%	0 152320	0.105971	170 45	0 149717	0.104161
12/15/2000	0.214297	170.7	0 012662	0.000033	0 004343	0 081018	0.056344	1.40%	0 149870	0.104226	170 45	0.149717	0.104120
12/16/2000	0.236724	170 7	0 012662	0.000033	0 004343	0 081018	0.056037	1.40%	0.166460	0.115133	170 45	0.149717	0.103553
12/17/2000	0.236724	170.7	0 012662	0 000033	0 004343	0.081018	0.056037	1 40%	0.166460	0.115133	170 45	0.149717	0.103553
12/18/2000	0.236724	170 7	0.012662	0 000033	0.004343	0.081018	0.056037	1.40%	0.166460	0.115133	170.45	0.149717	0.103553
12/19/2000	0.238749	170.7	0.012662	0 000033	0 004343	0.081018	0.056162	1 40%	0.167510	0.116118	170 45	0 149717	0.103784
12/20/2000	0.243419	170 7	0 012662	0 000033	0.004343	0.081018	0.056181	1.40%	0.170730	0.118389	170.45	0 149717	0.103819
12/21/2000	0.270900	170.7	0.012662	0.000033	0.004343	0 081018	0.056292	1.40%	0.189629	0.131755	170 45	0 149717	0.104024
12/22/2000	0.279012	170 7	0.012662	0.000033	0.004343	0 081018	0.056355	1.40%	0.195089	0.135700	170 45	0 149717	0.104140
12/23/2000	0.262386	170.7	0.012662	0.000033	0.004343	0 081018	0.056612	1.40%	0.182629	0.127614	170 45	0.149717	0.104616
12/24/2000	0.262386	170 7	0.012662	0.000033	0.004343	0 081018	0.056612	1.40%	0.182629	0.127614	170.45	0.149717	0.104616
12/25/2000	0.262386	170 7	0 012662	0 000033	0 004343	0.081018	0.056612	1.40%	0.182629	0.127614	170.45	0.149717	0.104616
12/26/2000	0.262386	170.7	0 012662	0.000033	0.004343	0.081018	0.056612	1.40%	0.182629	0.127614	170.45	0.149717	0.104616
12/27/2000	0.262798	170.7	0.012662	0.000033	0.004343	0.081018	0.056571	1 40%	0.183049	0.127814	170 45	0.149717	0.104540
12/28/2000	0.263644	170.7	0.012662	0.000033	0.004343	0.081018	0.056710	1.40%	0.183189	0.128226	170.45	0.149717	0.104797
12/29/2000	0.257319	170.7	0.012662	0.000033	0.004343	0.081018	0.057005	1.40%	0.177869	0.125150	170.45	0.149717	0.105342
12/30/2000	0.271874	170.7	0.012662	0.000033	0.004343	0 081018	0.057127	1.40%	0.187529	0.132229	170.45	0.149717	0.105567
12/31/2000	0.271874	170 7	0.012662	0.000033	0.004343	0.081018	0.057127	1.40%	0.187529	0.132229	170.45	0.149717	0.105567
1/1/2001	0.295012	170.7	0 012814	0.000030	0.003573	0.080652	0.056869	1.40%	0.187529	0.132229	170.45	0 149717	0.105567
1/2/2001	0.295012	170.7	0.012814	0.000030	0.003573	0.080652	0.056869	1.40%	0.187529	0.132229	170.45	0.149717	0.105567
1/3/2001	0.265054	170.7	0 012814	0.000030	0.003573	0.080652	0.056797	1 40%	0.168700	0.118801	170.45	0.149717	0.105433
1/4/2001	0.244658	170 7	0 012814	0.000030	0.003573	0.080652	0.056785	1.40%	0.155750	0.109659	170.45	0.149717	0.105412
1/5/2001	0.246232	170 7	0.012814	0.000030	0 003573	0.080652	0.056717	1.40%	0.156940	0.110365	170.45	0.149717	0.105286
1/6/2001	0.266169	170.7	0.012814	0.000030	0.003573	0.080652	0.056941	1.40%	0.168980	0.119301	170.45	0.149717	0.105701
1/7/2001	0.266169	170.7	0.012814	0.000030	0.003573	0.080652	0.056941	1.40%	0.168980	0.119301	170.45	0.149717	0.105701
1/8/2001	0.266169	170.7	0.012814	0.000030	0.003573	0.080652	0.056941	1.40%	0 168980	0.119301	170.45	0.149717	0.105701
1/9/2001	0.280509	170.7	0.012814	0 000030	0.003573	0.080652	0.056831	1 40%	0.178429	0.125728	170.45	0 149717	0.105497
1/10/2001	0.282993	170 7	0.012814	0.000030	0.003573	0.080652	0.056755	1.40%	0.180249	0.126841	170.45	0 149717	0.105356
1/11/2001	0.281296	170.7	0.012814	0.000030	0.003573	0.080652	0.056812	1.40%	0.178989	0.126081	170.45	0 149717	0.105461
1/12/2001	0.257393	170.7	0.012814	0.000030	0.003573	0.080652	0.056854	1.40%	0.163660	0.115367	170.45	0.149717	0.105539
1/13/2001	0.247976	170.7	0 012814	0.000030	0.003573	0.080652	0.056589	1 40%	0.158410	0.111146	170.45	0.149717	0.105048
1/14/2001	0.247976	170.7	0.012814	0.000030	0.003573	0.080652	0.056589	1.40%	0.158410	0.111146	170.45	0.149717	0.105048
1/15/2001	0.247976	170.7	0 012814	0.000030	0.003573	0.080652	0.056589	1.40%	0.158410	0.111146	170 45	0 149717	0.105048
1/16/2001	0.247976	170.7	0 012814	0 000030	0.003573	0.080652	0.056589	1.40%	0.158410	0.111146	170.45	0.149717	0.105048
1/17/2001	0.233273	170.7	0.012814	0 000030	0.003573	0.080652	0.056267	1.40%	0.149870	0.104557	170.45	0.149717	0.104450
1/18/2001	0.225283	170.7	0.012814	0.000030	0.003573	0.080652	0.056122	1.40%	0.145110	0.100975	170.45	0.149717	0.104182

	Gas Daily: Daily Midpoint			PG&E: Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Del. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn $US)	($US / MMBtu)		($/MMBtu)							($/MMBtu)			
	(1)	(2)	(1) *1.055056 / (2) (3)	(4)	(5)	(6)	(4) + (5) + (6) (7)	(8)	(3) * (8) (9)	(10)	(11)	(12)	(13)	(10) + (11) + (12) + (13) (14)	(15)
1/19/2001	9 11	1.52	6.34	0 199500	0 268000	0.107400	0.574900	1.35%	0.085619	0.262787	0 002959	0 007000	0 002200	0.274946	3 12%
1/20/2001	9 80	1 51	6.86	0 199500	0.268000	0.107400	0.574900	1.35%	0.092564	0.262787	0.002959	0 007000	0 002200	0.274946	3.12%
1/21/2001	9 80	1 51	6.86	0.199500	0.268000	0 107400	0.574900	1.35%	0.092564	0.262787	0.002959	0.007000	0 002200	0.274946	3 12%
1/22/2001	9 80	1 51	6.86	0.199500	0.268000	0.107400	0.574900	1.35%	0.092564	0 262787	0.002959	0.007000	0 002200	0.274946	3 12%
1/23/2001	9 77	1 51	6.84	0 199500	0 268000	0.107400	0.574900	1.35%	0.092275	0.262787	0 002959	0 007000	0.002200	0.274946	3 12%
1/24/2001	9 08	1 51	6.33	0.199500	0 268000	0 107400	0.574900	1.35%	0.085454	0 262787	0 002959	0.007000	0.002200	0.274946	3.12%
1/25/2001	9.05	1 51	6.33	0.199500	0 268000	0.107400	0.574900	1 35%	0.085431	0.262787	0 002959	0.007000	0 002200	0.274946	3.12%
1/26/2001	9 51	1 51	6.66	0 199500	0 268000	0.107400	0.574900	1 35%	0.089907	0.262787	0 002959	0 007000	0.002200	0.274946	3 12%
1/27/2001	9 04	1 50	6.35	0 199500	0 268000	0 107400	0.574900	1 35%	0.085782	0 262787	0.002959	0.007000	0.002200	0.274946	3 12%
1/28/2001	9 04	1 50	6.35	0.199500	0 268000	0 107400	0.574900	1.35%	0.085782	0 262787	0 002959	0 007000	0.002200	0.274946	3 12%
1/29/2001	9 04	1.50	6.35	0 199500	0.268000	0 107400	0.574900	1.35%	0.085782	0 262787	0 002959	0 007000	0.002200	0.274946	3.12%
1/30/2001	8 47	1 50	5.96	0.199500	0.268000	0.107400	0.574900	1.35%	0.080460	0.262787	0 002959	0 007000	0 002200	0.274946	3 12%
1/31/2001	7 28	1 50	5.13	0.199500	0.268000	0 107400	0.574900	1 35%	0.069196	0 262787	0.002959	0 007000	0.002200	0.274946	3 12%
2/1/2001	7 49	1 49	5.29	0 199500	0 268000	0.173000	0.640500	1 35%	0.071369	0 262787	0 002959	0 007000	0 002200	0.274946	3 55%
2/2/2001	7 53	1 49	5.32	0 199500	0 268000	0.173000	0.640500	1 35%	0.071822	0.262787	0 002959	0.007000	0 002200	0.274946	3 55%
2/3/2001	8 58	1.51	6.01	0 199500	0 268000	0.173000	0.640500	1.35%	0.081153	0.262787	0 002959	0.007000	0.002200	0.274946	3 55%
2/4/2001	8 58	1 51	6.01	0 199500	0.268000	0.173000	0.640500	1.35%	0.081153	0 262787	0 002959	0 007000	0.002200	0.274946	3 55%
2/5/2001	8 58	1 51	6.01	0 199500	0 268000	0.173000	0.640500	1.35%	0.081153	0.262787	0 002959	0.007000	0.002200	0.274946	3 55%
2/6/2001	7 52	1.51	5.26	0 199500	0.268000	0 173000	0.640500	1.35%	0.071027	0.262787	0.002959	0 007000	0.002200	0.274946	3.55%
2/7/2001	7 92	1 51	5.53	0.199500	0 268000	0.173000	0.640500	1.35%	0.074657	0.262787	0.002959	0 007000	0 002200	0.274946	3.55%
2/8/2001	8.13	1 51	5.67	0.199500	0.268000	0 173000	0.640500	1 35%	0.076554	0.262787	0.002959	0.007000	0 002200	0.274946	3.55%
2/9/2001	8.76	1.51	6.12	0.199500	0.268000	0.173000	0.640500	1.35%	0.082685	0.262787	0.002959	0 007000	0.002200	0.274946	3.55%
2/10/2001	8 61	1.52	5.97	0 199500	0.268000	0.173000	0.640500	1.35%	0.080654	0.262787	0.002959	0.007000	0.002200	0.274946	3.55%
2/11/2001	8 61	1 52	5.97	0 199500	0 268000	0.173000	0.640500	1.35%	0.080654	0.262787	0.002959	0.007000	0 002200	0.274946	3.55%
2/12/2001	8 61	1.52	5.97	0.199500	0.268000	0.173000	0.640500	1.35%	0.080654	0.262787	0.002959	0.007000	0.002200	0.274946	3.55%
2/13/2001	7 75	1.52	5.37	0.199500	0.268000	0.173000	0.640500	1.35%	0.072555	0.262787	0.002959	0.007000	0 002200	0.274946	3.55%
2/14/2001	7 88	1.53	5.44	0.199500	0.268000	0.173000	0.640500	1.35%	0.073373	0.262787	0.002959	0.007000	0.002200	0.274946	3.55%
2/15/2001	8 42	1.53	5.82	0.199500	0.268000	0.173000	0.640500	1.35%	0.078513	0.262787	0.002959	0.007000	0.002200	0.274946	3 55%
2/16/2001	7.74	1 54	5.31	0.199500	0.268000	0.173000	0.640500	1 35%	0.071735	0.262787	0.002959	0.007000	0 002200	0.274946	3.55%
2/17/2001	7.64	1.54	5.23	0 199500	0.268000	0.173000	0.640500	1.35%	0.070620	0.262787	0.002959	0.007000	0.002200	0.274946	3.55%
2/18/2001	7 64	1.54	5.23	0.199500	0.268000	0.173000	0.640500	1.35%	0.070620	0 262787	0.002959	0.007000	0.002200	0.274946	3.55%
2/19/2001	7 64	1.54	5.23	0.199500	0.268000	0.173000	0.640500	1.35%	0.070620	0 262787	0.002959	0.007000	0.002200	0.274946	3.55%
2/20/2001	7.64	1.54	5.23	0.199500	0.268000	0.173000	0.640500	1.35%	0.070620	0.262787	0 002959	0.007000	0.002200	0.274946	3.55%
2/21/2001	7 42	1.54	5.09	0.199500	0.268000	0.173000	0.640500	1 35%	0.068761	0.262787	0.002959	0.007000	0.002200	0.274946	3.55%
2/22/2001	7 40	1.54	5.07	0.199500	0.268000	0.173000	0.640500	1.35%	0.068493	0.262787	0.002959	0.007000	0.002200	0.274946	3.55%
2/23/2001	7 20	1.54	4.94	0.199500	0.268000	0.173000	0.640500	1 35%	0.066687	0.262787	0 002959	0 007000	0.002200	0.274946	3.55%
2/24/2001	7.23	1 53	4.98	0.199500	0.268000	0.173000	0.640500	1.35%	0.067198	0.262787	0.002959	0.007000	0.002200	0.274946	3.55%
2/25/2001	7 23	1.53	4.98	0.199500	0.268000	0.173000	0.640500	1.35%	0.067198	0.262787	0 002959	0 007000	0.002200	0.274946	3 55%
2/26/2001	7.23	1.53	4.98	0.199500	0.268000	0.173000	0.640500	1.35%	0.067198	0.262787	0.002959	0.007000	0 002200	0.274946	3.55%
2/27/2001	7.35	1.53	5.08	0 199500	0.268000	0.173000	0.640500	1.35%	0.068598	0.262787	0.002959	0 007000	0 002200	0.274946	3.55%
2/28/2001	7 41	1 53	5.10	0 199500	0.268000	0.173000	0.640500	1.35%	0.068892	0.262787	0.002959	0.007000	0.002200	0.274946	3.55%
3/1/2001	7.38	1 55	5.03	0.199500	0.268000	0.176700	0.644200	1.35%	0.067924	0.262787	0.002959.	0.007000	0.002200	0.274946	3.43%
3/2/2001	7.25	1.55	4.94	0.199500	0.268000	0.176700	0.644200	1.35%	0.066623	0.262787	0.002959	0.007000	0.002200	0.274946	3.43%
3/3/2001	7.29	1.55	4.97	0.199500	0.268000	0.176700	0.644200	1.35%	0.067051	0.262787	0.002959	0.007000	0 002200	0.274946	3 43%

		ANG. Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[6]		
Flow Date	PGT-NW Fuel Charge	Distanc e	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/10^{3}m^3)	($Cdn/GJ)	($/MMBtu)
	(3) * (15)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
1/19/2001	0.198097	170 7	0.012814	0 000030	0.003573	0.080652	0.056148	1.40%	0.127540	0.088790	170.45	0.149717	0.104230
1/20/2001	0.214166	170 7	0 012814	0.000030	0 003573	0.080652	0.056457	1.40%	0.137130	0.095992	170 45	0.149717	0.104804
1/21/2001	0.214166	170 7	0 012814	0.000030	0.003573	0.080652	0.056457	1.40%	0 137130	0.095992	170.45	0 149717	0.104804
1/22/2001	0.214166	170.7	0.012814	0.000030	0 003573	0.080652	0.056457	1.40%	0.137130	0.095992	170.45	0.149717	0.104804
1/23/2001	0.213496	170.7	0.012814	0.000030	0.003573	0.080652	0.056454	1 40%	0.136710	0.095692	170.45	0.149717	0.104797
1/24/2001	0.197715	170 7	0.012814	0 000030	0.003573	0 080652	0.056256	1 40%	0.127050	0.088619	170.45	0 149717	0.104429
1/25/2001	0.197662	170.7	0 012814	0.000030	0.003573	0.080652	0.056428	1.40%	0.126630	0.088595	170.45	0.149717	0.104748
1/26/2001	0.208017	170.7	0 012814	0.000030	0.003573	0.080652	0.056480	1.40%	0.133140	0.093236	170.45	0.149717	0.104845
1/27/2001	0.198474	170.7	0.012814	0.000030	0.003573	0.080652	0.056691	1 40%	0.126560	0.088959	170 45	0.149717	0.105237
1/28/2001	0.198474	170 7	0 012814	0.000030	0.003573	0 080652	0.056691	1.40%	0 126560	0.088959	170.45	0.149717	0.105237
1/29/2001	0.198474	170.7	0.012814	0.000030	0.003573	0.080652	0.056691	1.40%	0.126560	0.088959	170.45	0.149717	0.105237
1/30/2001	0.186160	170.7	0 012814	0.000030	0 003573	0.080652	0.056785	1.40%	0.118510	0.083440	170.45	0.149717	0.105412
1/31/2001	0.160100	170.7	0 012814	0 000030	0.003573	0.080652	0.056785	1.40%	0.101920	0.071759	170.45	0 149717	0.105412
2/1/2001	0.187790	170 7	0.012814	0.000030	0.003559	0.080618	0.056902	1.40%	0.104860	0.074012	170.45	0.149717	0.105673
2/2/2001	0.188983	170 7	0.012814	0.000030	0.003559	0.080618	0.056959	1 40%	0 105420	0.074482	170.45	0.149717	0.105779
2/3/2001	0.213536	170.7	0.012814	0 000030	0.003559	0.080618	0.056516	1 40%	0 120050	0.084159	170.45	0 149717	0.104957
2/4/2001	0.213536	170.7	0.012814	0 000030	0.003559	0.080618	0.056516	1.40%	0.120050	0.084159	170 45	0.149717	0.104957
2/5/2001	0.213536	170 7	0 012814	0.000030	0.003559	0.080618	0.056516	1.40%	0.120050	0.084159	170.45	0 149717	0.104957
2/6/2001	0.186892	170.7	0.012814	0 000030	0 003559	0.080618	0.056404	1.40%	0.105280	0.073658	170 45	0 149717	0.104748
2/7/2001	0.196442	170.7	0.012814	0.000030	0.003559	0.080618	0.056292	1.40%	0 110880	0.077422	170 45	0 149717	0.104540
2/8/2001	0.201434	170.7	0 012814	0.000030	0.003559	0.080618	0.056266	1 40%	0.113750	0.079389	170.45	0.149717	0.104492
2/9/2001	0.217565	170.7	0.012814	0 000030	0.003559	0.080618	0.056366	1.40%	0.122640	0.085747	170.45	0.149717	0.104679
2/10/2001	0.212222	170.7	0 012814	0.000030	0.003559	0.080618	0.055940	1.40%	0.120540	0.083641	170.45	0.149717	0.103887
2/11/2001	0.212222	170.7	0.012814	0.000030	0.003559	0.080618	0.055940	1.40%	0.120540	0.083641	170 45	0 149717	0.103887
2/12/2001	0.212222	170.7	0 012814	0.000030	0.003559	0.080618	0.055940	1.40%	0.120540	0.083641	170.45	0.149717	0.103887
2/13/2001	0.190912	170.7	0 012814	0.000030	0.003559	0.080618	0.055907	1 40%	0.108500	0.075242	170.45	0.149717	0.103825
2/14/2001	0.193065	170.7	0.012814	0.000030	0.003559	0.080618	0.055640	1.40%	0.110250	0.076091	170.45	0.149717	0.103330
2/15/2001	0.206588	170.7	0.012814	0.000030	0.003559	0.080618	0.055684	1.40%	0.117880	0.081420	170 45	0.149717	0.103411
2/16/2001	0.188755	170 7	0.012814	0.000030	0 003559	0.080618	0.055347	1.40%	0.108360	0.074392	170 45	0.149717	0.102785
2/17/2001	0.185819	170.7	0.012814	0.000030	0.003559	0.080618	0.055235	1.40%	0.106890	0.073235	170.45	0.149717	0.102578
2/18/2001	0.185819	170 7	0 012814	0.000030	0.003559	0.080618	0.055235	1.40%	0.106890	0.073235	170.45	0.149717	0.102578
2/19/2001	0.185819	170.7	0.012814	0 000030	0.003559	0.080618	0.055235	1.40%	0.106890	0.073235	170.45	0.149717	0.102578
2/20/2001	0.185819	170 7	0 012814	0.000030	0.003559	0 080618	0.055235	1.40%	0.106890	0.073235	170.45	0 149717	0.102578
2/21/2001	0.180927	170.7	0 012814	0 000030	0 003559	0.080618	0.055339	1.40%	0.103880	0.071307	170.45	0.149717	0.102772
2/22/2001	0.180224	170.7	0.012814	0.000030	0.003559	0.080618	0.055311	1.40%	0 103530	0.071030	170 45	0.149717	0.102718
2/23/2001	0.175472	170 7	0 012814	0.000030	0.003559	0.080618	0.055311	1.40%	0 100800	0.069157	170.45	0 149717	0.102718
2/24/2001	0.176817	170.7	0.012814	0 000030	0.003559	0.080618	0.055542	1.40%	0.101150	0.069687	170.45	0.149717	0.103147
2/25/2001	0.176817	170 7	0.012814	0.000030	0.003559	0.080618	0.055542	1.40%	0.101150	0.069687	170.45	0.149717	0.103147
2/26/2001	0.176817	170.7	0 012814	0.000030	0.003559	0.080618	0.055542	1.40%	0.101150	0.069687	170 45	0 149717	0.103147
2/27/2001	0.180501	170.7	0.012814	0.000030	0.003559	0.080618	0.055735	1.40%	0.102900	0.071139	170.45	0.149717	0.103506
2/28/2001	0.181273	170.7	0 012814	0.000030	0.003559	0.080618	0.055520	1.40%	0.103740	0.071443	170.45	0 149717	0.103107
3/1/2001	0.172562	170.7	0 012814	0.000030	0.003559	0.080618	0.054999	1.40%	0 103250	0.070439	170.45	0.149717	0.102140
3/2/2001	0.169258	170.7	0.012814	0.000030	0.003559	0.080618	0.054914	1.40%	0.101430	0.069090	170 45	0 149717	0.101982
3/3/2001	0.170346	170.7	0.012814	0.000030	0.003559	0.080618	0.054964	1.40%	0.101990	0.069535	170.45	0 149717	0.102074

	Gas Daily: Daily Midpoint			PG&E: Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Def. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn:$US)	($US / MMBtu)			($/MMBtu)						($/MMBtu)			
			(1) *1.055056 / (2)				(4) + (5) + (6)		(3) * (8)					(10) + (11) + (12) + (13)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
3/4/2001	7.29	1 55	4.97	0.199500	0.268000	0 176700	0.644200	1.35%	0.067051	0 262787	0.002959	0.007000	0 002200	0.274946	3.43%
3/5/2001	7 29	1 55	4.97	0.199500	0.268000	0.176700	0.644200	1.35%	0.067051	0.262787	0.002959	0.007000	0.002200	0.274946	3.43%
3/6/2001	7 55	1.54	5.18	0.199500	0.268000	0.176700	0.644200	1.35%	0.069883	0 262787	0.002959	0.007000	0.002200	0.274946	3 43%
3/7/2001	7 42	1.55	5.05	0.199500	0 268000	0.176700	0.644200	1.35%	0.068219	0.262787	0.002959	0.007000	0 002200	0.274946	3.43%
3/8/2001	7.40	1 55	5.03	0.199500	0.268000	0.176700	0.644200	1.35%	0.067967	0.262787	0.002959	0.007000	0.002200	0.274946	3.43%
3/9/2001	7 42	1.55	5.05	0.199500	0 268000	0.176700	0.644200	1 35%	0.068226	0 262787	0.002959	0 007000	0.002200	0.274946	3 43%
3/10/2001	7 27	1 55	4.94	0 199500	0.268000	0.176700	0.644200	1.35%	0.066738	0.262787	0.002959	0.007000	0 002200	0.274946	3.43%
3/11/2001	7.27	1 55	4.94	0.199500	0.268000	0.176700	0.644200	1.35%	0.066738	0 262787	0 002959	0.007000	0.002200	0.274946	3 43%
3/12/2001	7.27	1.55	4.94	0.199500	0 268000	0.176700	0.644200	1 35%	0.066738	0.262787	0.002959	0 007000	0 002200	0.274946	3 43%
3/13/2001	7 08	1.55	4.82	0 199500	0 268000	0.176700	0.644200	1.35%	0.065110	0.262787	0 002959	0.007000	0.002200	0.274946	3.43%
3/14/2001	7.17	1 55	4.87	0 199500	0.268000	0.176700	0.644200	1.35%	0.065722	0.262787	0.002959	0.007000	0.002200	0.274946	3 43%
3/15/2001	7 12	1.56	4.82	0 199500	0 268000	0.176700	0.644200	1.35%	0.065029	0.262787	0.002959	0.007000	0 002200	0.274946	3.43%
3/16/2001	7.02	1.57	4.72	0.199500	0.268000	0.176700	0.644200	1 35%	0.063767	0.262787	0.002959	0.007000	0.002200	0.274946	3 43%
3/17/2001	7 01	1 57	4.71	0.199500	0.268000	0.176700	0.644200	1 35%	0.063558	0 262787	0.002959	0.007000	0.002200	0.274946	3 43%
3/18/2001	7 01	1.57	4.71	0.199500	0.268000	0.176700	0.644200	1.35%	0.063558	0.262787	0 002959	0.007000	0.002200	0.274946	3.43%
3/19/2001	7 01	1 57	4.71	0.199500	0.268000	0.176700	0.644200	1 35%	0.063558	0.262787	0.002959	0.007000	0.002200	0.274946	3 43%
3/20/2001	7 23	1.56	4.88	0.199500	0 268000	0.176700	0.644200	1.35%	0.065920	0 262787	0.002959	0.007000	0 002200	0.274946	3 43%
3/21/2001	7 27	1 57	4.88	0 199500	0 268000	0.176700	0.644200	1.35%	0.065829	0.262787	0.002959	0.007000	0.002200	0.274946	3.43%
3/22/2001	7 40	1.57	4.96	0 199500	0.268000	0.176700	0.644200	1 35%	0.066955	0.262787	0.002959	0 007000	0.002200	0.274946	3 43%
3/23/2001	7 26	1 57	4.89	0.199500	0.268000	0.176700	0.644200	1.35%	0.066002	0.262787	0.002959	0.007000	0 002200	0.274946	3 43%
3/24/2001	7.57	1.55	5.13	0.199500	0.268000	0.176700	0.644200	1.35%	0.069315	0.262787	0.002959	0.007000	0.002200	0.274946	3 43%
3/25/2001	7 57	1 55	5.13	0.199500	0.268000	0.176700	0.644200	1.35%	0.069315	0.262787	0.002959	0.007000	0.002200	0.274946	3.43%
3/26/2001	7 57	1.55	5.13	0.199500	0 268000	0.176700	0.644200	1.35%	0.069315	0.262787	0.002959	0.007000	0.002200	0.274946	3 43%
3/27/2001	7.37	1.57	4.95	0 199500	0 268000	0.176700	0.644200	1.35%	0.066891	0.262787	0.002959	0 007000	0.002200	0.274946	3 43%
3/28/2001	7.74	1 57	5.21	0.199500	0.268000	0 176700	0.644200	1 35%	0.070316	0.262787	0.002959	0.007000	0 002200	0.274946	3 43%
3/29/2001	7 98	1 57	5.35	0.199500	0.268000	0 176700	0.644200	1.35%	0.072235	0 262787	0.002959	0.007000	0 002200	0.274946	3.43%
3/30/2001	7.64	1 58	5.11	0.199500	0.268000	0.176700	0.644200	1 35%	0.068942	0.262787	0.002959	0.007000	0.002200	0.274946	3.43%
3/31/2001	7 70	1.58	5.16	0.199500	0.268000	0.176700	0.644200	1 35%	0.069634	0 262787	0.002959	0.007000	0.002200	0.274946	3.43%
4/1/2001	7.70	1.58	5.16	0.199500	0.268000	0 137400	0.604900	1.35%	0.069634	0.262787	0.002959	0.007000	0.002200	0.274946	3 12%
4/2/2001	7.70	1 58	5.16	0.199500	0 268000	0 137400	0.604900	1.35%	0.069634	0.262787	0.002959	0.007000	0 002200	0.274946	3.12%
4/3/2001	7 17	1 58	4.79	0 199500	0 268000	0.137400	0.604900	1.35%	0.064631	0.262787	0.002959	0.007000	0.002200	0.274946	3.12%
4/4/2001	7 50	1.57	5.04	0 199500	0.268000	0.137400	0.604900	1.35%	0.068054	0.262787	0.002959	0.007000	0.002200	0.274946	3 12%
4/5/2001	7 37	1 58	4.92	0.199500	0.268000	0.137400	0.604900	1 35%	0.066444	0.262787	0 002959	0.007000	0.002200	0.274946	3.12%
4/6/2001	7 49	1 56	5.06	0.199500	0.268000	0.137400	0.604900	1.35%	0.068275	0.262787	0.002959	0 007000	0.002200	0.274946	3 12%
4/7/2001	7 69	1 56	5.19	0 199500	0.268000	0 137400	0.604900	1.35%	0.070009	0 262787	0.002959	0 007000	0.002200	0.274946	3 12%
4/8/2001	7.69	1 56	5.19	0.199500	0.268000	0.137400	0.604900	1 35%	0.070009	0.262787	0 002959	0.007000	0.002200	0.274946	3 12%
4/9/2001	7 69	1.56	5.19	0.199500	0 268000	0.137400	0.604900	1 35%	0.070009	0 262787	0 002959	0 007000	0.002200	0.274946	3.12%
4/10/2001	7 74	1 56	5.25	0.199500	0.268000	0.137400	0.604900	1 35%	0.070827	0.262787	0 002959	0 007000	0 002200	0.274946	3.12%
4/11/2001	7.81	1.56	5.27	0 199500	0.268000	0.137400	0.604900	1 35%	0.071189	0 262787	0.002959	0 007000	0.002200	0.274946	3 12%
4/12/2001	7 68	1 56	5.19	0.199500	0.268000	0.137400	0.604900	1.35%	0.070121	0.262787	0 002959	0.007000	0.002200	0.274946	3 12%
4/13/2001	7 58	1 56	5.12	0.199500	0.268000	0.137400	0.604900	1.35%	0.069088	0 262787	0 002959	0.007000	0.002200	0.274946	3 12%
4/14/2001	7 58	1 56	5.12	0.199500	0.268000	0.137400	0.604900	1.35%	0.069097	0.262787	0.002959	0 007000	0 002200	0.274946	3 12%
4/15/2001	7 58	1.56	5.12	0.199500	0.268000	0.137400	0.604900	1.35%	0.069097	0 262787	0.002959	0 007000	0.002200	0.274946	3.12%
4/16/2001	7.58	1 56	5.12	0.199500	0.268000	0.137400	0.604900	1.35%	0.069097	0.262787	0.002959	0.007000	0.002200	0.274946	3.12%

		ANG: Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[8]		
Flow Date	PGT-NW Fuel Charge	Distance	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/10^{3}m^3)	($Cdn/GJ)	($/MMBtu)
	(3) * (15)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
3/4/2001	0.170346	170 7	0.012814	0 000030	0 003559	0 080618	0.054964	1 40%	0.101990	0.069535	170 45	0.149717	0.102074
3/5/2001	0.170346	170.7	0.012814	0 000030	0 003559	0.080618	0.054964	1.40%	0 101990	0.069535	170 45	0.149717	0.102074
3/6/2001	0.177541	170 7	0.012814	0 000030	0 003559	0 080618	0.055275	1 40%	0.105700	0.072471	170 45	0 149717	0.102651
3/7/2001	0.173313	170.7	0.012814	0.000030	0.003559	0 080618	0.054904	1 40%	0.103880	0.070745	170.45	0.149717	0.101962
3/8/2001	0.172673	170 7	0.012814	0 000030	0 003559	0.080618	0.054886	1.40%	0.103530	0.070484	170 45	0.149717	0.101929
3/9/2001	0.173330	170 7	0 012814	0 000030	0 003559	0 080618	0.054946	1 40%	0 103810	0.070753	170.45	0 149717	0.102041
3/10/2001	0.169550	170 7	0.012814	0 000030	0 003559	0.080618	0.054858	1.40%	0 101710	0.069210	170 45	0 149717	0.101877
3/11/2001	0.169550	170 7	0 012814	0.000030	0 003559	0 080618	0.054858	1 40%	0 101710	0.069210	170 45	0.149717	0.101877
3/12/2001	0.169550	170 7	0 012814	0.000030	0.003559	0 080618	0.054858	1 40%	0.101710	0.069210	170 45	0 149717	0.101877
3/13/2001	0.165415	170.7	0 012814	0.000030	0.003559	0.080618	0.054957	1.40%	0.099050	0.067521	170 45	0.149717	0.102061
3/14/2001	0.166969	170 7	0.012814	0 000030	0.003559	0 080618	0.054776	1 40%	0 100310	0.068156	170 45	0 149717	0.101726
3/15/2001	0.165207	170 7	0 012814	0 000030	0 003559	0 080618	0.054541	1.40%	0 099680	0.067437	170 45	0.149717	0.101289
3/16/2001	0.162002	170.7	0 012814	0 000030	0 003559	0 080618	0.054283	1 40%	0.098210	0.066129	170 45	0 149717	0.100811
3/17/2001	0.161472	170 7	0 012814	0 000030	0.003559	0 080618	0.054183	1.40%	0 098070	0.065912	170 45	0 149717	0.100624
3/18/2001	0.161472	170 7	0 012814	0.000030	0.003559	0.080618	0.054183	1 40%	0.098070	0.065912	170 45	0.149717	0.100624
3/19/2001	0.161472	170 7	0 012814	0.000030	0.003559	0.080618	0.054183	1 40%	0 098070	0.065912	170 45	0 149717	0.100624
3/20/2001	0.167472	170 7	0.012814	0.000030	0.003559	0.080618	0.054485	1.40%	0.101150	0.068361	170.45	0 149717	0.101185
3/21/2001	0.167240	170.7	0 012814	0.000030	0.003559	0.080618	0.054073	1.40%	0.101780	0.068267	170.45	0 149717	0.100420
3/22/2001	0.170101	170 7	0 012814	0 000030	0.003559	0 080618	0.054032	1.40%	0.103600	0.069434	170 45	0.149717	0.100343
3/23/2001	0.167681	170.7	0 012814	0.000030	0.003559	0.080618	0.054290	1.40%	0.101640	0.068447	170 45	0.149717	0.100823
3/24/2001	0.176097	170.7	0.012814	0 000030	0.003559	0.080618	0.054716	1.40%	0.105910	0.071882	170 45	0.149717	0.101615
3/25/2001	0.176097	170 7	0.012814	0.000030	0.003559	0.080618	0.054716	1.40%	0.105910	0.071882	170.45	0.149717	0.101615
3/26/2001	0.176097	170 7	0 012814	0.000030	0.003559	0.080618	0.054716	1 40%	0.105910	0.071882	170.45	0.149717	0.101615
3/27/2001	0.169940	170.7	0 012814	0 000030	0.003559	0.080618	0.054200	1.40%	0.103180	0.069369	170.45	0.149717	0.100656
3/28/2001	0.178641	170.7	0 012814	0 000030	0.003559	0.080618	0.054287	1.40%	0.108290	0.072920	170.45	0.149717	0.100817
3/29/2001	0.183516	170.7	0 012814	0 000030	0.003559	0.080618	0.054090	1.40%	0.111650	0.074910	170.45	0.149717	0.100452
3/30/2001	0.175150	170.7	0.012814	0.000030	0.003559	0.080618	0.053888	1 40%	0 106960	0.071495	170.45	0.149717	0.100076
3/31/2001	0.176907	170 7	0.012814	0.000030	0 003559	0.080618	0.054004	1.40%	0.107800	0.072213	170.45	0.149717	0.100292
4/1/2001	0.161111	170 7	0.012814	0 000030	0.003554	0.080607	0.053997	0.90%	0 069300	0.046422	170.45	0 149717	0.100292
4/2/2001	0.161111	170.7	0 012814	0.000030	0.003554	0 080607	0.053997	0.90%	0 069300	0.046422	170.45	0 149717	0.100292
4/3/2001	0.149538	170 7	0 012814	0.000030	0.003554	0.080607	0.053860	0.90%	0.064485	0.043088	170.45	0.149717	0.100038
4/4/2001	0.157457	170.7	0.012814	0.000030	0.003554	0.080607	0.054179	0 90%	0.067500	0.045369	170.45	0.149717	0.100631
4/5/2001	0.153731	170.7	0.012814	0.000030	0.003554	0.080607	0.053867	0 90%	0 066285	0.044296	170.45	0.149717	0.100051
4/6/2001	0.157967	170.7	0 012814	0.000030	0.003554	0 080607	0.054463	0.90%	0.067365	0.045516	170.45	0.149717	0.101159
4/7/2001	0.161980	170.7	0.012814	0.000030	0.003554	0.080607	0.054394	0.90%	0 069165	0.046673	170 45	0.149717	0.101030
4/8/2001	0.161980	170 7	0.012814	0.000030	0 003554	0.080607	0.054394	0.90%	0.069165	0.046673	170 45	0 149717	0.101030
4/9/2001	0.161980	170.7	0.012814	0 000030	0 003554	0.080607	0.054394	0.90%	0.069165	0.046673	170 45	0 149717	0.101030
4/10/2001	0.163873	170.7	0 012814	0 000030	0.003554	0.080607	0.054674	0.90%	0 069615	0.047218	170 45	0.149717	0.101549
4/11/2001	0.164710	170.7	0 012814	0.000030	0 003554	0 080607	0.054425	0.90%	0.070290	0.047459	170 45	0 149717	0.101088
4/12/2001	0.162238	170.7	0 012814	0 000030	0 003554	0.080607	0.054516	0.90%	0.069120	0.046747	170 45	0 149717	0.101256
4/13/2001	0.159849	170 7	0.012814	0.000030	0 003554	0.080607	0.054422	0.90%	0.068220	0.046059	170.45	0.149717	0.101081
4/14/2001	0.159869	170 7	0 012814	0 000030	0.003554	0 080607	0.054429	0.90%	0 068220	0.046065	170.45	0.149717	0.101094
4/15/2001	0.159869	170 7	0 012814	0.000030	0.003554	0.080607	0.054429	0 90%	0.068220	0.046065	170.45	0 149717	0.101094
4/16/2001	0.159869	170.7	0.012814	0.000030	0.003554	0 080607	0.054429	0.90%	0 068220	0.046065	170 45	0.149717	0.101094

	Gas Daily: Daily Midpoint			PG&E Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Del. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn.$US)	($US / MMBtu)		($/MMBtu)							($/MMBtu)			
			(1) *1.055056 / (2)				(4) + (5) + (6)		(3) * (8)					(10) + (11) + (12) + (13)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
4/17/2001	7.70	1.56	5.22	0 199500	0.268000	0.137400	0.604900	1.35%	0.070416	0.262787	0 002959	0.007000	0 002200	0.274946	3 12%
4/18/2001	7.47	1.57	5.02	0 199500	0.268000	0 137400	0.604900	1 35%	0.067758	0.262787	0 002959	0.007000	0 002200	0.274946	3 12%
4/19/2001	7.24	1 55	4.94	0 199500	0 268000	0 137400	0.604900	1 35%	0.066659	0 262787	0.002959	0.007000	0 002200	0.274946	3.12%
4/20/2001	7 11	1 54	4.86	0.199500	0 268000	0.137400	0.604900	1.35%	0.065607	0.262787	0 002959	0 007000	0 002200	0.274946	3.12%
4/21/2001	6.97	1 55	4.76	0 199500	0 268000	0.137400	0.604900	1.35%	0.064214	0 262787	0 002959	0.007000	0.002200	0.274946	3 12%
4/22/2001	6 97	1.55	4.76	0 199500	0.268000	0 137400	0.604900	1.35%	0.064214	0.262787	0 002959	0.007000	0.002200	0.274946	3 12%
4/23/2001	6 97	1.55	4.76	0.199500	0 268000	0.137400	0.604900	1.35%	0.064214	0.262787	0.002959	0 007000	0 002200	0.274946	3 12%
4/24/2001	7 11	1.55	4.84	0.199500	0 268000	0.137400	0.604900	1.35%	0.065377	0.262787	0.002959	0.007000	0.002200	0.274946	3.12%
4/25/2001	7.04	1 55	4.80	0 199500	0 268000	0.137400	0.604900	1.35%	0.064755	0.262787	0.002959	0.007000	0.002200	0.274946	3 12%
4/26/2001	6 85	1.55	4.67	0.199500	0 268000	0 137400	0.604900	1 35%	0.063063	0 262787	0.002959	0.007000	0.002200	0.274946	3.12%
4/27/2001	6 82	1 54	4.66	0.199500	0.268000	0.137400	0.604900	1.35%	0.062962	0.262787	0.002959	0 007000	0.002200	0.274946	3.12%
4/28/2001	6 68	1 54	4.59	0 199500	0 268000	0.137400	0.604900	1 35%	0.061943	0.262787	0 002959	0.007000	0 002200	0.274946	3.12%
4/29/2001	6.68	1 54	4.59	0 199500	0.268000	0.137400	0.604900	1 35%	0.061943	0.262787	0.002959	0.007000	0 002200	0.274946	3 12%
4/30/2001	6.68	1.54	4.59	0.199500	0 268000	0.137400	0.604900	1.35%	0.061943	0.262787	0.002959	0 007000	0.002200	0.274946	3 12%
5/1/2001	6 40	1.53	4.40	0.199500	0.268000	0.106800	0.574300	1.35%	0.059432	0.262787	0.002959	0.007000	0.002200	0.274946	2 63%
5/2/2001	6 10	1 53	4.20	0 199500	0.268000	0.106800	0.574300	1.35%	0.056750	0.262787	0.002959	0 007000	0.002200	0.274946	2 63%
5/3/2001	6.08	1 53	4.18	0 199500	0.268000	0.106800	0.574300	1.35%	0.056490	0.262787	0.002959	0.007000	0 002200	0.274946	2.63%
5/4/2001	6.01	1 54	4.13	0.199500	0.268000	0.106800	0.574300	1 35%	0.055756	0 262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/5/2001	6 01	1.54	4.11	0.199500	0.268000	0.106800	0.574300	1 35%	0.055521	0.262787	0.002959	0 007000	0.002200	0.274946	2 63%
5/6/2001	6 01	1.54	4.11	0.199500	0.268000	0.106800	0.574300	1.35%	0.055521	0.262787	0.002959	0.007000	0.002200	0.274946	2 63%
5/7/2001	6 01	1.54	4.11	0 199500	0.268000	0 106800	0.574300	1.35%	0.055521	0 262787	0.002959	0.007000	0 002200	0.274946	2.63%
5/8/2001	5.86	1.54	4.00	0.199500	0.268000	0.106800	0.574300	1 35%	0.053994	0 262787	0.002959	0 007000	0 002200	0.274946	2 63%
5/9/2001	5 78	1.54	3.96	0.199500	0.268000	0.106800	0.574300	1.35%	0.053434	0 262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/10/2001	5 67	1 54	3.88	0 199500	0.268000	0.106800	0.574300	1.35%	0.052425	0.262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/11/2001	5.70	1 55	3.88	0.199500	0.268000	0.106800	0.574300	1.35%	0.052322	0.262787	0.002959	0.007000	0.002200	0.274946	2 63%
5/12/2001	5 71	1.55	3.87	0.199500	0.268000	0.106800	0.574300	1.35%	0.052286	0.262787	0.002959	0.007000	0.002200	0.274946	2 63%
5/13/2001	5 71	1 55	3.87	0.199500	0.268000	0.106800	0.574300	1.35%	0.052286	0.262787	0.002959	0.007000	0.002200	0.274946	2 63%
5/14/2001	5.71	1.55	3.87	0.199500	0.268000	0 106800	0.574300	1.35%	0.052286	0.262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/15/2001	5 84	1.55	3.98	0 199500	0.268000	0 106800	0.574300	1.35%	0.053689	0.262787	0 002959	0.007000	0.002200	0.274946	2.63%
5/16/2001	6 08	1.54	4.16	0.199500	0.268000	0.106800	0.574300	1.35%	0.056215	0.262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/17/2001	6.02	1.54	4.14	0.199500	0.268000	0.106800	0.574300	1.35%	0.055823	0.262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/18/2001	5 67	1.53	3.90	0.199500	0.268000	0.106800	0.574300	1.35%	0.052687	0.262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/19/2001	5 42	1.53	3.73	0.199500	0.268000	0.106800	0.574300	1.35%	0.050374	0.262787	0 002959	0.007000	0.002200	0.274946	2.63%
5/20/2001	5 42	1 53	3.73	0.199500	0.268000	0.106800	0.574300	1.35%	0.050374	0.262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/21/2001	5 42	1.53	3.73	0 199500	0 268000	0.106800	0.574300	1.35%	0.050374	0.262787	0.002959	0.007000	0.002200	0.274946	2 63%
5/22/2001	5.42	1.54	3.71	0.199500	0.268000	0.106800	0.574300	1.35%	0.050080	0.262787	0.002959	0 007000	0 002200	0.274946	2 63%
5/23/2001	5.35	1.55	3.65	0.199500	0.268000	0.106800	0.574300	1.35%	0.049315	0 262787	0 002959	0 007000	0.002200	0.274946	2.63%
5/24/2001	5 46	1.55	3.72	0.199500	0.268000	0.106800	0.574300	1.35%	0.050257	0.262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/25/2001	5.82	1 55	3.83	0.199500	0.268000	0 106800	0.574300	1.35%	0.051748	0.262787	0.002959	0.007000	0.002200	0.274946	2 63%
5/26/2001	5 21	1.54	3.57	0.199500	0.268000	0 106800	0.574300	1.35%	0.048262	0 262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/27/2001	5 21	1 54	3.57	0.199500	0.268000	0.106800	0.574300	1.35%	0.048262	0 262787	0.002959	0.007000	0.002200	0.274946	2.63%
5/28/2001	5.21	1 54	3.57	0.199500	0.268000	0.106800	0.574300	1.35%	0.048262	0 262787	0 002959	0 007000	0 002200	0.274946	2 63%
5/29/2001	5.21	1.54	3.57	0.199500	0.268000	0.106800	0.574300	1 35%	0.048262	0.262787	0.002959	0 007000	0 002200	0.274946	2.63%
5/30/2001	4.98	1.55	3.40	0.199500	0.268000	0.106800	0.574300	1.35%	0.045869	0.262787	0.002959	0.007000	0 002200	0.274946	2.63%

		ANG: Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[6]		
Flow Date	PGT-NW Fuel Charge	Distance	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/$10^3m^3$)	($Cdn/GJ)	($/MMBtu)
	(3) * (15)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
4/17/2001	0.162922	170.7	0 012814	0.000030	0 003554	0.080607	0.054603	0.90%	0.069300	0.046944	170.45	0.149717	0.101419
4/18/2001	0.156772	170.7	0.012814	0.000030	0.003554	0.080607	0.054196	0 90%	0 067185	0.045172	170.45	0.149717	0.100663
4/19/2001	0.154228	170.7	0 012814	0.000030	0.003554	0 080607	0.054974	0.90%	0.065160	0.044439	170.45	0 149717	0.102107
4/20/2001	0.151794	170.7	0.012814	0 000030	0.003554	0.080607	0.055134	0.90%	0.063945	0.043738	170.45	0.149717	0.102405
4/21/2001	0.148573	170 7	0.012814	0.000030	0.003554	0 080607	0.055009	0.90%	0 062730	0.042810	170.45	0.149717	0.102173
4/22/2001	0.148573	170.7	0.012814	0 000030	0.003554	0 080607	0.055009	0.90%	0 062730	0.042810	170.45	0.149717	0.102173
4/23/2001	0.148573	170 7	0 012814	0 000030	0.003554	0.080607	0.055009	0.90%	0.062730	0.042810	170 45	0.149717	0.102173
4/24/2001	0.151284	170.7	0.012814	0.000030	0.003554	0.080607	0.054903	0.90%	0.063990	0.043585	170 45	0.149717	0.101975
4/25/2001	0.149823	170 7	0 012814	0.000030	0.003554	0.080607	0.054960	0.90%	0.063315	0.043170	170.45	0.149717	0.102081
4/26/2001	0.145908	170.7	0 012814	0.000030	0 003554	0.080607	0.055009	0 90%	0.061605	0.042042	170 45	0 149717	0.102173
4/27/2001	0.145674	170.7	0.012814	0.000030	0 003554	0 080607	0.055163	0.90%	0.061335	0.041974	170.45	0 149717	0.102458
4/28/2001	0.143318	170.7	0.012814	0 000030	0 003554	0.080607	0.055368	0.90%	0.060120	0.041295	170.45	0.149717	0.102839
4/29/2001	0.143318	170.7	0.012814	0.000030	0 003554	0 080607	0.055368	0.90%	0.060120	0.041295	170.45	0 149717	0.102839
4/30/2001	0.143318	170.7	0 012814	0.000030	0 003554	0.080607	0.055368	0.90%	0 060120	0.041295	170 45	0.149717	0.102839
5/1/2001	0.115938	170.7	0.012814	0 000030	0.003554	0 080607	0.055447	0.90%	0.057600	0.039621	170.45	0 149717	0.102986
5/2/2001	0.110706	170 7	0 012814	0.000030	0 003554	0 080607	0.055548	0.90%	0.054900	0.037833	170.45	0.149717	0.103174
5/3/2001	0.110199	170 7	0 012814	0 000030	0.003554	0 080607	0.055476	0.90%	0.054720	0.037660	170.45	0.149717	0.103040
5/4/2001	0.108767	170.7	0 012814	0 000030	0.003554	0 080607	0.055393	0.90%	0.054090	0.037171	170.45	0.149717	0.102885
5/5/2001	0.108309	170.7	0 012814	0.000030	0.003554	0 080607	0.055206	0.90%	0.054045	0.037014	170.45	0 149717	0.102538
5/6/2001	0.108309	170.7	0 012814	0.000030	0.003554	0 080607	0.055206	0.90%	0.054045	0.037014	170 45	0.149717	0.102538
5/7/2001	0.108309	170.7	0.012814	0.000030	0 003554	0.080607	0.055206	0.90%	0.054045	0.037014	170 45	0.149717	0.102538
5/8/2001	0.105330	170.7	0.012814	0.000030	0.003554	0 080607	0.055063	0 90%	0.052695	0.035996	170 45	0.149717	0.102273
5/9/2001	0.104238	170.7	0.012814	0 000030	0.003554	0 080607	0.055199	0.90%	0.052020	0.035623	170.45	0 149717	0.102525
5/10/2001	0.102270	170.7	0.012814	0 000030	0.003554	0 080607	0.055256	0 90%	0.050985	0.034950	170.45	0.149717	0.102631
5/11/2001	0.102069	170.7	0.012814	0.000030	0.003554	0.080607	0.054857	0 90%	0 051255	0.034882	170 45	0.149717	0.101890
5/12/2001	0.101998	170.7	0.012814	0.000030	0 003554	0.080607	0.054723	0.90%	0 051345	0.034857	170.45	0.149717	0.101641
5/13/2001	0.101998	170 7	0 012814	0.000030	0.003554	0 080607	0.054723	0 90%	0.051345	0.034857	170 45	0.149717	0.101641
5/14/2001	0.101998	170.7	0 012814	0.000030	0.003554	0.080607	0.054723	0.90%	0.051345	0.034857	170.45	0 149717	0.101641
5/15/2001	0.104735	170.7	0.012814	0.000030	0.003554	0.080607	0.054892	0.90%	0.052560	0.035793	170.45	0 149717	0.101956
5/16/2001	0.109662	170.7	0 012814	0.000030	0.003554	0.080607	0.055206	0 90%	0.054720	0.037477	170 45	0.149717	0.102538
5/17/2001	0.108898	170 7	0.012814	0.000030	0.003554	0.080607	0.055368	0.90%	0.054180	0.037215	170.45	0 149717	0.102839
5/18/2001	0.102781	170.7	0.012814	0 000030	0.003554	0.080607	0.055483	0 90%	0.051030	0.035125	170.45	0 149717	0.103053
5/19/2001	0.098268	170.7	0 012814	0.000030	0.003554	0.080607	0.055494	0 90%	0 048780	0.033583	170 45	0.149717	0.103073
5/20/2001	0.098268	170 7	0.012814	0.000030	0 003554	0.080607	0.055494	0.90%	0 048780	0.033583	170 45	0 149717	0.103073
5/21/2001	0.098268	170 7	0.012814	0.000030	0 003554	0 080607	0.055494	0.90%	0.048780	0.033583	170 45	0 149717	0.103073
5/22/2001	0.097695	170.7	0.012814	0 000030	0 003554	0.080607	0.055170	0.90%	0 048780	0.033387	170.45	0 149717	0.102472
5/23/2001	0.096202	170.7	0 012814	0 000030	0 003554	0 080607	0.055038	0 90%	0.048150	0.032877	170.45	0.149717	0.102226
5/24/2001	0.098040	170 7	0.012814	0.000030	0 003554	0.080607	0.054960	0.90%	0.049140	0.033505	170 45	0.149717	0.102081
5/25/2001	0.100947	170.7	0.012814	0.000030	0.003554	0.080607	0.055027	0 90%	0.050535	0.034498	170.45	0.149717	0.102206
5/26/2001	0.094148	170.7	0.012814	0 000030	0.003554	0.080607	0.055310	0.90%	0.046890	0.032174	170 45	0.149717	0.102732
5/27/2001	0.094148	170.7	0.012814	0.000030	0.003554	0.080607	0.055310	0.90%	0 046890	0.032174	170 45	0 149717	0.102732
5/28/2001	0.094148	170.7	0.012814	0.000030	0.003554	0.080607	0.055310	0.90%	0.046890	0.032174	170.45	0 149717	0.102732
5/29/2001	0.094148	170.7	0.012814	0.000030	0.003554	0.080607	0.055310	0.90%	0.046890	0.032174	170.45	0.149717	0.102732
5/30/2001	0.089479	170.7	0.012814	0.000030	0.003554	0.080607	0.054995	0.90%	0 044820	0.030579	170.45	0.149717	0.102147

	Gas Daily: Daily Midpoint			PG&E: Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Del. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn/$US)	($US / MMBtu)		($/MMBtu)							($/MMBtu)			
			(1) *1.055056 / (2)				(4) + (5) + (6)		(3) * (8)					(10) + (11) + (12) + (13)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
5/31/2001	4 81	1 55	3.28	0.199500	0.268000	0.106800	0.574300	1.35%	0.044265	0.262787	0.002959	0.007000	0 002200	0.274946	2 63%
6/1/2001	4 87	1 53	3.35	0.199500	0.268000	0.101100	0.568600	1.35%	0.045219	0.262787	0 002959	0.007000	0.002200	0.274946	2 39%
6/2/2001	4 72	1.53	3.24	0 199500	0.268000	0.101100	0.568600	1.35%	0.043805	0 262787	0 002959	0.007000	0.002200	0.274946	2 39%
6/3/2001	4 72	1.53	3.24	0.199500	0.268000	0 101100	0.568600	1.35%	0.043805	0.262787	0.002959	0 007000	0.002200	0.274946	2.39%
6/4/2001	4 72	1.53	3.24	0.199500	0 268000	0.101100	0.568600	1.35%	0.043805	0 262787	0.002959	0 007000	0.002200	0.274946	2 39%
6/5/2001	4 90	1 53	3.37	0.199500	0.268000	0.101100	0.568600	1.35%	0.045532	0 262787	0.002959	0 007000	0.002200	0.274946	2.39%
6/6/2001	4 85	1 52	3.36	0 199500	0.268000	0.101100	0.568600	1 35%	0.045304	0.262787	0 002959	0.007000	0 002200	0.274946	2.39%
6/7/2001	4 41	1 52	3.06	0.199500	0.268000	0.101100	0.568600	1.35%	0.041250	0.262787	0.002959	0 007000	0.002200	0.274946	2.39%
6/8/2001	4 39	1 52	3.04	0 199500	0.268000	0 101100	0.568600	1 35%	0.041049	0.262787	0.002959	0.007000	0.002200	0.274946	2 39%
6/9/2001	4 37	1 52	3.04	0.199500	0 268000	0 101100	0.568600	1 35%	0.041005	0 262787	0 002959	0.007000	0 002200	0.274946	2.39%
6/10/2001	4 37	1 52	3.04	0.199500	0.268000	0.101100	0.568600	1.35%	0.041005	0.262787	0.002959	0.007000	0.002200	0.274946	2 39%
6/11/2001	4 37	1 52	3.04	0.199500	0 268000	0 101100	0.568600	1.35%	0.041005	0.262787	0.002959	0.007000	0.002200	0.274946	2 39%
6/12/2001	4 83	1 52	3.34	0.199500	0.268000	0.101100	0.568600	1 35%	0.045077	0.262787	0 002959	0 007000	0 002200	0.274946	2 39%
6/13/2001	5.15	1.52	3.58	0 199500	0 268000	0.101100	0.568600	1 35%	0.048312	0 262787	0.002959	0.007000	0 002200	0.274946	2 39%
6/14/2001	5 21	1.52	3.61	0 199500	0.268000	0.101100	0.568600	1.35%	0.048795	0.262787	0 002959	0.007000	0 002200	0.274946	2 39%
6/15/2001	4 98	1.52	3.45	0 199500	0 268000	0.101100	0.568600	1.35%	0.046557	0 262787	0.002959	0.007000	0.002200	0.274946	2.39%
6/16/2001	4.72	1 53	3.25	0 199500	0 268000	0.101100	0.568600	1 35%	0.043837	0.262787	0 002959	0.007000	0 002200	0.274946	2.39%
6/17/2001	4 72	1 53	3.25	0.199500	0.268000	0.101100	0.568600	1 35%	0.043837	0.262787	0 002959	0.007000	0 002200	0.274946	2 39%
6/18/2001	4 72	1 53	3.25	0.199500	0 268000	0 101100	0.568600	1.35%	0.043837	0 262787	0.002959	0.007000	0 002200	0.274946	2.39%
6/19/2001	4 84	1 53	3.33	0 199500	0 268000	0 101100	0.568600	1.35%	0.044948	0.262787	0.002959	0 007000	0.002200	0.274946	2.39%
6/20/2001	4 89	1.53	3.37	0 199500	0.268000	0.101100	0.568600	1 35%	0.045493	0.262787	0 002959	0.007000	0.002200	0.274946	2 39%
6/21/2001	4 71	1 53	3.24	0 199500	0.268000	0 101100	0.568600	1.35%	0.043772	0.262787	0.002959	0.007000	0.002200	0.274946	2.39%
6/22/2001	4 57	1 53	3.15	0.199500	0.268000	0.101100	0.568600	1.35%	0.042563	0.262787	0.002959	0.007000	0.002200	0.274946	2.39%
6/23/2001	4 49	1 52	3.11	0.199500	0 268000	0 101100	0.568600	1 35%	0.042041	0.262787	0.002959	0.007000	0.002200	0.274946	2 39%
6/24/2001	4.49	1.52	3.11	0.199500	0.268000	0.101100	0.568600	1.35%	0.042041	0.262787	0.002959	0.007000	0.002200	0.274946	2 39%
6/25/2001	4 49	1 52	3.11	0 199500	0 268000	0 101100	0.568600	1.35%	0.042041	0.262787	0.002959	0.007000	0.002200	0.274946	2.39%
6/26/2001	4.14	1 51	2.88	0.199500	0 268000	0.101100	0.568600	1.35%	0.038896	0 262787	0.002959	0.007000	0.002200	0.274946	2 39%
6/27/2001	4 04	1 52	2.81	0.199500	0.268000	0.101100	0.568600	1.35%	0.037870	0.262787	0 002959	0.007000	0 002200	0.274946	2.39%
6/28/2001	3.91	1.52	2.71	0.199500	0.268000	0.101100	0.568600	1.35%	0.036560	0.262787	0.002959	0.007000	0.002200	0.274946	2.39%
6/29/2001	3 61	1 52	2.51	0 199500	0 268000	0.101100	0.568600	1.35%	0.033883	0.262787	0.002959	0.007000	0.002200	0.274946	2.39%
6/30/2001	3 12	1.52	2.17	0 199500	0.268000	0.101100	0.568600	1.35%	0.029327	0.262787	0.002959	0.007000	0.002200	0.274946	2.39%

Note: [1]Source - Federal Reserve Statistical Releases, Historical Data, Canada -- Spot Exchange Rate
[2]G-AFT Straight Fixed Variable Rate based on Malin to On-System Deliveries (100% Load Factor)
[3]G-SUR charges apply to merchant generators, i.e. Duke, CalPine and Mirant; however, utility-owned generators and co-generators are exempt.
[4]Shrinkage Allowance defined in PG&E Rule 21.
[5]Includes delivery and reservation (based on 100% load factor)
[6]GRI = Gas Research Institute Charge. GRI Reservation unit rates reflect high load factor reservation charges
[7]ACA = Annual Charge Adjustment
[8]PGT-NW Transport Charges for October 2, 2000 through June 20, 2001 have been revised from Mike Harris' October declaration. This occurred as a result of new information received from PGT-NW personnel regarding the GRI Res. Surcharge (Col. 11), the GRI Del Surcharge (Col. 12) and the ACA (Col. 13)
[9]Fuel charges do not apply for delivery service only.

		ANG Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[6]		
Flow Date	PGT-NW Fuel Charge	Distance	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/$10^3m^3$)	($Cdn/GJ)	($/MMBtu)
	(3) * (15)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
5/31/2001	0.086352	170.7	0 012814	0.000030	0.003554	0.080607	0.055006	0.90%	0.043245	0.029510	170 45	0.149717	0.102167
6/1/2001	0.080006	170 7	0.012814	0 000030	0.003554	0.080607	0.055498	1.20%	0.058380	0.040195	184 82	0.162339	0.111770
6/2/2001	0.077505	170 7	0 012814	0.000030	0.003554	0.080607	0.055415	1.20%	0.056640	0.038938	184.82	0.162339	0.111603
6/3/2001	0.077505	170.7	0.012814	0.000030	0.003554	0.080607	0.055415	1.20%	0.056640	0.038938	184.82	0.162339	0.111603
6/4/2001	0.077505	170 7	0.012814	0 000030	0.003554	0 080607	0.055415	1.20%	0.056640	0.038938	184.82	0.162339	0.111603
6/5/2001	0.080560	170.7	0.012814	0.000030	0.003554	0.080607	0.055483	1.20%	0.058800	0.040473	184.82	0.162339	0.111741
6/6/2001	0.080157	170.7	0 012814	0 000030	0.003554	0 080607	0.055774	1.20%	0 058200	0.040271	184.82	0.162339	0.112328
6/7/2001	0.072984	170.7	0 012814	0.000030	0.003554	0.080607	0.055914	1.20%	0.052860	0.036667	184.82	0.162339	0.112608
6/8/2001	0.072629	170.7	0.012814	0.000030	0.003554	0.080607	0.055895	1 20%	0 052620	0.036488	184.82	0.162339	0.112571
6/9/2001	0.072550	170 7	0 012814	0.000030	0.003554	0.080607	0.056091	1.20%	0.052380	0.036449	184.82	0 162339	0.112965
6/10/2001	0.072550	170.7	0 012814	0.000030	0.003554	0.080607	0.056091	1.20%	0.052380	0.036449	184 82	0 162339	0.112965
6/11/2001	0.072550	170.7	0.012814	0 000030	0 003554	0 080607	0.056091	1.20%	0 052380	0.036449	184.82	0.162339	0.112965
6/12/2001	0.079754	170 7	0.012814	0 000030	0.003554	0 080607	0.055782	1.20%	0 057900	0.040068	184.82	0.162339	0.112342
6/13/2001	0.085479	170.7	0 012814	0.000030	0.003554	0.080607	0.056013	1.20%	0 061800	0.042945	184.82	0.162339	0.112808
6/14/2001	0.086333	170.7	0 012814	0 000030	0.003554	0.080607	0.055921	1.20%	0 062520	0.043373	184 82	0.162339	0.112623
6/15/2001	0.082374	170.7	0 012814	0.000030	0.003554	0 080607	0.055877	1 20%	0.059700	0.041384	184 82	0.162339	0.112534
6/16/2001	0.077561	170.7	0.012814	0 000030	0.003554	0.080607	0.055454	1 20%	0.056640	0.038966	184.82	0.162339	0.111683
6/17/2001	0.077561	170.7	0 012814	0.000030	0.003554	0.080607	0.055454	1.20%	0.056640	0.038966	184 82	0.162339	0.111683
6/18/2001	0.077561	170.7	0 012814	0 000030	0.003554	0.080607	0.055454	1.20%	0.056640	0.038966	184 82	0 162339	0.111683
6/19/2001	0.079527	170.7	0 012814	0 000030	0 003554	0 080607	0.055451	1 20%	0.058080	0.039954	184.82	0.162339	0.111676
6/20/2001	0.080490	170.7	0.012814	0.000030	0.003554	0 080607	0.055548	1.20%	0 058680	0.040438	184.82	0.162339	0.111873
6/21/2001	0.077445	170 7	0.012814	0.000030	0 003554	0.080607	0.055548	1.20%	0.056460	0.038908	184 82	0.162339	0.111873
6/22/2001	0.075307	170.7	0 012814	0.000030	0.003554	0.080607	0.055610	1.20%	0.054840	0.037834	184.82	0.162339	0.111997
6/23/2001	0.074383	170.7	0 012814	0 000030	0.003554	0.080607	0.055969	1.20%	0.053820	0.037370	184.82	0.162339	0.112719
6/24/2001	0.074383	170 7	0 012814	0.000030	0.003554	0.080607	0.055969	1.20%	0 053820	0.037370	184 82	0.162339	0.112719
6/25/2001	0.074383	170.7	0 012814	0.000030	0.003554	0.080607	0.055969	1.20%	0.053820	0.037370	184.82	0.162339	0.112719
6/26/2001	0.068818	170 7	0.012814	0.000030	0.003554	0.080607	0.056165	1.20%	0 049620	0.034574	184.82	0.162339	0.113114
6/27/2001	0.067003	170.7	0.012814	0.000030	0.003554	0.080607	0.056039	1.20%	0.048420	0.033662	184 82	0 162339	0.112860
6/28/2001	0.064685	170.7	0 012814	0.000030	0.003554	0.080607	0.055829	1.20%	0.046920	0.032497	184.82	0.162339	0.112438
6/29/2001	0.059950	170.7	0.012814	0 000030	0.003554	0.080607	0.056043	1 20%	0 043320	0.030119	184.82	0.162339	0.112868
6/30/2001	0.051888	170 7	0 012814	0.000030	0 003554	0.080607	0.056124	1 20%	0.037440	0.026068	184.82	0.162339	0.113032

	Gas Daily: Daily Midpoint			PG&E. Malin to On-System Deliveries Under Applicable Rate Schedules G-EG, G-AFT and G-SUR						PGT-NW: Kingsgate to Malin Under Rate Schedule FTS-1					
Flow Date	NOVA (AECO-C, NIT)	Exchange Rate[1]	NOVA (AECO-C, NIT)	G-EG Transport	Backbone G-AFT Redwood Path (SFV)[2]	G-SUR Surcharge[3]	PG&E Transport Charge	Backbone Shrinkage Allowance[4]	PG&E Shrinkage Charge	Unit Base Rate[5]	GRI[6] Res. Surcharge	GRI[6] Del. Surcharge	ACA[7]	PGT-NW Transport Charge[8]	% Fuel Rate per MMBtu
	($Cdn / GJ)	($Cdn $US)	($US / MMBtu)		($/MMBtu)							($/MMBtu)			
			(1) *1.055056 / (2)				(4) + (5) + (6)		(3) * (8)					(10) + (11) + (12) + (13)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)

Conversion Factors. 1 MMBtu = 1.055056 GJ; 1 $10^3 m^3$ = 37.45 GJ, 1 Month = 30.4 days

		ANG: Alberta/BC to Kingsgate Under Rate Schedule FS-1 with NEB Cost Recovery Charge									NOVA (Alberta System)[8]		
Flow Date	PGT-NW Fuel Charge	Distance	FS-1 Firm Service Demand	FS-1 Firm Service Commodity	NEB Cost Recovery	Total ANG Transport	Converted ANG Transport Charge	% Fuel Rate per GJ	ANG Fuel Charge	Converted ANG Fuel Charge	Monthly FT-D Demand	Converted NOVA Transport Charge	Final Converted NOVA Transport Charge
	($/MMBtu)	(Km)	($Cdn/GJ/Mon./Km)	($Cdn/GJ/Km)	($Cdn/GJ)	($Cdn/GJ)	($/MMBtu)		($Cdn/GJ)	($/MMBtu)	($Cdn/$10^3m^3$)	($Cdn/GJ)	($/MMBtu)
	(3) * (15)					(17) * [(18) / 30 4 + (19)] + (20)	(21) * 1.055056 / (2)		(23) * (1)	(24) * 1.055056/ (2)		(26) / 37 45 / 30 4	(27) * 1.055056 / (2)
	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)