Exhibit No.:	
Issues:	**MKP/RPC Pipeline Adjustment**
Witness:	**John B. Adger, Jr.**
Type of Exhibit:	**Rebuttal Testimony**
Sponsoring Party:	**Mid-Kansas Partnership/Riverside Pipeline Company, L.P.**
Case No:	**GR-96-450**

MID-KANSAS PARTNERSHIP/RIVERSIDE PIPELINE COMPANY, L.P.

REBUTTAL TESTIMONY

OF

JOHN B. ADGER, JR.

MISSOURI GAS ENERGY

A division of

Southern Union Company

CASE NO. GR-96-450

Jefferson City, Missouri
December, 1998

NON-PROPRIETARY

REBUTTAL TESTIMONY OF

JOHN B. ADGER, JR.

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BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

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REBUTTAL TESTIMONY OF JOHN B. ADGER

I. Introduction

Q. Please state your name and business address.

A. My name is John B. Adger, Jr. My business address is P. O. Box 237, Quentin, Pennsylvania 17083-0237.

Q. By whom and in what capacity are you employed?

A. I am employed by The Liberty Consulting Group. I direct Liberty's Natural Gas Practice Area.

Q. Please describe your training and work experience.

A. I graduated from the Massachusetts Institute of Technology in 1968 with Bachelor's degrees in Earth Sciences and Chemical Physics, and a Master's degree in Geology and Geophysics. From 1969 through 1973, I worked for the Mobil Oil Corporation in international oil and gas exploration. From 1974 through 1982, I worked for the U. S.

Federal Government. My last position there was Director of the Alaska Gas Project Office and Alaska Gas Staff Delegate for the U. S. Federal Energy Regulatory Commission (FERC). Since 1982, I have been engaged in consulting for various clients within the natural gas industry in the U. S. and Canada. A summary of my professional history is attached as **Schedule JBA 1** to my testimony.

Since the issuance of the FERC's Order 436 in the fall of 1985, I have worked extensively with natural gas distributors (local distribution companies, or LDCs) and their regulators on questions of natural gas supply strategy. In particular, during that period I have performed audits of the gas purchasing policies and practices of three LDCs for public utility commissions (PUCs), and I have reviewed the gas supply function at four gas-only LDCs and two combination electric-and-gas utility companies in the course of comprehensive management audits of those companies for PUCs. I have also assisted two distributors in preparing for PUC audits of their respective gas-supply functions.

Q. Have you previously testified before this Commission?

A. No, I have not.

Q. Please state the purpose of your testimony.

A. The purpose of my testimony is to address the prudence of expenditures by Missouri Gas Energy, a division of Southern Union Company (MGE), for natural gas supplies

acquired from Mid-Kansas Partnership (Mid-Kansas) under a Firm Gas Purchase Contract referred to as "the Mid-Kansas II Agreement", or "Mid-Kansas II".[1] The prudence of those expenditures has been called into question by Staff Witness Michael J. Wallis, who found a difference between the amount of those expenditures and the amount which might have been paid under a hypothetical alternative source of supply constructed by him.

II. The Evaluation of Prudence in Gas Purchasing

Q. Please describe the evaluation of prudence in gas purchasing by regulated utility companies.

A. Mid-Kansas Witness Howard Lubow presents an extensive discussion of the general concept of prudent behavior in a utility management setting. Under general standards of law and regulatory practice, prudence in gas purchasing by regulated gas utility companies has two aspects:

- Whether a company's decision to enter into a particular gas-supply contract was prudent in the context of the overall portfolio of contracts, which is a function of the alternatives available to the company at the time that it entered into the contract in question; and

- Whether the company's takes under all of its gas-supply contracts are consistent with a) the terms of the contracts, b) any non-cost considerations (such as diversification of sources of supply), and then c) least-cost sourcing of its requirements for supply.

[1] The Mid-Kansas II volumes were delivered to MGE under a separate transportation agreement with Mid-Kansas affiliate Riverside Pipeline Company, L.P. For ease of reference, the entity providing the gas and transportation service at issue in this proceeding is referred to hereinafter as "Mid-Kansas/Riverside".

The standard by which a company's actions are to be judged is also discussed in Mr. Lubow's testimony. In Missouri, as in most other States, the generally applicable standard is the one defined by the New York Public Service Commission in a case involving Consolidated Edison Company of New York, Inc.[2]

> ... the company's conduct should be judged by asking whether the conduct was reasonable at the time, under all the circumstances, considering that the company had to resolve its problems prospectively rather than in reliance on hindsight. In effect, our responsibility is to determine how reasonable people would have performed the tasks that confronted the company. (45 P.U.R., 4th, 1982, at page 331)

Regarding gas-cost prudence reviews, the Missouri Commission has said:

> The Commission is of the opinion that a prudence review of this type must focus primarily on the cause(s) of [any] allegedly excessive gas costs. ... The Commission is of the opinion that evidence relating to the decision-making process is relevant to the extent that the existence of a prudent decision-making process may preclude the adjustment. In addition, evidence about the particular controversial expenditures is needed for the Commission to determine the amount of [any] adjustment. ... The critical matter of proof is the prudence or imprudence of the decision from which expenses result. (*Re: Western Resources, Inc., d/b/a Gas Service, a Western Resources Company,* 3 Mo. P.S.C. 3d 480,489 (1995))

III. MGE's Actions Regarding the Mid-Kansas II Agreement

Q. Please describe what you have found regarding MGE's prudence in entering into and operating under the Mid-Kansas II Agreement.

[2] Case 27123. *Re: Consolidated Edison Company of New York, Inc.*, Opinion 79-1, January 16, 1979, quoted in Case Nos. EO-85-17 and ER-85-160, *Union Electric*, 27 Mo P.S.C. at 194.

A. Based upon my review of materials that Staff and MGE have furnished in response to data requests, my discussions with Mid-Kansas personnel, and my review of documents provided by Mid-Kansas, I believe that MGE's execution of and performance under the Mid-Kansas II Agreement was consistent with and supportive of a conclusion that MGE's conduct has been prudent and reasonable throughout.

1. MGE's prudence in entering into Mid-Kansas II

Q. Please describe what you have learned about MGE's decision to enter into the Mid-Kansas II Agreement.

A. The Mid-Kansas II Agreement is dated February 24, 1995. That contract is the successor to an earlier contract which was assumed by MGE when MGE acquired western Missouri gas distribution operations and properties from Western Resources, Inc. (Western). The prior contract had been entered into by Western (then doing business as KPL Gas Service Company) in 1990, and amended in 1991. (This prior contract is referred to hereinafter as "the Mid-Kansas I Agreement", or "Mid-Kansas I".)

The 1990 contract, with its 1991 amendment, was a result of an attempt by Western to bring an additional source of gas supplies to the Kansas City metropolitan area. Before the Mid-Kansas I supply was added, the Kansas City area was essentially completely dependent on the Williams Natural Gas Company (Williams) pipeline system. The Williams system was developed by the Cities Service Company, which

also owned the distribution company in Kansas City until the 1950s.[3] Since the pipeline and the distribution company were owned by the same company, the pipeline system and the distribution system were designed and developed together, with little or no consideration of moving gas from one part of the distribution system to another, or of access to alternative sources of supply.

Mid-Kansas was able to access parts of the Kansas City market because its pipeline system was developed initially to move liquid products into the area. The physical assets that comprise the Mid-Kansas system were part of a crude-oil gathering and refined-products transmission system owned by Phillips Petroleum Company. The system transported crude oil and refined products to and from a Phillips refinery located in the Fairfax industrial district of Kansas City, Kansas. The Mid-Kansas system was adapted to natural gas service, delivery points were added in Kansas City, Kansas, and the pipeline was extended across the Missouri River to the Riverside delivery point in Platte County, Missouri. In so doing, Mid-Kansas not only added a new competitor to the Kansas City area, but it also gave Western's Kansas and Missouri operations expanded access to supply areas in Oklahoma.

MGE had access to this background in the course of its "due-diligence" review of Western's contracts and operations. (That review would have been conducted prior to the closing of its acquisition on February 1, 1994.) Moreover, Southern Union reported that

[3] Cities Service divested itself of what became The Gas Service Company in the mid-1950s, to bring itself into compliance with the Public Utility Holding Company Act. Western acquired Gas Service in 1983.

> At the time the [Mid-Kansas] Contract was negotiated and executed,[4] the sales prices being charged by [Mid-Kansas] were competitive with those available from other, third-party sources of supply which reasonably were able to deliver gas into the Kansas City, Missouri area.
>
> The continuation of this condition -- the fact that the price of the supplies acquired under the [Mid-Kansas] Contract would remain competitive with those available from other, third-party sources of supply throughout the remaining term of the Contract -- was a basic assumption upon which the Contract was made.[5]

Southern Union further reported that:

> In reliance on the continuation of that assumption, Southern Union accepted assignment of the [Mid-Kansas] Contract effective as of January 31, 1994. (*Ibid.*)

Soon after the acquisition was closed, however, Southern Union became concerned that the Mid-Kansas supplies might be more expensive than those available from other suppliers. Moreover, on April 29, 1994, the Missouri PSC Staff recommended a disallowance of costs paid by Western under the contract. On June 1, 1994, MGE filed suit against Mid-Kansas and its affiliated upstream pipeline.[6] As reported by Mid-Kansas Witness Wendell Putman, MGE also suspended payment for gas supplies received after November 1994 under the contract, putting enormous financial pressure on Mid-Kansas. Intensive negotiations followed between MGE and Mid-Kansas/Riverside, resulting in part in the contract at issue in this proceeding,

[4] The reference here is to the 1990 contract, as amended in 1991 (Mid-Kansas I).

[5] "Complaint", filed by Southern Union Company in Civil Action No. 94-0511-CV-W-8, U. S. District Court for the Western District of Missouri, Western Division, on June 1, 1994.

[6] At the same time, MGE filed another lawsuit against both Western and Mid-Kansas's affiliated upstream pipeline raising issues with respect to the "Old Western Contracts". These contracts and their relationship to Mid-Kansas II are discussed below.

which was signed on February 24, 1995.

The question of whether MGE acted prudently in entering the renegotiated contract turns on what MGE's alternatives were at that time (the last half of 1994 and early 1995), and how the renegotiated Mid-Kansas contract compared with those alternatives. As a result of the development of the gas distribution system in the Kansas City area, MGE's system is composed of several distinct sub-systems that are not well connected to each other. This configuration is understandable, given the history of the system,[7] but it limits MGE's ability to vary its sources of gas supplies. For example, absent modification of MGE's system, or a commitment from a third pipeline to build facilities to the Riverside area, MGE's choices in that area are largely restricted to Williams and Mid-Kansas.

A conceivable option would have been for MGE to cease taking gas from Mid-Kansas, reverting to sole reliance on Williams in the Riverside area. Doing so, however, would have meant abandoning an alternative that had been endorsed by the FERC[8] and by both affected State public utility commissions[9] at the time of its

[7] The reference here is to the integrated development of the pipeline and distribution systems due to common ownership.

[8] In an order authorizing facilities to be constructed and operated by a Mid-Kansas affiliate, the FERC stated

> ... KPL, the local distribution company for the specified market area, is currently served by only one interstate pipeline in that area, [Williams].
>
> ... The Commission's transportation policy is to provide consumers with a variety of options by promoting access to a competitively priced market for natural gas. The facilities proposed by [a Mid-Kansas affiliate] will help to further these goals by providing KPL and other consumers an alternative facility through which to move gas. ("Order Issuing Certificate and Approving Abandonment", FERC Docket No. CP89-983-000, issued September 18, 1989, at pages 7-8.)

[9] In a related proceeding, in response to a pleading to the FERC by Williams, the Kansas Corporation Commission and the Missouri Public Service Commission argued

certification. Moreover, terminating the Mid-Kansas contract would likely have involved a substantial settlement payment, as the contract extended until 2009.[10]

It would be logical in these circumstances for MGE to focus on renegotiating the Mid-Kansas agreement, rather than reverting to Williams at Riverside. Mid-Kansas witness Putman has testified that, indeed, MGE approached the negotiations seeking revision of the terms of the contract, rather than termination.

MGE improved its position significantly in the renegotiation of the Mid-Kansas contract. **Schedule JBA 5**, attached to my testimony, compares features of the old contract with counterpart features of the one at issue in this proceeding. The principal improvements that MGE obtained were as follows:

- Commodity price: In place of an open-ended commitment to pay whatever costs that Mid-Kansas incurred in making supply available, MGE got a price linked to the price of supply on the Transok pipeline system in Oklahoma, which is generally lower than other Mid-continent prices;

- Transportation charges: In place of a commitment to pay whatever prices were approved by relevant regulatory authorities, including any rate increases authorized, MGE got prices that were fixed in the contract through the year 2009. Moreover, escalation in those prices was limited to two percent every

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It is precisely the relative captivity of KPL's Missouri and eastern Kansas system that counsels affording it opportunities to use other ... systems ... [than Williams's]. ("Joint Answer of Missouri Public Service Commission and Kansas Corporation Commission to Request of Williams Natural Gas Company for Stay and Joint Motion of Missouri Public Service Commission and Kansas Corporation Commission to Afford Parties an Opportunity to Address Issues Presented by Williams' Request for Rehearing", FERC Docket No. CP89-485, July 21, 1989, at page 9.)

[10] Settling a contract which is valid and in effect generally involves estimating a stream of revenues under the contract, and then discounting that stream to its present value using an agreed discount rate. The net present value of the income stream is then the amount of the settlement payment. Mid-Kansas Witness Putman estimates that the net present value of the revenue stream under the Mid-Kansas I Agreement and the companion Riverside Transportation Agreement at that time exceeded $100 million. Staff Witnesses Tom Shaw and Dave Sommerer both conceded that Mid-Kansas would not likely have terminated the contract without compensation. (See **Schedule JBA 2-1**, Deposition Transcript of Thomas Shaw, page 78, lines 24-25 and page 79, lines 1-4. See **Schedule JBA 3**, Deposition Transcript of David Sommerer, page 33, lines 2-6.) MGE Witness Langston made the same point in his deposition. See **Schedule JBA 4**, Deposition Transcript of Michael T. Langston, page 42, lines 14-23.)

three years, irrespective of the costs that Mid-Kansas incurs in owning and operating its system.

The new contract also provided that Mid-Kansas's service would convert from sales to transportation when the FERC took jurisdiction over Mid-Kansas's rates and services.[11] Moreover, MGE obtained an option to take assignment of a pro rata share of the capacity on the Transok, Inc. pipeline system held by Mid-Kansas if MGE chose to buy its gas supplies directly. Thus, if MGE finds that it can acquire supply and operate the Transok lease for less than 5 percent of the Transok index price (which is what MGE has been paying Mid-Kansas to perform these functions), MGE can take over and operate its share of the lease.

MGE also worked with Mid-Kansas/Riverside to revise another set of agreements that Bishop had entered into with Western at the time Mid-Kansas I was amended (October 1991).[12] Those agreements committed Western to a second project to be developed by Mid-Kansas/Riverside to bring an additional source of pipeline capacity to Kansas City.[13] When Western sold its western Missouri operations to MGE, the status of the "Old Western Contracts" became uncertain to MGE. The Riverside II Agreement, entered into by MGE and Mid-Kansas affiliate Riverside

[11] The service provided under Mid-Kansas II was a "bundled" sales service. When the FERC took jurisdiction over the Bishop Group's pipeline system (which occurred on June 1, 1998), the bundled sales service under Mid-Kansas II was replaced by an equivalent transportation-only service provided under a Firm Gas Transportation Service Agreement (Riverside I) executed at the same time as Mid-Kansas II.

[12] These agreements were between Western and four of Mid-Kansas's affiliates. The agreements are referred to hereinafter as "the Old Western Contracts".

[13] Studies done for Western by outside consultants in 1987 and 1991 strongly encouraged Western to diversify its sources of gas supply. The latter of those two studies considered specifically and recommended an expanded relationship with Mid-Kansas/Riverside. After completion of that work, Western agreed to certain amendments to Mid-Kansas I that Mid-Kansas/Riverside had been seeking, and entered into the Old Western Contracts.

Pipeline Company (Riverside) at the same time as the execution of the Mid-Kansas II Agreement, settled that uncertainty by committing the two companies to a new lateral off of the Panhandle Eastern pipeline system about 30 miles south of Kansas City. The new lateral would serve the southern part of the Kansas City metropolitan area, on both Kansas[14] and Missouri sides, with significantly larger volumes than were available under the Mid-Kansas Agreements. MGE's share of the new lateral was to provide 150,000 MMBtu/day, or more than 15 percent of MGE's requirement for peak-day capacity, into an area previously served almost entirely by Williams.[15]

Q. Is it unusual for an LDC to renegotiate supply arrangements so soon after assuming them?

A. Almost no gas utility company gets to develop its supply portfolio "from scratch". Typically, at any given point in time, a company has a set of contracts in place that must be honored, or renegotiated if necessary and if possible. Changes to commodity supply contracts, and to transportation and storage contracts, are usually made when other contracts expire.

The circumstance of "inheriting" in-place supply arrangements, and other supply-related commitments, was certainly true for MGE. As all acquirers do, MGE

[14] A counterpart agreement was entered into on the Kansas side by Western and Mid-Kansas affiliate Kansas Pipeline Partnership on February 28, 1995.

[15] After construction of the lateral had begun, the Bishop Group sold the project to K N Energy. By that time (November, 1996), K N had developed the Pony Express Pipeline System by acquiring an abandoned crude oil pipeline from Wyoming to a point south of Kansas City and converting it to natural gas service. Thus, MGE's actions in negotiating the Riverside II Agreement ultimately led to access to an entirely new supply area.

took some time to learn about those arrangements and commitments prior to closing its purchase of the properties. In the course of its due-diligence review, MGE must have found that the in-place arrangements were either delivering gas at competitive prices or, as in the case of the Tight-Sands Contracts, were subject to special considerations that required their continuation.[16] Upon completion of its review, MGE agreed to assume those contracts and commitments as part of its acquisition of Western's western Missouri operations.[17]

Q. What do you conclude about the prudence of MGE's actions in entering into the Mid-Kansas II Agreement?

A. On the basis of my experience with gas supply evaluations for companies like MGE, the Company's actions in assuming, and then seeking adjustments to, the portfolio of supply contracts and commitments entered into by Western were reasonable and prudent. Specifically,

- MGE's examination of those contracts and commitments in its due-diligence analysis revealed no reason to not assume them when it closed its acquisition, and it does not appear that MGE proposed any changes to those contracts and commitments in its agreement with Western, or in the approvals that it sought from the Missouri Public Service Commission;

[16] In 1984, Western's predecessor Kansas Power & Light brought suit against several natural gas producers and Williams to recover alleged overcharges from sales of gas from "tight-sands" formations in Wyoming. The litigation was settled in 1990. Under the settlement, KPL would receive approximately $100 million in credits on gas purchases over a 20-year period. The agreed purchases were of the tight-sands gas. (See Mo. P.S.C. Case No. GR-91-286, decided October 11, 1991.)

[17] The Missouri Public Service Commission approved the acquisition, with conditions that did not address the supply arrangements, on December 29, 1993.

- Very soon after the acquisition was completed, MGE moved aggressively to renegotiate a supply contract (Mid-Kansas I) that had, in MGE's view, moved out of line. MGE's aggressive action brought considerable improvement in the terms of that contract from the perspective of MGE's customers, while preserving MGE's access to an alternative supplier (Mid-Kansas) which, in turn, provided improved access to a lower-cost supply region;

- MGE also moved aggressively to reduce its and its customers' potential exposure to costs which might have been incurred under other agreements with Mid-Kansas/Riverside (the Old Western Contracts), while securing the principal benefit of those agreements, namely the new high-capacity lateral from Panhandle into southern Kansas City. That lateral alone increased the non-Williams portion of MGE's peak-day supply capacity from 8.3 percent to almost 25 percent, with the potential to divert a much larger portion of MGE's annual requirements away from Williams.

The results of MGE's assumption of, and then negotiated adjustments to, these agreements were available to the Missouri Public Service Commission Staff and other interested parties as they considered MGE's gas supply costs for the 1993-94 ACA period. In a stipulation in that case (Case Nos. GR-94-101 and GR-94-228), the parties agreed:

> ... that neither the execution of the MKP/WR Sales Agreement and the Riverside/WR Transportation Agreement I [these are the agreements which were assumed by MGE], nor the decisions associated with the execution of the Missouri Agreements [one of these is the Mid-Kansas II contract] shall be the subject of any further ACA prudence review. (Stipulation and Agreement, at page 4)

The Commission approved the stipulation on June 11, 1996.[18]

2. MGE's prudence in operating under its contracts.

Q. What about MGE's operations under the Mid-Kansas II Agreement?

[18] "Order Approving Stipulations and Agreements", issued in Case Nos. GR-94-101 and GR-94-228, on June 11, 1996.

A. The second aspect of prudence in gas purchasing is whether a company's portfolio of contracts is operated in a manner which results in the lowest possible gas price to its customers, after giving effect to the requirements in the various contracts, and to other special considerations which may impact a company's gas-purchasing decisions.[19] In MGE's case, the standard prudence review has been at least partially displaced by the Experimental Gas Cost Incentive Mechanism (EGCIM),[20] but the intended result is the same: to produce a pattern of purchasing decisions which minimizes costs to customers, consistent with the requirements of a company's gas-supply contracts, and with other considerations which affect the supply process.

Schedule JBA 6, attached to my testimony, is a chart which shows gas prices on the three pipelines which served MGE during the months which comprise the ACA period of interest in this proceeding. The chart shows that, throughout the period, gas prices on the Transok system were considerably lower than those on the Panhandle system which, in turn, were slightly lower than those on the Williams system. The Transok system is the source for much of the gas supplied under the Mid-Kansas contract and, as noted earlier, the price for gas supplied under the contract is linked to prices on the Transok system. The chart suggests that the slight premium over the

[19] An example of such a consideration is the influence of the tight-sands settlement on MGE's purchases. See the Commission's order cited in Note 16, above, especially item 6 of the Stipulation and Agreement attached to and adopted by the order.

[20] In its Report and Order in Case No. GO-94-318, Phase II (*Re: In the matter of the investigation of certain PGA-related issues involving Missouri Gas Energy, a division of Southern Union Company)*, issued January 31, 1996, the Commission found that its PGA/ACA process should be modified for MGE on an experimental basis to include a commodity-cost incentive mechanism. Under MGE's EGCIM, so long as MGE's actual gas costs are within ranges specified in the order, no prudence review is necessary. If actual gas costs are above a specified level, however, MGE would have the burden of dispelling the Commission's doubts about its gas-purchasing practices. See the Commission's order at pages 14-21.

Transok index price (5 percent) that MGE pays for that supply is generally less than half of the difference between Transok prices and the average of Panhandle and Williams prices, and considerably less than half of that difference in some months. (Notice especially the months of December, 1996, and January and February, 1997.)

Schedule JBA 7, also attached to my testimony, is a chart which shows daily volumes taken by MGE on each of the three pipelines, along with estimates of the load factor on each pipeline for each month from April, 1996 through March, 1997.[21] Notice that the load factors on Mid-Kansas, which is the source of the cheapest gas, are higher than those for Williams in all five of the heating-season months, and are higher than those for Panhandle in three of those five months.[22] Mid-Kansas's load factors are generally higher during the non-heating season as well, even though takes in those months are complicated by storage-fill volumes and the requirement that MGE take tight-sands gas.[23]

[21] This period is not exactly the same as the period of interest in this proceeding, but nine of the 12 months are the same, and the heating-season months, which are the most important for purposes of this comparison, are the correct ones for the current proceeding.

[22] I did not attempt to explore why Mid-Kansas's load factor is lower than Panhandle's in November, 1996 and March, 1997, but I suspect that it is because the Panhandle supply is a smaller proportion of the supply available to a larger market area than is the case with Mid-Kansas. Thus, MGE's takes of Mid-Kansas supply are probably constrained by physical factors (or by MGE's need to take tight-sands gas) in those two months. Indeed, the load factor on Panhandle in those months is considerably higher than that on Williams in those months, which is consistent with the observed relationship between prices on those two systems. (Prices on the Panhandle system are lower than those on Williams.)

[23] Joan Schnepp, Vice-President of Operations for Mid-Kansas's operating company (Kansas Pipeline Operating Company, or KPOC), and also a witness in this proceeding, reports that she was told that the reason that MGE took no gas from Mid-Kansas in September, 1996, was that MGE had to correct imbalances with or relating to the Williams system.

Other information suggests that the price differentials among the supply sources to which MGE has access are exerting a strong influence on MGE's supply operations. **Schedule JBA 8** and **Schedule JBA 9**, also attached to my testimony, are taken from MGE presentations to prospective gas suppliers.[24] The first presentation was in March 1994, soon after MGE took over operations from Western; the second was in August 1997, after the Mid-Kansas contract had been renegotiated, and the Pony Express Pipeline project was being implemented. Comparison of the figures on the two charts shows the following:

- After renegotiation of the Mid-Kansas contract resulted in lower commodity prices, volumes taken by MGE from that source approximately doubled;

- Volumes also shifted from Williams to Panhandle over the period; and

- Introduction of gas from Wyoming via the Pony Express project was expected to displace volumes taken on all three of MGE's other pipelines, with Williams sources taking the largest proportionate displacement.

Q. What do you conclude from this information?

A. The patterns cited -- monthly load factors during months of interest in this proceeding, and estimated and actual takes by pipeline since 1992 -- strongly suggest that purchasing has been conducted in a way that minimizes costs to MGE's customers. Certainly these patterns are consistent with and suggestive of a conclusion that gas purchasing has been conducted in a prudent manner.

[24] Materials from these presentations were submitted by MGE in response to Mid-Kansas Data Request No. 14.

Furthermore, Mid-Kansas's gas price during the period was below the index prices on the Panhandle and Williams systems. Since MGE is supplied via only those three pipelines, and since the EGCIM uses price benchmarks based on a weighted average of index prices on the Panhandle and Williams systems, MGE's actual gas costs are likely to have been within the tolerance zone provided in that mechanism, where no ACA-period prudence review is necessary.

IV. Staff Witness Wallis's Concerns

Q. Please comment on the concerns expressed in Staff Witness Wallis's Direct Testimony.

A. Staff Witness Wallis's Direct Testimony, submitted in this proceeding in August, seems to suggest that MGE erred in taking gas from Mid-Kansas, since those volumes "... could have been nominated and transported on Williams ..." at a lower cost. (Wallis Direct Testimony at pages 2-3) While he concedes that commodity costs on Mid-Kansas are lower than those on Williams, he says that Mid-Kansas's higher transportation costs more than offset the difference in commodity costs.

Mr. Wallis's argument ignores the existence of an in-place and effective contract with Mid-Kansas, and MGE's obligation to honor that contract. First, I share MGE Witness Langston's assessment that the Mid-Kansas II Agreement does not provide for nominating and transporting gas purchased under that contract via an alternate route.[25] Second, even if such an option was allowed under the contract, Mr. Wallis

[25] The reference here is to Mr. Langston's Direct Testimony, filed in this proceeding on August 3, 1998, at page 13.

underestimates the costs that would have been incurred. As is the case with most pipelines (including Williams), most of the transportation charges under the Mid-Kansas contract are in the form of reservation ("demand") charges, which means that they must be paid irrespective of whether gas is actually shipped. Thus, those charges would have to be added to the costs of Mr. Wallis's alternative in order for it to provide a choice that MGE might validly make. A valid alternative would have to include 1) reservation charges on Mid-Kansas, 2) variable transportation charges on Williams,[26] 3) the cost of interruptible or released capacity on Williams, and 4) gas supply purchased in field markets served by Williams. Such an alternative would have exceeded the cost of the Mid-Kansas supply by at least **_____**, plus the cost of the capacity on Williams. Thus, if Mr. Wallis's argument is that MGE was imprudent in the way that it operated under its contracts, correcting his analysis shows that his argument is simply wrong.

Another conceivable interpretation of Mr. Wallis's hypothetical is to assume that MGE could get out of its contract with Mid-Kansas somehow,[27] and enter into a contract with Williams for the same services. Assuming for the sake of argument that

[26] Mr. Wallis's number for this component, or his amount for gas supply (both of which are presented in the work paper that he attached to his response to Mid-Kansas Data Request No. 1), is wrong. MGE points out in its response to Staff Data Request No. 23 that
**_____
_____
_____
_____**

[27] Recall that Mid-Kansas Witness Putman estimated that the net present value of the revenues under Mid-Kansas I was in excess of $100 million. Recall also that Staff Witnesses Shaw and Sommerer, and MGE Witness Langston, testified in their respective depositions that they had not seen, nor were they aware of, situations where a company could simply "walk away from" a valid contract. See Note 10, above.

this could be done, Mr. Wallis's comparison of the costs of the alternatives is inaccurate for the following reasons:

- His calculation uses city-gate volumes for computing the cost of his Williams alternative, rather than field-purchase volumes;[28]

- He ignores "direct-bill" amounts -- items like take-or-pay charges, Order 636 transition charges, recovery of costs incurred to remedy PCB contamination, etc. -- which would certainly apply to transportation service provided by Williams.

In responding to Mr. Wallis's data request regarding the costs of his hypothetical (Staff Data Request No. 23), MGE did not include direct-bill amounts. MGE can speak to why those amounts were not included in its response; my view is that, given the history of Williams's relationship with what is now MGE, it is highly likely that Williams's other customers would insist that a new contract to replace Mid-Kansas bear a pro rata share of Williams's direct-bill costs. Those customers would view a contract which substituted for Mid-Kansas as a resumption of a prior relationship -- same customer, same facilities, same quantity, same delivery point as had been in place prior to the introduction of the Mid-Kansas supply -- rather than a new one. Accordingly, those customers would insist that the resumed relationship bear its fair share of Williams's direct-bill costs, and I believe that a proper comparison has to include them.

Schedule JBA-10, attached to my testimony, is a chart which illustrates the effects of correcting Mr. Wallis's comparison. The bar on the left shows Mr. Wallis's recommended adjustment as he developed it from MGE's response to Staff Data

[28] The difference is pipeline fuel, which is reported as variable transportation cost for Mid-Kansas.

Request No. 23. The second bar shows the reduction in the adjustment for Mr. Wallis's mistake regarding pipeline fuel.[29] The third bar shows how much the adjustment would be reduced by assigning a pro rata share of MGE's direct-bill costs to Mr. Wallis's hypothetical.[30]

With those two adjustments, the city-gate costs (commodity supply plus transportation costs) of the two alternatives, Mid-Kansas actual and Mr. Wallis's hypothetical, differ by less than **_____**. In my experience, that is a very small difference for competing supply alternatives. The difference among the city-gate costs of gas delivered to New York City via Transco, Texas Eastern and Tennessee Gas Pipeline, for example, is usually at least five percent, and the delivered cost of gas to South Commack (Long Island), New York via the Iroquois system is usually at least 15 percent above the average of the other three.

In approving MGE's gas-cost incentive mechanism, the Missouri Commission allowed for management discretion in selecting an optimal mix of supply resources. The tolerance zone and sharing ranges established as part of that mechanism allow MGE to trade off among capacity resources and commodity supplies, without having to demonstrate the prudence of those trade-offs, as long as the weighted average cost of

[29] See Note 26, above.

[30] This adjustment is conservative. If MGE were to resume this relationship with Williams, I would expect Williams's other customers to demand that this service bear a pro rata share of all of Williams's direct-bill costs, rather than a share of MGE's portion of those costs, which is how the adjustment here is calculated.

those commodity supplies (excluding Tight-Sands gas) is less than ten percent above the benchmark.[31]

The fourth bar on my chart shows that Mr. Wallis's proposed adjustment would be negative if he had used 1.1 times the benchmark gas cost in the incentive mechanism, rather than the benchmark itself. Under the incentive mechanism, MGE's commodity purchases are presumed prudent if the weighted average cost of those purchases is less than 1.1 times the benchmark gas cost. Thus, the delivered cost of Mid-Kansas supply could have been almost **_____** percent higher than it was and still not have resulted in a prudence review.[32]

Q. What about Mid-Kansas's transportation charges?

A. Mr. Wallis's concern seems to be that the transportation charges under the Mid-Kansas contract are higher than those on the Williams system.[33] In fact, this difference is likely due to the fact that Mid-Kansas is a relatively new gas pipeline system, whereas the Williams system has been in place for some time. The new-versus-old difference gives rise to two kinds of differences in a pipeline's rates:

- Construction costs: Because of general increases in construction costs over time, almost any facility constructed today costs more than an identical facility

[31] The benchmark is four percent above a weighted average of index prices on the Panhandle and Williams systems. See the Commission's order in Case No. GO-94-318, cited in footnote 20.

[32] This estimate is probably conservative. The EGCIM works on the weighted average cost of gas (WACOG), rather than on the cost of individual streams. Thus, unless the commodity costs of MGE's other gas supplies were quite high, the cost of the Mid-Kansas supply could have been even higher without raising the WACOG out of the tolerance zone.

[33] See, *e.g.*, his response to Mid-Kansas Data Requests No. 12, 53A, and 55A.

constructed 60 or 70 years ago. Under rate-base/rate-of-return regulation, higher construction costs yield a higher rate base, which, in turn, yields higher transportation rates and charges.

- This effect also occurs with facilities which, like many of the components of the Mid-Kansas system, were acquired by Mid-Kansas' upstream affiliate, rather than constructed. Acquisitions tend to take place at values related to replacement costs, rather than historical costs. The effect on rate base, and thus on transportation rates and charges, is the same: higher construction costs make the replacement cost of a long-lived facility (like a pipeline) considerably higher than the original installation cost. Consequently, the rate base of a pipeline which is acquired and converted to gas service is likely to be considerably higher than that of an identical facility which was constructed and placed into service 60 or 70 years ago.

- Depreciation: Facilities which have been in service for a long time also have the benefit of many years' depreciation in determining their rate base, and thus their transportation rates and charges. Newer facilities, whether they have been constructed or acquired, have had less time to be depreciated. Again, in a rate-base/rate-of-return environment, this difference results in lower rates and charges for an older facility.

Q. Is it unusual for pipelines with different cost structures to serve the same city-gate markets?

A. Examples of pipeline systems which serve the same markets but which have different cost structures, and thus different rates and charges, are plentiful. One example that I am familiar with is the pipelines into the State of Connecticut. The three LDCs in that State are served by three pipelines: the Tennessee Gas Pipeline system, the Algonquin Gas Transmission system, and the Iroquois Gas Transmission system. The three systems are of different vintages, which manifests itself in their respective rates for transportation service:

**_____

[redacted]**[34]

Many more examples could be cited; the point is that Mr. Wallis's concern about Mid-Kansas's transportation charges and their relationship to Williams's is not a basis to conclude that MGE was imprudent in contracting to pay a higher transportation charge.

Q. Are there good reasons for an LDC to choose a pipeline system with higher transportation charges?

A. The TCPL/Iroquois system, like Mid-Kansas, involves more expensive transportation, but it connects the city-gate markets it serves with less-expensive gas: gas from western Canada. Mr. Wallis's analysis acknowledges this trade-off, as his analysis compares the cost of two alternative sources of gas supply, Mid-Kansas and his hypothetical involving Williams, on the basis of their respective total costs -- commodity supply and transportation -- delivered to the city gate.

[34]** [redacted] **

Q. Are there other reasons that an LDC might choose a pipeline system with higher transportation charges?

A. As noted above, Mr. Wallis's analysis implicitly acknowledges one of the reasons that an LDC might contract for more-expensive transportation service, namely, access to a lower-cost gas supply. There are at least two other reasons which seem likely to have been considered by MGE in reaching its decision to contract with Mid-Kansas: supply reliability and increased negotiating "leverage" with the other pipelines, particularly Williams.

Regarding reliability, it is almost self-evident that a larger number of sources of supply provides more reliability than a smaller number. This consideration is magnified when the numbers are small: two sources versus one, for example, or three versus two. MGE's predecessor Western had an opportunity to experience the value of a second supplier in 1993. In the late summer of that year, severe flooding resulted in operational difficulties on the Williams system; only continuing service from Mid-Kansas into the north of Kansas City, and from Panhandle into the south, kept a difficult situation from becoming much worse.

On the issue of negotiating leverage, there is considerable evidence that MGE was concerned about its heavy reliance on Williams at the time that the Mid-Kansas contract was being renegotiated (late 1994 and early 1995). At that time, in addition to the Mid-Kansas negotiation, MGE was evaluating alternatives for supplying an additional 100,000 to 150,000 MMBtu/day into its Kansas City market to meet observed and anticipated growth in that market.

Internal documents dating from that period[35] show that **_____

_____

_____

_____

_____

_____

_____ **.

MGE found Mid-Kansas/Riverside much easier to work with. As noted earlier, considerable progress had been made in revising the terms of the Mid-Kansas I Agreement, and Mid-Kansas/Riverside was amenable to converting the Old Western Contracts into an alternative involving a new, high-capacity connection, which Mid-Kansas/Riverside would construct and own, between Panhandle's main line and MGE's distribution system on the south side of its service territory. Released firm capacity was generally available at some level on Panhandle, and Mid-Kansas/Riverside's main pipeline system was inter-connected with Panhandle upstream of the Kansas City area. Thus, the alternative being discussed with Mid-Kansas/Riverside provided an option to use the Group's main system to ship Oklahoma gas into the south of Kansas City (via Panhandle and the new link), as well as into the Riverside area. This option was in addition to options involving supplies from field markets served by the Panhandle system. In an internal evaluation dated January 25, 1995,[36] MGE found that

[35] See, *e.g.*, "Analysis of Kansas City Market Needs and Capacity Alternatives", January 25, 1995.

[36] *Ibid.*

**

**

In early February, 1995, MGE sent this internal analysis to an outside consultant for review. In his report,[37] the consultant emphasized the benefits of working with Mid-Kansas/Riverside in dealing with Williams:

**

**

Note that the potential annual savings referred to by the consultant --** **** -- was almost as large as the Mid-Kansas total transportation charge that Mr. Wallis is concerned about now. This relationship suggests to me that bargaining leverage vis-a-vis

[37] Reed Consulting Group, February 14, 1995.

Williams was quite properly a significant consideration in MGE's decision to enter into the Mid-Kansas II and related agreements.

The cited language and the rest of those two documents make clear MGE's perception that an expanded relationship with Mid-Kansas/Riverside was a preferred option for further diversifying its sources of supply into its Kansas City service territory. Such diversification was an objective that MGE sought for all of the reasons previously cited: expanded access to low-cost supply regions, additional supply security, and increased bargaining leverage vis-a-vis existing pipelines, particularly Williams. Mid-Kansas Witness Langley points out in his deposition[38] that adding a second contract with the Bishop entities provided a fourth benefit: averaging down the overall costs of the supply capacity made available by Mid-Kansas/Riverside.

As previously noted, the Mid-Kansas system was originally installed to move crude oil and refined petroleum products to and from a refinery in Kansas City, Kansas. While the system was able to be converted to natural gas service, it uses smaller-diameter pipe than would have been the case had it been designed for gas transmission. Smaller-diameter pipe involves relatively high capital and operating costs when considered on a *per-unit-of-installed-capacity basis.*

The lateral to Panhandle was to have the effect of mitigating those high capital and operating costs. The design of the lateral was optimized for natural gas service, and the installed capacity was to be considerably higher than that provided by Mid-Kansas II -- MGE's portion of the lateral was to be 150,000 MMBtu/day, or more than three times the capacity provided by Mid-Kansas II.

[38] See **Schedule JBA 11**, Deposition Transcript of Dennis Langley, page 32, lines 9-19

As also previously noted, Mid-Kansas II and Riverside II were entered into at the same time. **Schedule JBA 12**, attached to my testimony, illustrates the effect on the capacity costs to MGE of adding the second contract. The blending of Mid-Kansas II and Riverside II results in a weighted average capacity cost of $6.6578 per MMBtu/day per month, which is $3.6125 per MMBtu/day per month less than the counterpart rate for capacity on Williams, which was $10.2703 at the time that Riverside II was expected to go into service (October 1, 1996).

Q. What do you conclude from this information?

A. I conclude that Mr. Wallis's concern about the level of Mid-Kansas's transportation charges is unjustified. In support of that conclusion, I have cited another example[39] of pipelines with very different transportation charges, but which serve the same city-gate markets, and I have identified three reasons why an LDC might reasonably choose to contract with the higher-cost system:

1. To access lower-cost gas supplies: Even Mr. Wallis's analysis acknowledges the relevance of this consideration in MGE's decision;

2. For additional supply reliability: The occurrence in this decade of an event requiring alternative suppliers to compensate for operational difficulties illustrates the validity of this concern; and

3. For additional bargaining leverage in dealing with a dominant supplier: Internal documents contemporaneous with MGE's decision to enter into the Missouri Agreements make clear the relevance of this consideration.

[39] As previously noted, I believe that many such examples could be found. The one cited was readily accessible to me.

Moreover, in the case of Mid-Kansas, the simultaneous execution of the Riverside II Agreement effectively lowered the cost of capacity on Mid-Kansas/Riverside to a level considerably below that on Williams.

V. Overall Conclusions

Q. Please summarize your conclusions.

A. Mr. Wallis's Direct Testimony proposes an adjustment in gas costs recoverable by MGE for the '96/'97 ACA period. The reason that he gives is the difference between amounts paid by MGE to Mid-Kansas and an amount that might have been paid under a hypothetical alternative developed by him.

Mr. Wallis's deposition[40] makes clear that the real issue is MGE's decision to enter into the Mid-Kansas II Agreement. His proposed adjustment is his estimate of the damage done to MGE's ratepayers during the '96/'97 ACA period by MGE's decision (in 1995) to enter into the contract.

I have identified and presented evidence that strongly indicates to me that MGE's decision to enter Mid-Kansas II was prudent, and that MGE's operation of its effective contracts during the ACA period was also prudent. I have also provided another example -- and I believe that I could find many such examples -- of city-gate markets being served by pipelines with quite different transportation charges, and I have presented several reasons why an LDC's customers might be well served by that

[40] See **Schedule JBA 13**, Deposition Transcript of Michael Wallis, page 52, lines 6-8.

LDC contracting for transportation service on a more-expensive pipeline. I have also presented what I believe is particularly compelling evidence of MGE's consideration of the benefits to its customers in the Kansas City area of competition among pipelines to provide gas-delivery capacity to that area.

Finally, I have shown that the comparison used by Mr. Wallis to compute his proposed adjustment is simply wrong:

- First, even before correcting the mistakes in Mr. Wallis's comparison, the difference between the average delivered cost of the Mid-Kansas supply and that of Mr. Wallis's hypothetical alternative is well within the tolerance of MGE's EGCIM;

- Second, when Mr. Wallis's proposed adjustment is corrected for variable transportation charges and Williams direct-bill charges, the difference between Mid-Kansas's costs and those of his hypothetical alternative is within the range of variation among such costs that I have seen in other city-gate markets in the U.S., particularly in the Northeast;

- Third, when Mr. Wallis's proposed adjustment is further corrected for Mid-Kansas demand charges which would have to be paid even if volumes were nominated and shipped on Williams, Mr. Wallis's alternative is more expensive than the Mid-Kansas supply.

For all of these reasons, I urge the Commission to reject Mr. Wallis's proposed adjustment.

Q. Does that conclude your prepared Rebuttal Testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the matter of the Missouri Gas Energy's Gas Cost Adjustment Tariff Revisions to Be Reviewed in its 1996-1997 Annual Reconciliation Adjustment Account	))))	Case No. GR-96-450

AFFIDAVIT OF JOHN B. ADGER, JR.

STATE OF KANSAS)
) ss.
COUNTY OF JOHNSON)

John B. Adger, Jr. of lawful age, on his oath states: that he has participated in the preparation of the foregoing Rebuttal Testimony in question and answer form, considering of 20 pages to be presented in the above case; that the answers in the foregoing Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

John B. Adger, Jr.

Subscribed and sworn to before me this 30 day of November, 1998.

FELICIA A. BODY
NOTARY PUBLIC
STATE OF KANSAS
MY APPT. EXPIRES 6-2-2002

Notary Public

My commission Expires: 6-2-2002

JOHN B. ADGER, JR.

Areas of Specialization

Natural gas supply and procurement strategy; natural gas marketing strategy; gas industry strategic analysis and business planning; U.S. and Canadian gas industry regulation.

Relevant Experience

Commission-Sponsored Audits

Lead Consultant on Liberty's management audit of Southern Connecticut Gas Company for the Connecticut Department of Public Utility Control. Responsible for reviews of gas supply and marketing activities, and coal tar remediation activities.

For the staff of a regulatory commission in the northeast U.S., evaluated a proposed gas-service and capacity-release project that was proposed by a jurisdicational utility.

Lead Consultant on Liberty's management audit of Connecticut Natural Gas Company for the Connecticut Department of Public Utility Control. Responsible for reviews of gas supply and marketing activities.

Managed Liberty's audit of the gas purchasing and supply management policies and practices of K N Energy, Inc. for the Wyoming Public Service Commission. Responsible for reviews of gas acquisition, gas transportation and storage, relationships with affiliates, and response to regulatory change. Conducted supplemental evaluations in response to Liberty's initial findings, and presented testimony to the Commission in the proceeding to consider K N's pilot program for unbundling its services in Wyoming.

Lead Consultant on Liberty's management audit of Yankee Gas Services Company for the Connecticut Department of Public Utility Control. Responsible for reviews of gas supply activities and coal tar remediation activities.

Directed Liberty's analysis for the Georgia Public Service Commission of the impacts of FERC's Order 636 on gas rate structures in Georgia.

Consultant on Liberty's management audit of the Tennessee operations of United Cities Gas Company for the Tennessee Public Service Commission. Responsible for reviews in system operations, marketing, and affiliate relationships.

Lead Consultant on Liberty's audit of gas purchasing policies and practices at Pike Natural Gas Company and Eastern Natural Gas Company for the Public Utilities Commission of Ohio. Responsible for reviews of gas acquisition, gas transportation services, and response to regulatory change.

Consultant on Liberty's audit of the affiliate relationships of Public Service Enterprise Group (holding company for Public Service Electric & Gas Company) for the New Jersey Board of

Regulatory Commissioners. Responsible for reviews of systems and processes, affiliate relationships, and transaction analysis with regard to (a) the purchase of gas from the Group's gas-producing subsidiary, (b) the purchase of electric power from the Group's IPP subsidiary, and (c) the Group's real estate subsidiary.

Led the evaluation of gas supply activities as part of Liberty's management audit of New York State Electric & Gas Corporation for the New York Public Service Commission.

Directed an evaluation of the marginal costs of the District of Columbia Natural Gas Company, a division of the Washington Gas Light Company, for the Public Service Commission of the District of Columbia.

Lead Consultant on a general management audit of the Peoples Natural Gas Company, a subsidiary of Consolidated Natural Gas Corporation, for the Pennsylvania Public Utility Commission. Responsible for the review of gas supply activities.

Natural Gas Supply Strategy

For Kansas Pipeline Operating Company, evaluated certain gas supply contracts entered into by Western Resources' KPL Gas Service Company. Presented testimony to the Kansas Corporation Commission.

For a steam utility in Pennsylvania, solicited offers for gas supply, and structured the evaluation of the responses.

For the Potomac Electric Power Company, assisted in the development of comprehensive policies and procedures for fuels procurement. Responsible for gas acquisition policies and procedures.

Directed development of a gas supply strategy for a power-supply cooperative's first combustion turbines. (Coop's generation previously all coal-fired.)

For Delmarva Power & Light Company, assisted an internal review of gas supply planning for electric power generation.

Served as gas supply consultant to two major Midwestern gas distributors. In that capacity, directed development of long-term supply plans, short-term contracting strategies, and peak-load management plans. Also provided staff support to teams formed to negotiate with producers regarding long-term gas supply contracts, and with pipelines regarding conditions of service. Directed quantitative analysis of particular supply decisions, and did documentation projects.

For an investment banking group, explored the influence of the Midland Cogeneration Project's gas supply contracts on the Project's economic viability.

For the Interstate Natural Gas Association of America (trade association of gas pipeline companies), participated in a comparative study of supply contracting practices for gas, coal, and fuel oil. Developed recommendations for gas supply contracting.

For the Wisconsin Distributors Group, directed an analysis of gas supply alternatives for the State of Wisconsin. Directed a similar study of gas supply alternatives for the municipal Gas Department of the City of Charlottesville, Virginia.

Natural Gas Marketing Strategy

Assisted a production-area storage developer in identifying prospective users of a proposed storage facility, and in marketing interests in the project.

For National Fuel Gas Supply Corporation, analyzed potential markets for gas storage and pipeline capacity in particular sectors and in particular geographic areas. Also recommended opportunities in electric utility industry restructuring for consideration by NFGS management.

For an offshore supplier of LNG, participated in an evaluation of North America as a potential market for its gas.

For the municipal Gas Department of the City of Charlottesville, Virginia, directed a rate design study. Also recommended modifications to customer service agreements.

For Yankee Gas Marketing (now Enron Access Energy), directed an analysis of line-of-business restrictions as applied to the gas industry. This analysis was attached to Yankee's filing in the FERC's rule-making proceeding regarding rules of conduct for pipeline-affiliated marketers (proceeding resulted in the issuance of FERC Order 497).

For the Canadian Petroleum Association and the Independent Petroleum Association of Canada, participated in an analysis of regional markets for Canadian gas in the U.S.

For various U.S. and Canadian gas producers, evaluated particular regional and sectoral gas markets in the U.S. Also developed strategies for market penetration.

For U.S. and Canadian producers and pipeline companies, directed analyses of alternative gas transportation systems. Also for U. S. Gas distribution companies.

For U.S. and Canadian gas pipelines and marketers, participated in preparation of a multi-client study of the market for residual fuel oil. Also developed strategies for gas sellers to use in competing with residual oil.

Gas Industry Strategic Analysis and Business Planning

Co-directing a project to develop a comprehensive unbundling strategy for a gas distributor with operations in 12 states.

Directed a project to assist an electric utility in exploring opportunities in related businesses. Options considered included gas pipeline and storage projects; distribution of other fuels, including natural gas, propane and heating oil; and ventures in telecommunications.

For a combination electric and gas utility company in the midwest U.S., participated in a major re-evaluation of its strategy for its gas business unit.

For a major Canadian pipeline company, prepared an analysis of strategic factors in U.S. pipeline industry mergers. Subsequently presented findings of the study to the company's Corporate Strategy and Policy Committee.

For an investor group, evaluated three gas-gathering systems and an intra-state pipeline for possible acquisition. One gathering system was acquired, and a workout plan was developed. Now serves as Chairman of companies formed to own and operate the acquired system.

For two gas distribution companies, consulted on strategy development for non-utility subsidiaries.

For a syndicate of U.S. and Canadian commercial banks, evaluated financing and tariff restructuring for a major U.S. interstate pipeline company.

For a major Canadian pipeline company, prepared a study of possible changes in rate design and capacity planning with decontrol of the Canadian gas market. Also researched pipeline capacity allocation problems and their relationship to rate design.

Conducted several assignments in business strategy development for gas distribution companies: market segmentation, cost allocation, structuring tariffs and service contracts, *etc.*

Evaluated several U.S. pipeline companies for possible acquisition by investor groups.

Participated in evaluation of the economic viability of gas-fired cogeneration projects for equity investors and banks. Evaluations included the impact of possible regulatory change.

U.S. and Canadian Gas Industry Regulation

Prepared and presented a seminar on U.S. regulation of oil and gas pipelines for staff members of the Argentina Task Force on Privatization of the Oil Industry.

For a syndicate of U.S. and Canadian commercial banks, prepared an analysis of the influence of certain FERC Gas Tariff issues on pipeline cash flow. Also provided technical support to a "due diligence" investigation for project-type financing.

For a major U.S. pipeline company, prepared an analysis of certain Federal (FERC, Council on Environmental Quality) and State (California) regulatory issues.

For the U.S. Department of Energy, financial institutions, pipelines, and distribution companies, prepared various studies exploring the impacts of regulatory change on segments of the gas industry and on specific firms.

For the U.S. Department of Energy, participated in a study of Canadian gas export policies, and the potential influence on U.S. policies toward gas imports.

Served as Director of the U.S. Federal Energy Regulatory Commission's Alaska Gas Project Office. Evaluated financing and tariff aspects of gas transportation system proposals. Responsible for policy development, managing FERC proceedings, representing the FERC to government and industry, and liaison with Canada.

Served as Director of the U.S. Federal Energy Administration's Office of Energy Project Operations. Evaluated legislative and regulatory impediments to energy project development. Recommended changes and prepared testimony for presentation to committees of the U. S. Congress.

As a Policy Analyst for the Federal Energy Administration, produced research, analysis, writing, and recommendations in oil and gas exploration and production, price control and allocation programs for crude oil and petroleum products, and the international petroleum market.

Other Experience

As a geologist for Mobil Oil Corporation, conducted oil and gas exploration activities in Libya and in Indonesia.

Education

M.S., *cum laude*, Geology and Geophysics, The Massachusetts Institute of Technology
B.S., *cum laude*, Earth Sciences and Chemical Physics (double major), The Massachusetts Institute of Technology

Publications and Conference Presentations

Presented a paper entitled "Can the Conflict Between Maintenance/Replacement Projects and Expansion/Upgrade Projects Be Mitigated by Using a Different Approach to Capital Budgeting?" at a Conference on Gas Company Management Under Limited Budgets, sponsored by the Institute of Gas Technology. October 1998.

Presented a paper entitled "Skills for Effective Competition" at the IGT Technical Business Forum on Enhancing Corporate Performance, sponsored by the Institute of Gas Technology. September 1997.

Panelist on Contract Abandonment at a public seminar entitled "Natural Gas: The Regulatory Crisis Now," sponsored by *The Energy Daily*. July 27, 1987.

Presented a paper on the natural gas pipeline industry to *The Energy Week* Conference, held annually by The First National Bank of Chicago. April 1987.

Presented a paper entitled "New Approaches to Gas Supply Strategies" at a symposium entitled "The Outlook for Gas Distributors in the New Market Place," sponsored by the Institute of Gas Technology. November 1986.

Presented a paper entitled "Diversification Issues in the Natural Gas Industry" to the Williamsburg Conference on the Institute of Public Utilities. December 1984. Later published in *The Impact of Deregulation and Market Forces on Public Utilities: The Future Role of Regulation*, edited by Patrick C. Mann and Harry M. Trebing (MSU Public Utilities Papers, 1985).

Presented a paper entitled "International Competition in the California Gas Market" at the Annual North American Conference of the International Association of Energy Economists. November 1984.

Presented a paper on the Alaska Natural Gas Transportation System entitled "The Intersection of 'Public' and 'Private': Studies in Energy Decision-Making" to a panel at the Annual Meeting of the American Political Science Association. August 1984.

PUBLIC SERVICE COMMISSION
STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Gas Cost Adjustment Tariff Revisions to be Reviewed in its 1996-1997 Annual Reconciliation Adjustment Account.	))))))	Case No. GR-96-450 October 28, 1998 Jefferson City, Mo.

DEPOSITION OF THOMAS SHAW,

a witness, produced, sworn and examined on the 28th day of October, 1998, between the hours of 8:00 a.m. and 6:00 p.m. of that day at the law offices of Brydon, Swearengen & England, 312 East Capitol, in the City of Jefferson, County of Cole, State of Missouri, before

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JEFFERSON CITY, MO 65109
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and Notary Public within and for the State of Missouri, commissioned in Cole County, in the above-entitled cause, on the part of MGE, taken pursuant to agreement.

company totally release an LDC from its contractual obligations without some form of penalty with damages or payment, compensation?

A. Not that I'm aware of.

Q. You've testified that you believe Panhandle's reservation charges to MGE are higher than Williams; is that correct?

A. That's correct.

Q. Okay. Are you aware that in this particular ACA proceeding the Staff has not recommended a disallowance of charges paid by MGE to Panhandle?

A. In my review of the Staff recommendation filed, I don't recall that disallowance being in there.

Q. Well, if the reservation charge is higher, why wouldn't there be a disallowance?

A. Again, I was not asked for input. I did not do any work in GR-96-450 prior to the Staff recommendation being filed.

Q. So you're saying -- let me ask it this way. Are you intending for your testimony to review the Panhandle contract and its rates and charges and to determine whether or not there should be a disallowance on that?

A. No, that's not my expectation.

discretion?

A. Well, I think Staff should look at the information that was known and available to the LDC company in this instance when it's time to execute a new contract and get some type of assurance or level of security that that is the best alternative out there considering all the other options available.

Q. So I guess I'll ask the question again. Would MGE -- is it your testimony that MGE would have been prudent if the Mid-Kansas reservation charge was 10 percent higher than Williams?

A. I cannot answer that question on a percentage basis or anything. I'm trying to tell you it's not the difference in the rates. It's the decision-making process that we're interested in.

MR. MONALDO: Would you read back that answer.

THE REPORTER: "Answer: I cannot answer that question on a percentage basis or anything. I'm trying to tell you it's not the difference in the rates. It's the decision-making process that we're interested in."

BY MR. MONALDO:

Q. Mr. Shaw, in your experience as a staff member of the MPSC, have you ever seen a pipeline

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Gas Cost Adjustment Tariff Revisions to be Reviewed in its 1996-1997 Annual Reconciliation Adjustment Account	)))))	Case No. GR-96-450

DEPOSITION OF DAVID SOMMERER,

a witness, sworn and examined on the 27th day of October, 1998, between the hours of 8:00 a.m. and 6:00 p.m. of that day at the law office of Brydon, Swearengen & England, 312 East Capitol Avenue, in the City of Jefferson, County of Cole, State of Missouri, before

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Notary Public, within and for the State of Missouri, in the above-entitled cause, on the part of the MGE, taken pursuant to agreement.

Resources and the Bishop Group and MGE.

But to answer your -- your question about if Mid-Kansas says no, do I -- am I aware of anything that MGE had that could have stopped the contract, no, I'm not aware of any specific provision. They had no market out clause.

Q. What is the basis for your suspicion that the -- you talked about in your answer that the litigation would have continued? If I understood your answer, that's what you were saying, that you suspected that the litigation --

A. Yes.

Q. -- would continue. What is the factual basis for that suspicion?

A. I think there is a relationship between the settlement that took place in Western District Court and those February 1995 contracts. And I really can't say much more than that, except knowing that there were allegations, general allegations, about what Western Resources had represented to MGE in the sales case, but what Bishop had alleged were MGE's responsibility pursuant to the assignment in the sales case, there was a tie-in with those February 1995 contracts, and it seemed like the contracts that were executed in February 1995 were a result -- it seems a

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Gas Cost Adjustment Tariff Revisions to be Reviewed in its 1996-1997 Annual Reconciliation Adjustment Account	)))))	Case No. GR-96-450

DEPOSITION OF MICHAEL T. LANGSTON,

a witness, sworn and examined on the 27th day of October, 1998, between the hours of 8:00 a.m. and 6:00 p.m. of that day at the law office of Brydon, Swearengen & England, 312 East Capitol Avenue, in the City of Jefferson, County of Cole, State of Missouri, before

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purchase price/purchase arrangement, per se, with Western Resources. I was involved with the review of the gas supply and transportation contracts that were assigned as part of that transaction.

Q. You actually answered the question I should have asked. I was just trying to lay some groundwork to -- you understood the contracts that were being acquired by -- by MGE.

During the period when the negotiations were going on, do you recall having knowledge that the term of the contract, the Mid-Kansas I contract, expired around the year 2009?

A. Yes.

Q. Do you have any knowledge that would lead you to believe that Mid-Kansas/Riverside in renegotiating Mid-Kansas I would simply allow MGE to no longer have any obligations under the Mid-Kansas I agreement/Riverside agreement?

A. I don't think under a reasonable business position that Mid-Kansas/Riverside would take that position any more than Williams Gas Pipeline Central or Panhandle Eastern Pipeline Company or any supplier would.

Q. Okay. Now, under -- let me go back to -- let me clear up the record.

Comparison of Features - Mid-Kansas I / Mid-Kansas II

Feature	Mid-Kansas I	Mid-Kansas II
Term	Until October 31, 2009	Until the Riverside I Gas Transportation Service Agreement is approved, or October 31, 2009, whichever is earlier.
Price	Actual weighted average cost of gas, plus applicable gathering, transportation and related charges.	105 percent of Transok index price, plus specified transportation charges: $15.5860 per MMBtu of MDQ per month, plus $0.0695 per MMBtu transported, subject to adjustment for outcomes of pending rate proceedings in Kansas and at FERC. Transportation rates increase by 2 percent every 3 years.
Quantity	Up to 46,332 Mcf/day. Annual quantity 4.015 Bcf. Monthly takes proportionate to Buyer's sales.	Up to 46,332 MMBtu/day, less any amount contracted by a customer which bypasses Buyer's system.
Take-or-pay obligation	None, but Buyer agrees to buy annual quantity, subject to adjustment only for change in Buyer's total sales volumes.	None.
Notice for delivery volume changes	8 hours	(same)
Transok Lease	MGE had no such option.	MGE acquired the option to take assignment of Transok Lease.

CASE NO. GR - 96 - 450
Monthly Load Factor

	Apr-96	May-96	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97
Williams Natural Gas												
Average Daily Volumes	135,738	53,974	36,105	30,951	35,518	53,204	102,126	254,793	309,979	410,658	275,727	170,634
Annual Maximum Daily Volumes	248,845	248,845	248,845	248,845	248,845	248,845	248,845	748,565	748,565	748,565	748,565	748,565
Load Factor	0.545	0.217	0.145	0.124	0.143	0.214	0.410	0.340	0.414	0.549	0.368	0.228
Panhandle Eastern Pipeline Company												
Average Daily Volumes	7,340	2,000	1,793	1,723	2,423	2,769	3,452	21,484	24,213	24,222	24,808	20,547
Annual Maximum Daily Volumes	17,881	17,881	17,881	17,881	17,881	17,881	17,881	30,426	30,426	30,426	30,426	30,426
Load Factor	0.410	0.112	0.100	0.096	0.136	0.155	0.193	0.706	0.796	0.796	0.815	0.675
Kansas Pipeline Operating Company												
Average Daily Volumes	15,913	12,008	9,943	9,572	4,878	-	4,627	25,983	45,889	46,259	45,849	22,698
Annual Maximum Daily Volumes	46,332	46,332	46,332	46,332	46,332	46,332	46,332	46,332	46,332	46,332	46,332	46,332
Load Factor	0.343	0.259	0.215	0.207	0.105	-	0.100	0.561	0.990	0.998	0.990	0.490

Source: Figure 25 of MGE Supplier Meeting Booklet

CASE NO. GR - 96 - 450
GAS INDEX PRICES

Supplier	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97
Williams Natural Gas (WNG)	2.18	2.14	1.67	1.68	2.50	3.68	4.30	2.81	1.63	1.70	1.92	2.11
Panhandle Eastern Pipeline Company - Mainline (PEPL)	2.18	2.13	1.67	1.69	2.51	3.61	4.10	2.77	1.64	1.71	1.95	2.13
Transok - Non-Fuser (TOK)	2.01	1.92	1.48	1.49	2.20	2.93	3.65	2.48	1.41	1.52	1.79	1.92
WNG/PEPL Avg. Vs. TOK Difference	0.170	0.215	0.190	0.195	0.305	0.715	0.550	0.310	0.225	0.185	0.145	0.200

Source: Inside F.E.R.C.'s Gas Market Report and Gas Daily Price Guide (First of Month Posted Prices)

MISSOURI GAS ENERGY

Supplier Meeting

March 10 - 11, 1994

MGE MISSOURI GAS ENERGY

Supplier Meeting

March 10 - 11, 1994

Kansas City Airport Marriott Hotel
Kansas City, Missouri
816 / 464-2200

Thursday, March 10, 1994 — **Reception**
5:00 P.M. to 7:00 P.M.

Friday, March 11, 1994 — **Gas Supplier Meeting**
10:30 A.M. to 3:00 P.M. — *Lunch will be provided*

Dress: Casual
Agenda to follow

RSVP by February 25, 1994
512 / 370-8276

Please advise if attending Reception, Gas Supplier Meeting or both.

MISSOURI GAS ENERGY

Supplier Meeting

March 10 - 11, 1994

AGENDA

10:30 - 10:45 A.M.	Welcoming Remarks *Eugene Dubay* *Executive Vice President, COO*
10:45 - 11:00 A.M.	Strategic Position *Michael T. Langston* *Vice President, Gas Supply*

11:00 - 12:00 NOON	Southern Union Company Overview
	Richard L. Herweck
	Gas Supply Manager
	
	Southern Union Gas
	Pat Anderson
	Gas Supply Representative
	
	Missouri Gas Energy - Supply Requirements
	• Request for Proposal
	  • Summer Storage Injection Gas
	  • Winter Peaking Supplies
	  • Capacity Release
	Richard L. Herweck
	Donna Hadley
	Gas Supply Representative

12:00 - 1:00 P.M.	Lunch
1:00 - 2:30 P.M.	Discussion
2:30 - 3:00 P.M.	Staff Introduction
3:00 P.M.	Adjournment

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SOUTHERN UNION COMPANY
CHECKLIST

REGULATED PUBLIC UTILITY

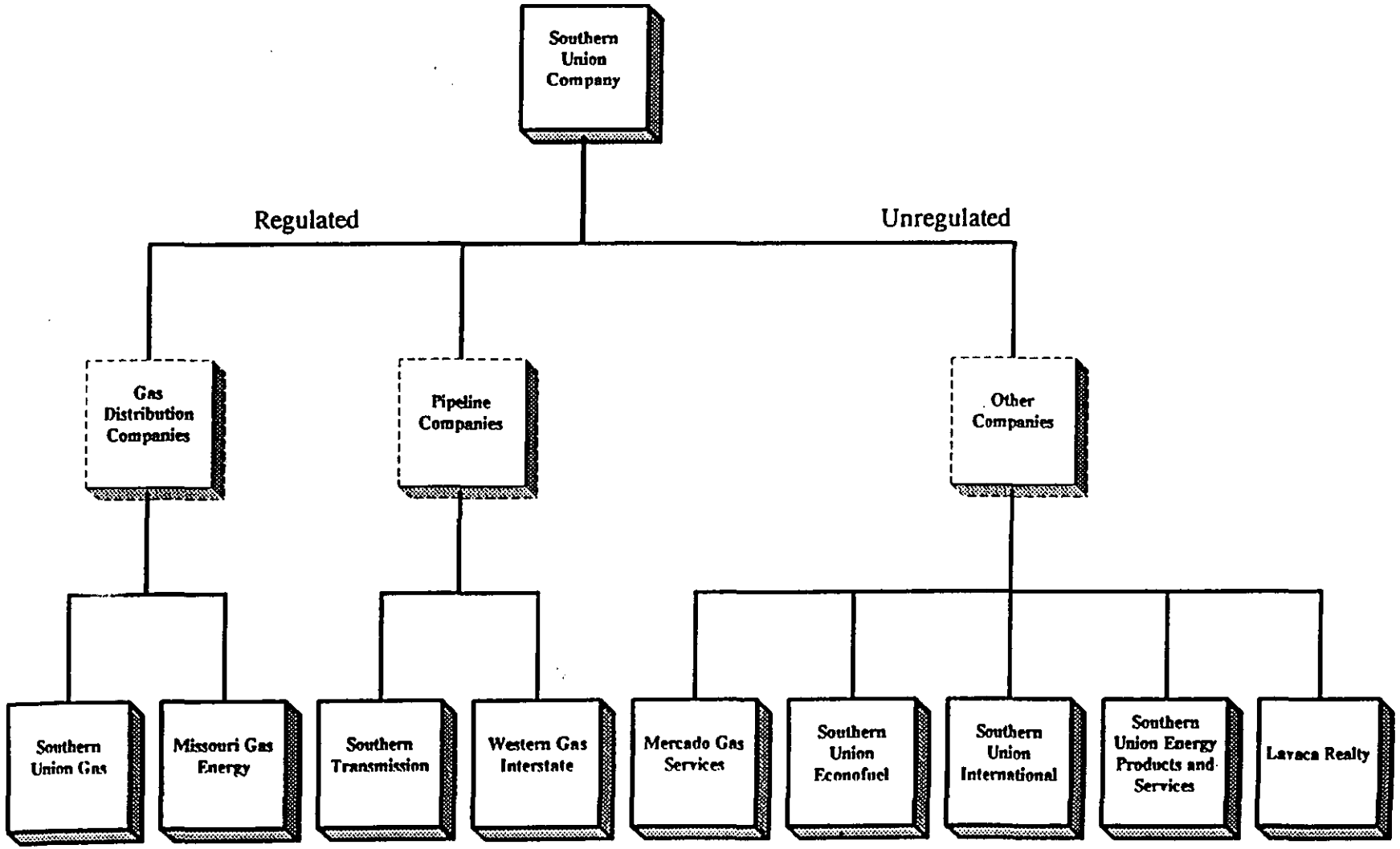
COMMITTED TO PROFITABLE GROWTH

REINVESTS EARNINGS, NO CASH DIVIDEND

14TH LARGEST NATURAL GAS DISTRIBUTOR

935,000 CUSTOMERS IN TEXAS, OKLAHOMA, AND MISSOURI

SOUTHERN UNION CORPORATE STRUCTURE

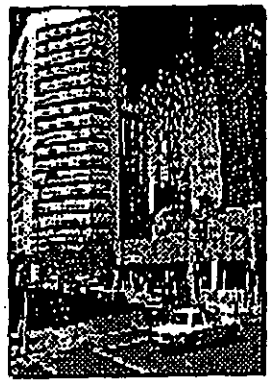


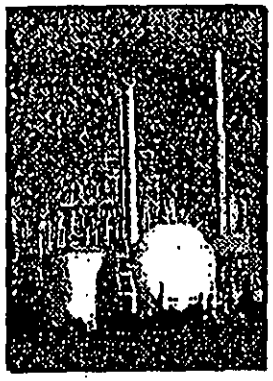
SOUTHERN UNION COMPANY
PROFILE

Regulated	Product or Service
Southern Union Gas Co.	Local Distribution Company, Texas and Oklahoma
Missouri Gas Energy	Local Distribution Company, Missouri (Missouri Public Service Commission)
Western Gas Interstate Co.	Natural gas transmission (Interstate and International)
Southern Transmission Co.	Natural gas transmission
Mercado Gas Service Co.	Gas marketing to end users and gas suppliers
Unregulated	
Southern Union Econofuel Co.	Markets, sells, and dispenses natural gas as a vehicular fuel
Natural Gas Technology Centers L.L.P. (50% Partner)	Automobile conversions to use natural gas fuel Emissions testing laboratory
Southern Union Energy Products & Service Co.	Natural gas industrial applications, equipment, design, consultation, sales, and service
Southern Union International Inc.	Natural gas sales and service outside the United States borders


Southern Union Company
MGE MISSOURI GAS ENERGY
COLORADO
KANSAS
MISSOURI
ST. JOSEPH
SMITHVILLE
FAYETTE
KANSAS CITY, MO
WARRENSBURG
HARRISONVILLE
STOCKTON
CARTHAGE
OZARK
JOPLIN
MONETT
NEOSHO
SOUTHWEST CITY
BOISE CITY
HOOKER
TYRONE
OPTIMA
FORGAN
GOODWELL
BEAVER
STRATFORD
TEXHOMA
CACTUS
NEW MEXICO
BORGER
SKELLYTOWN
OKLAHOMA
ARKANSAS
FARWELL
PANHANDLE REGION
JACKSBORO
GRAHAM
BRYSON
WEATHERFORD
CRAFORD
HUDSON OAKS
BRECKENRIDGE
WILLOW PARK
MINERAL WELLS
ALEDO
MILLSAP
ANDREWS
ANTHONY
VINTON
DELL CITY
EL PASO
HORIZON CITY
SOCORRO
CLINT
WINK
WICKETT
PYOTE
THORNTONVILLE
MONAHANS
PECOS
BARSTOW
CRANE
MCCAMEY
TEXAS
CENTRAL TEXAS REGION
GULF COAST REGION
LOUISIANA
WEST TEXAS REGION
WEST LAKE HILLS
AUSTIN CORPORATE OFFICE
ROLLINGWOOD
SUNSET VALLEY
LOCKHART
LULING
GONZALES
SHINER
NIXON
YOAKUM
CUERO
HOME
DEVERS
PORT NECHES
PORT ARTHUR
NEDERLAND
RAYWOOD
HULL
GROVES
SABINE PASS
BAYOU VISTA
GALVESTON
JAMAICA BEACH
MEXICO
EAGLE PASS
RIO GRANDE VALLEY REGION
MCALLEN
HARLINGEN
BROWNSVILLE
Southern Union Gas

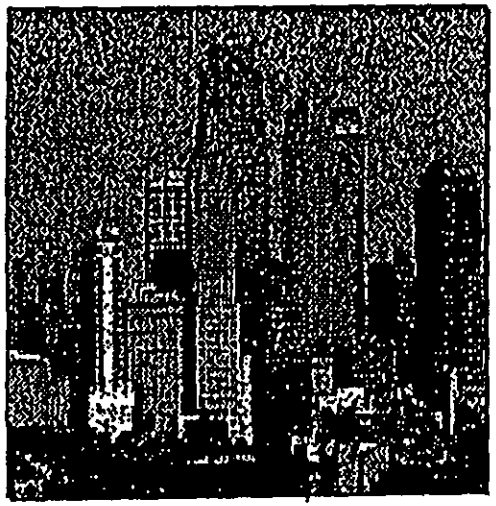
SOUTHERN UNION GAS COMPANY SERVICE AREAS

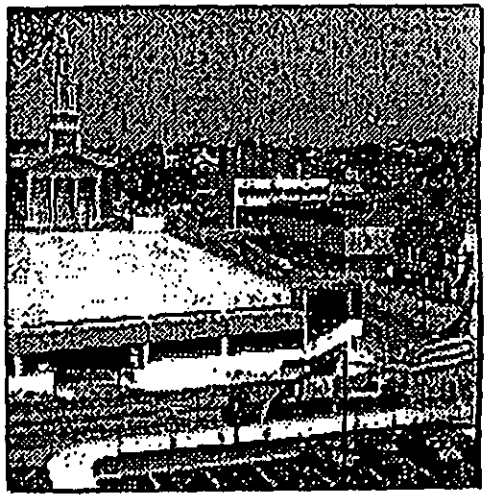




REGION	WEST TEXAS	CENTRAL TEXAS	GULF COAST	RIO GRANDE VALLEY	PANHANDLE & NORTH TEXAS
POPULATION	620,000	533,000	322,000	254,000	77,000
GAS CUSTOMERS	166,000	150,000	52,250	74,250	33,000
ANNUAL VOLUME	17 Bcf	12 Bcf	4 Bcf	3.6 Bcf	5.3 Bcf
PIPELINES	EL PASO NATURAL GAS DELHI	VALERO TEJAS	HOUSTON PIPE LINE MIDCON TEXAS MITCHELL ENERGY	VALERO	EL PASO NATURAL GAS NORTHERN NATURAL WESTERN GAS INTERSTATE PANHANDLE EASTERN PIPE LINE COLORADO INTERSTATE GAS SOUTHWESTERN GAS PIPELINE TRIDENT NGL, INC.

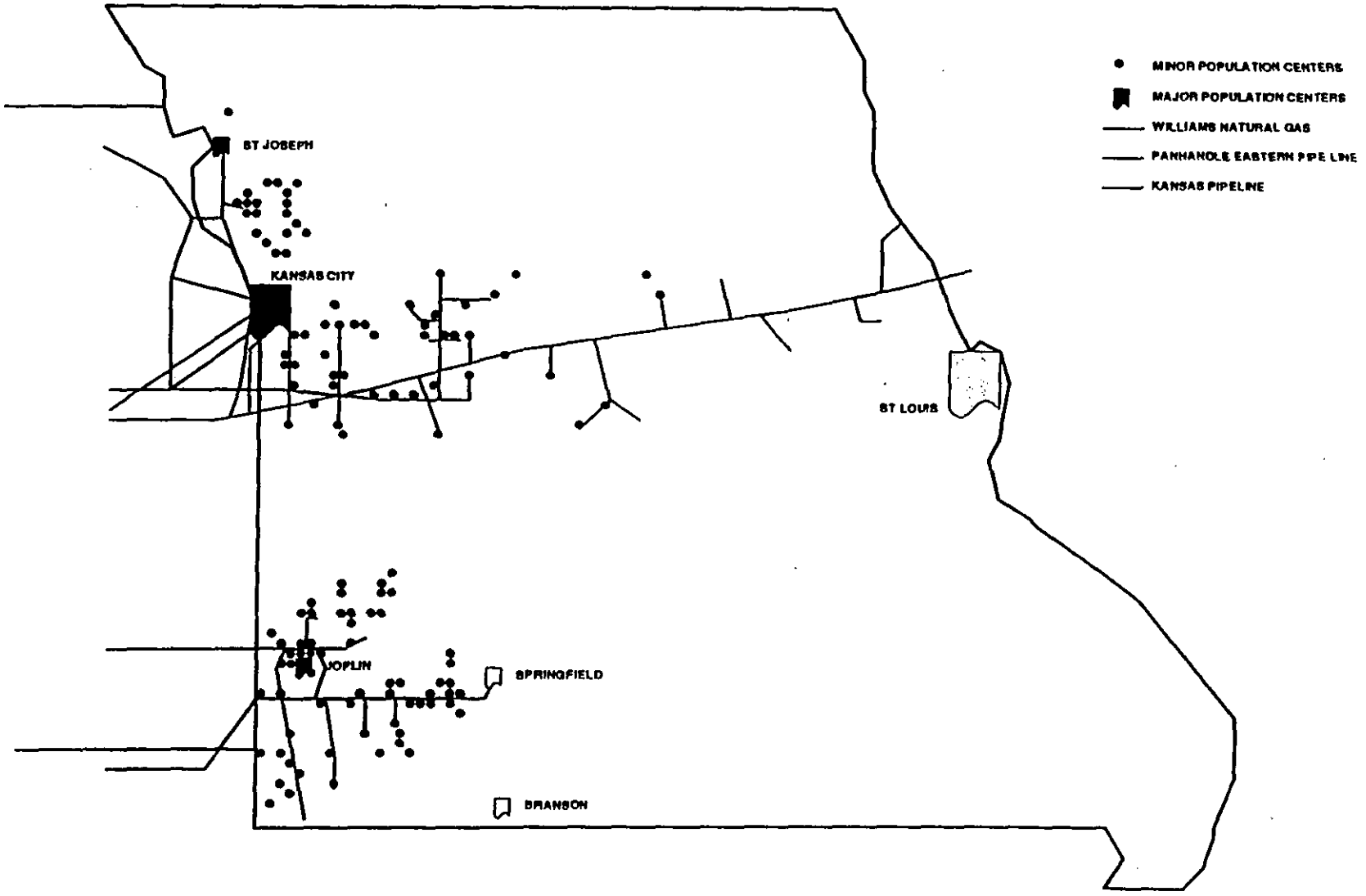
MISSOURI GAS ENERGY SERVICE AREAS





REGION	KANSAS CITY, MO. AREA	JOPLIN, MO. AREA	ST. JOSEPH, MO. AREA
POPULATION	1,460,000	190,000	77,000
GAS CUSTOMERS	360,000	70,000	30,000
PIPELINES	WILLIAMS NATURAL GAS PANHANDLE EASTERN PIPE LINE COMPANY KANSAS PIPELINE OPERATING COMPANY	WILLIAMS NATURAL GAS	WILLIAMS NATURAL GAS

POPULATION CENTERS AND MAJOR PIPELINES (MISSOURI)



MGE MISSOURI GAS ENERGY

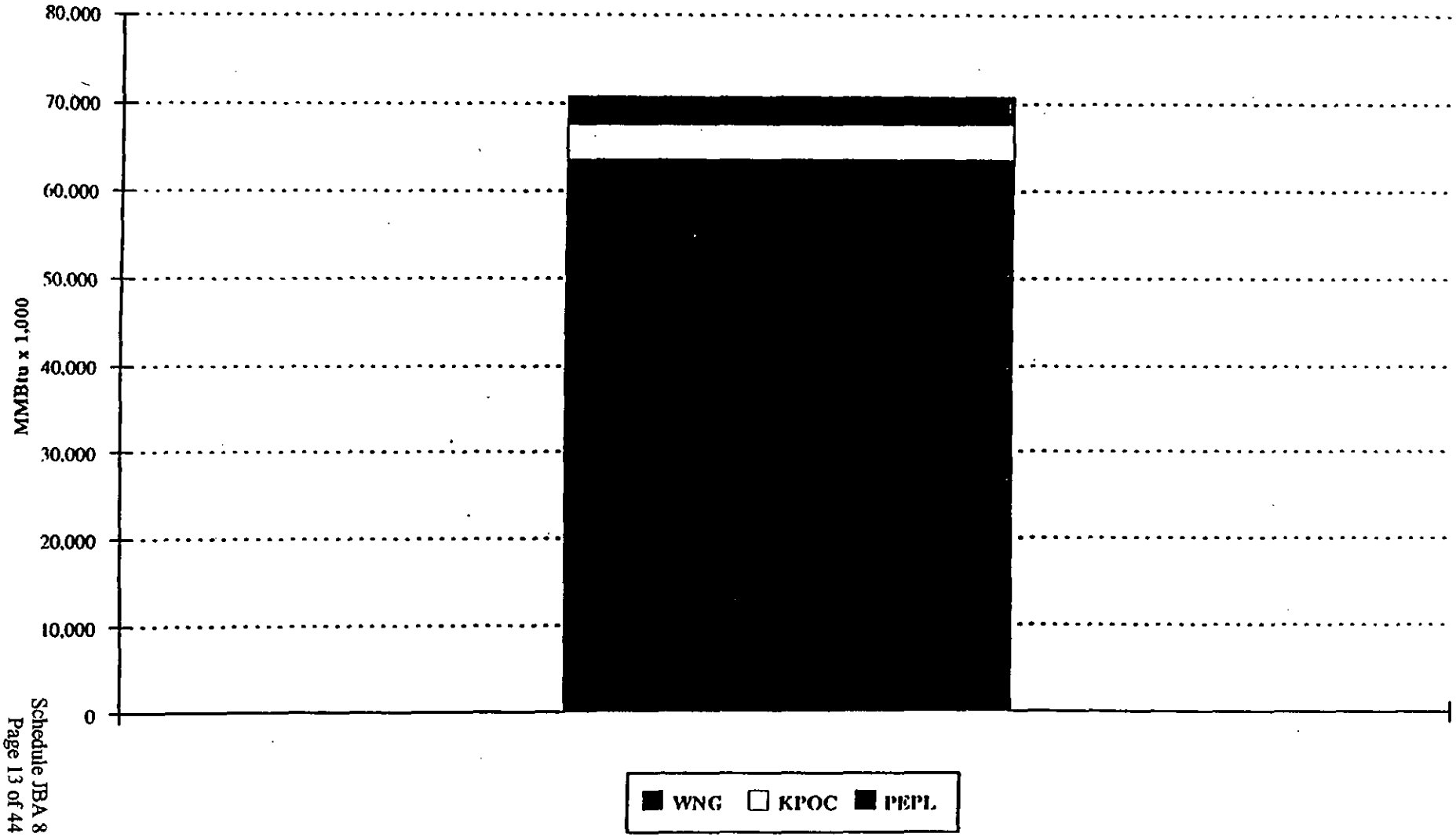
SOUTHERN UNION COMPANY
MISSOURI ACQUISITION SUMMARY

July, 1993, Southern Union agreed to purchase Western Resources, Inc.'s Missouri natural gas operations for approximately $360 million

December 29, 1993, Missouri Public Service commission approved the acquisition subject to certain stipulations and assignment of contracts

February 1, 1994, Southern Union began operating Missouri Gas Energy as a division with management of the new company in Kansas City, Missouri

PURCHASE VOLUMES BY PIPELINE
1993



See Table 1

MGE MISSOURI GAS ENERGY

Table 1

PURCHASE VOLUMES BY PIPELINE

Bcf

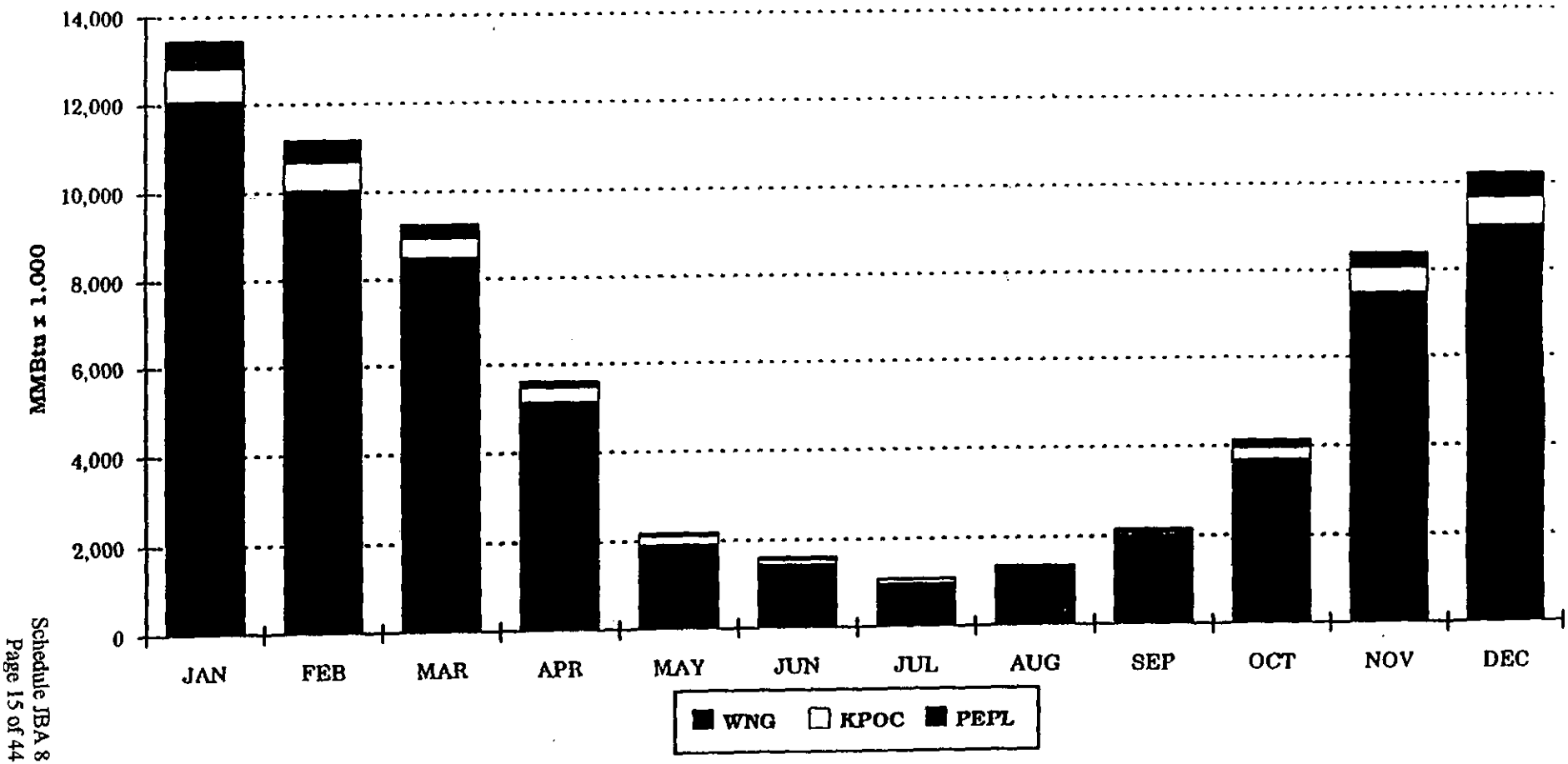
YEAR	TOTAL WNG	TOTAL KPOC	TOTAL PEPL	TOTAL MGE
1992	53.8	4.5	3.6	61.8
1993	63.7	3.9	3.2	70.8
1994	63.6	4.0	3.3	70.9 *
1995	65.2	4.0	3.4	72.6 *
1996	66.8	4.0	3.6	74.4 *

* Projected

MGE MISSOURI GAS ENERGY

MONTHLY VOLUMES BY PIPELINE

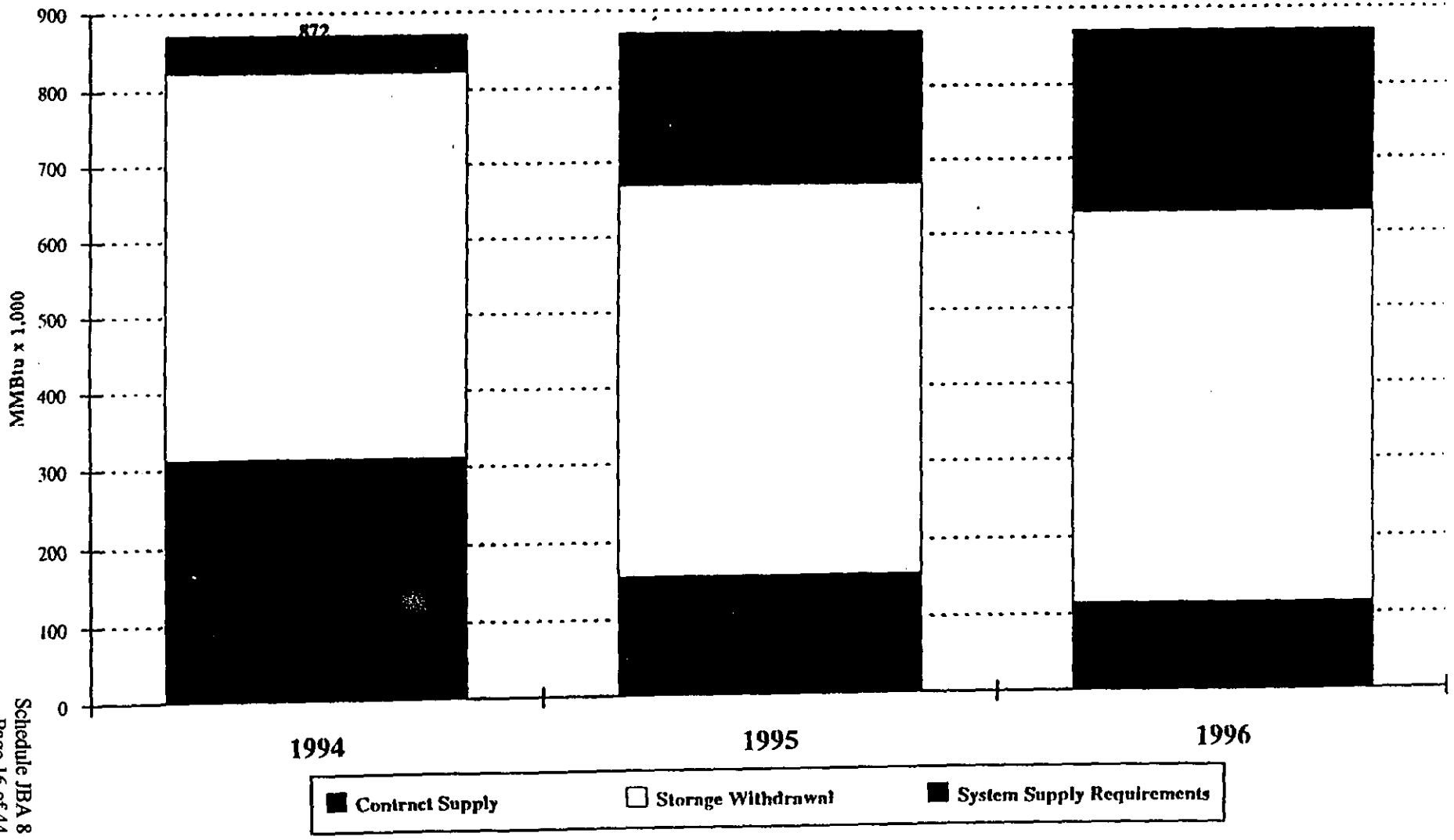
1993



MGE MISSOURI GAS ENERGY

HISTORICAL PEAK DAY

CONTRACT SUPPLY COMPARED TO HISTORICAL PEAK



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See Table 2

MGE MISSOURI GAS ENERGY

Table 2

HISTORICAL PEAK DAY

CONTRACT SUPPLY COMPARED TO HISTORICAL PEAK

MMBtu x 1,000

	1994	1995	1996
Historical Peak Day	872	872	872
Contract Supply	311	156	115
Storage Withdrawal	512	512	512
Supply Requirements	49	204	245

MGE MISSOURI GAS ENERGY

Table 3

MINIMUM AND MAXIMUM DAILY VOLUMES

MMBtu

KANSAS PIPELINE OPERATING COMPANY

	Jan-93	Feb-93	Mar-93	Apr-93	May-93	Jun-93	Jul-93	Aug-93	Sep-93	Oct-93	Nov-93	Dec-93
MAX	26,589	27,222	17,911	16,081	8,390	4,669	3,408	726	5,675	9,638	25,294	20,301
MIN	20,474	17,319	5,021	4,021	3,996	1,791	1,569	146	762	4,090	12,668	14,590
AVG	23,966	21,457	13,571	10,515	6,096	3,473	3,027	484	2,285	7,793	18,537	19,829

WILLIAMS NATURAL GAS

	Jan-93	Feb-93	Mar-93	Apr-93	May-93	Jun-93	Jul-93	Aug-93	Sep-93	Oct-93	Nov-93	Dec-93
MAX	710,747	477,517	519,381	394,377	198,260	115,584	99,679	109,024	145,403	287,854	457,841	686,133
MIN	251,631	185,244	99,832	97,701	20,600	16,078	10,419	13,951	22,424	85,388	170,184	100,313
AVG	389,202	346,433	274,037	171,402	61,800	48,234	31,258	41,854	67,271	119,484	249,332	291,230

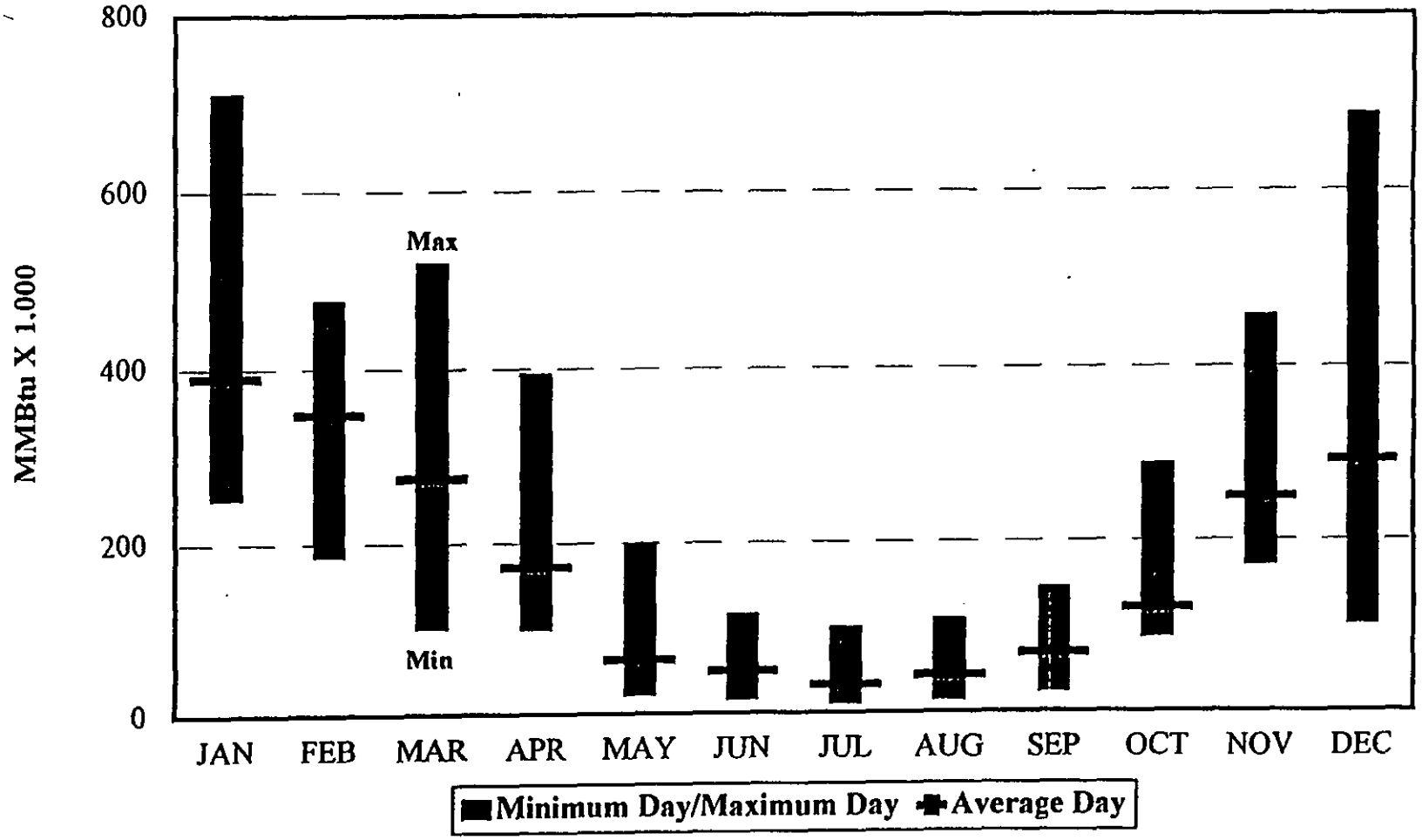
PANHANDLE EASTERN PIPE LINE

	Jan-93	Feb-93	Mar-93	Apr-93	May-93	Jun-93	Jul-93	Aug-93	Sep-93	Oct-93	Nov-93	Dec-93
MAX	26,159	22,856	18,356	13,365	13,062	10,639	5,918	5,772	10,245	13,380	18,818	25,195
MIN	21,243	15,730	9,962	5,158	2,365	2,120	1,016	1,434	2,981	3,960	11,089	17,335
AVG	21,385	17,916	11,655	5,952	2,893	2,415	1,284	1,840	3,403	6,785	12,974	19,227

Total Throughput minimum and maximum less estimated Third Party Transportation

MGE MISSOURI GAS ENERGY

MINIMUM AND MAXIMUM DAILY VOLUMES
WILLIAMS NATURAL GAS COMPANY
1993

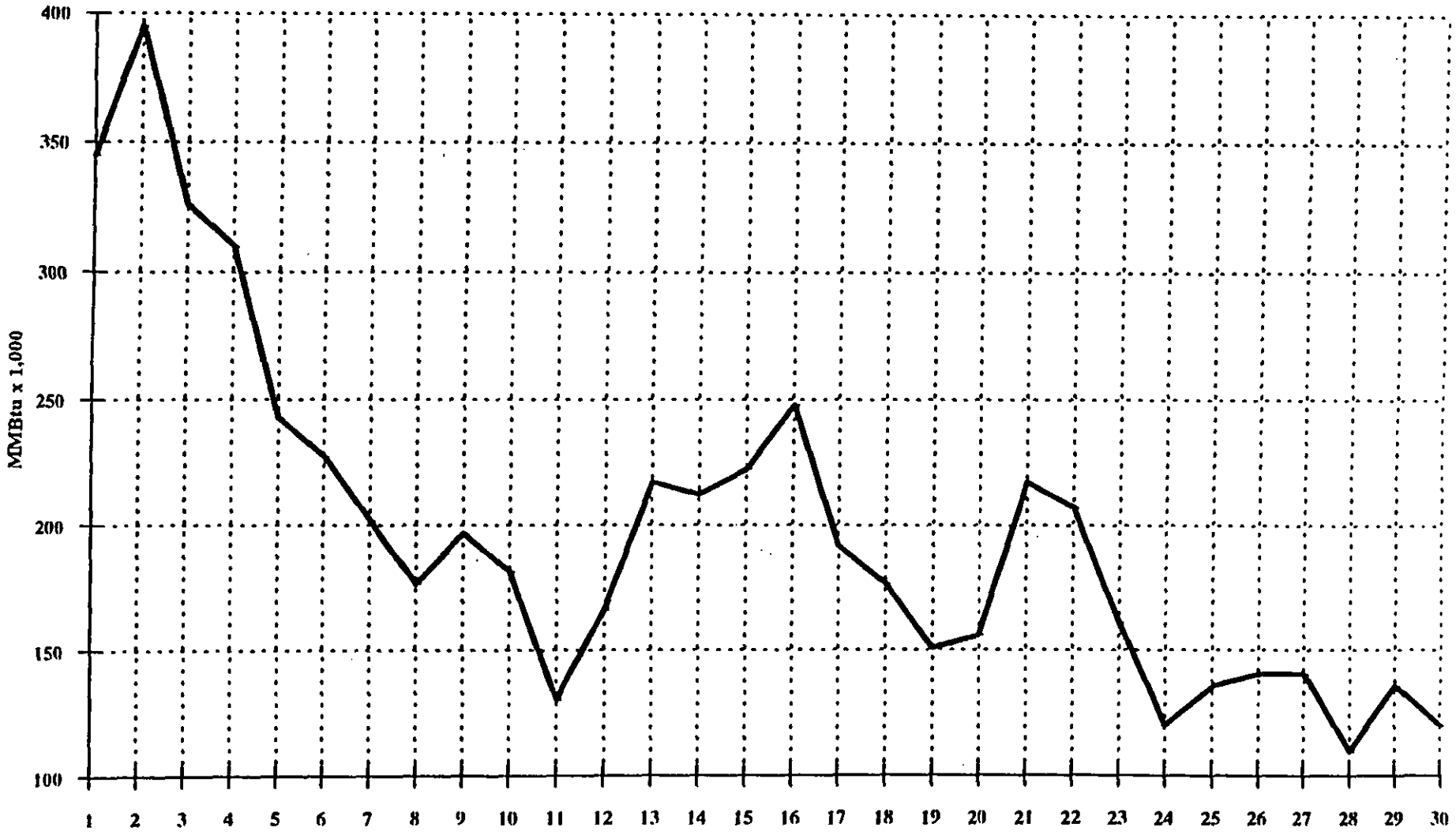


See Table 3

MGE MISSOURI GAS ENERGY

DAILY VOLUME SWINGS

APRIL 1993



MGE MISSOURI GAS ENERGY

Table 4

PROJECTED VOLUMES
1994
MMBtu x 1,000

	Jan-94	Feb-94	Mar-94	Apr-94	May-94	Jun-94
Customer Demand	13,745	10,503	8,114	5,158	2,919	1,686
Storage Injection	0	0	0	932	3,805	3,488
System Supply Requirement	13,745	10,503	8,114	6,090	6,724	5,174
Monthly Contract Quantity	9,641	8,708	9,331	4,230	3,379	3,270
Storage Withdrawal	4,252	3,749	2,130	0	0	0
Available Supply	13,893	12,457	11,461	4,230	3,379	3,270
System Supply Requirement	13,745	10,503	8,114	6,090	6,724	5,174
Available Supply	13,893	12,457	11,461	5,340	4,681	4,530
New Contract Requirement	na	na	na	1,860	3,345	1,904
Peak Day	625	573	467	364	397	193

	Jul-94	Aug-94	Sep-94	Oct-94	Nov-94	Dec-94
Customer Demand	1,842	1,684	2,130	3,791	7,148	12,230
Storage Injection	3,362	2,270	1,298	1,281	0	0
System Supply Requirement	5,204	3,954	3,428	5,072	7,148	12,230
Monthly Contract Quantity	3,348	3,379	3,270	3,441	4,680	4,836
Storage Withdrawal	0	0	0	0	2,452	3,853
Available Supply	3,348	3,379	3,270	3,441	7,132	8,689
System Supply Requirement	5,204	3,954	3,428	5,072	7,148	12,230
Available Supply	4,681	4,681	4,530	4,681	7,132	8,689
New Contract Requirement	1,856	575	158	1,631	16	3,541
Peak Day	59	55	92	188	323	543

Table 5

PROJECTED VOLUMES
1995

MMBtu x 1,000

	Jan-95	Feb-95	Mar-95	Apr-95	May-95	Jun-95
Customer Demand	13,248	10,928	8,267	5,472	2,996	1,916
Storage Injection	0	0	0	1,028	3,734	3,486
System Supply Requirement	13,248	10,928	8,267	6,500	6,730	5,402
Monthly Contract Quantity	4,836	4,368	4,836	2,730	1,643	1,560
Storage Withdrawal	4,234	3,783	2,115	0	0	0
Available Supply	9,070	8,151	6,951	2,730	1,643	1,560
System Supply Requirement	13,248	10,928	8,267	6,500	6,730	5,402
Available Supply	9,070	8,151	6,951	2,730	1,643	1,560
New Contract Requirement	4,178	2,777	1,316	3,770	5,087	3,842
Peak Day	644	559	475	377	404	202

	Jul-95	Aug-95	Sep-95	Oct-95	Nov-95	Dec-95
Customer Demand	1781	1743	2153	3729	7899	12555
Storage Injection	3360	2257	1290	1281	0	0
System Supply Requirement	5,141	4,000	3,443	5,010	7,899	12,555
Monthly Contract Quantity	1612	1612	1320	1457	3450	3565
Storage Withdrawal	0	0	0	0	2452	3853
Available Supply	1,612	1,612	1,320	1,457	5,902	7,418
System Supply Requirement	5,141	4,000	3,443	5,010	7,899	12,555
Available Supply	1,612	1,612	1,320	1,457	5,902	7,418
New Contract Requirement	3,529	2,388	2,123	3,553	1,997	5,137
Peak Day	58	56	93	187	350	555

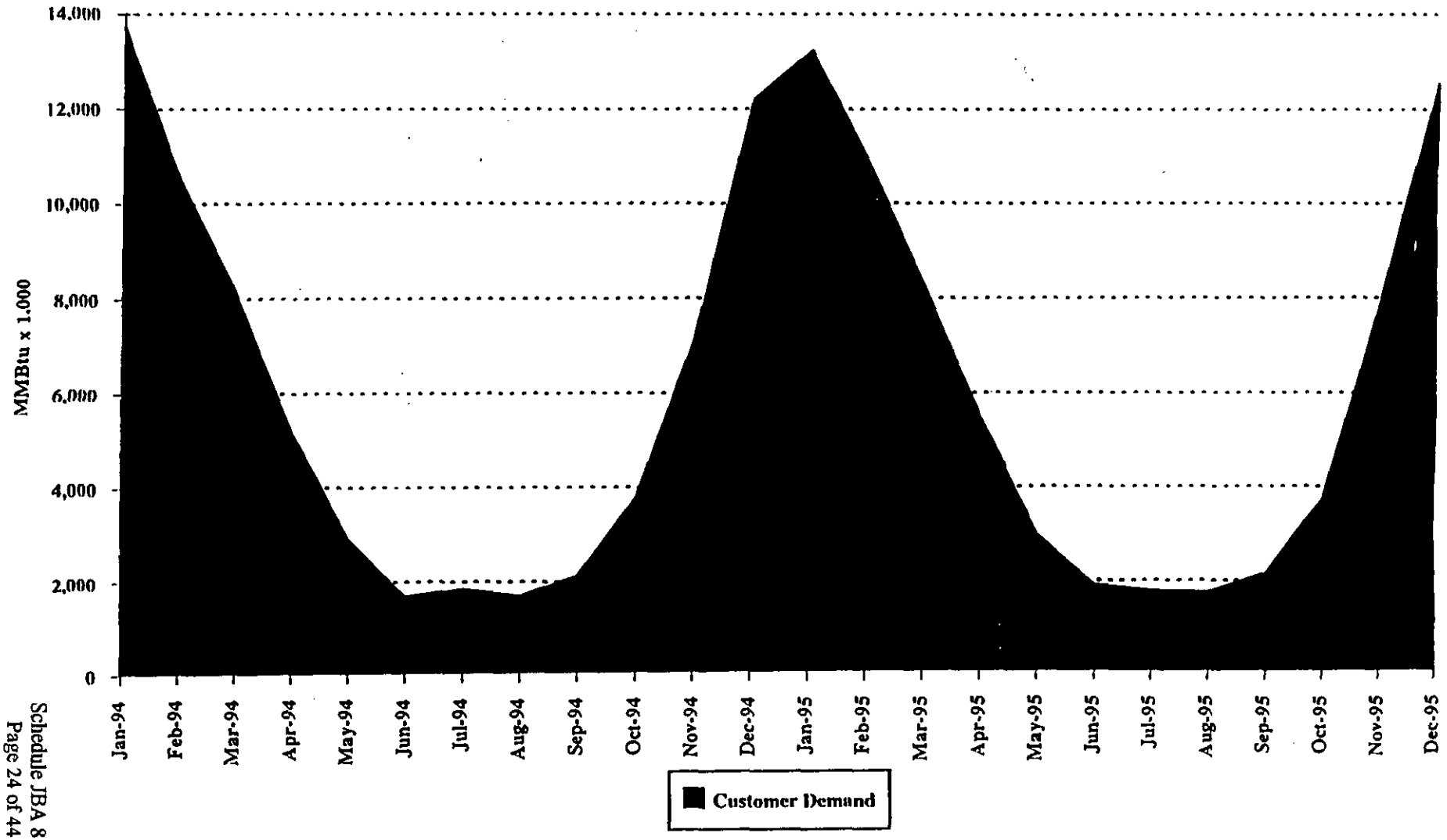
Table 6

PROJECTED VOLUMES
1994 - 1998

MMBtu x 1,000

	1994	1995	1996	1997	1998
Customer Demand	70,950	72,687	74,869	77,104	79,394
Storage Injection	16,436	16,436	16,436	16,436	16,436
System Supply Requirement	87,386	89,123	91,305	93,540	95,830
Monthly Contract Quantity	61,513	32,989	27,200	27,085	25,438
Storage Withdrawal	16,436	16,437	16,437	16,437	16,437
Available Supply	77,949	49,426	43,637	43,522	41,875
System Supply Requirement	87,386	89,123	91,305	93,540	95,830
Available Supply	77,949	49,426	43,637	43,522	41,875
New Contract Requirement	14,886	39,697	47,668	50,018	53,955

PROJECTED CUSTOMER DEMAND
1994 - 1995



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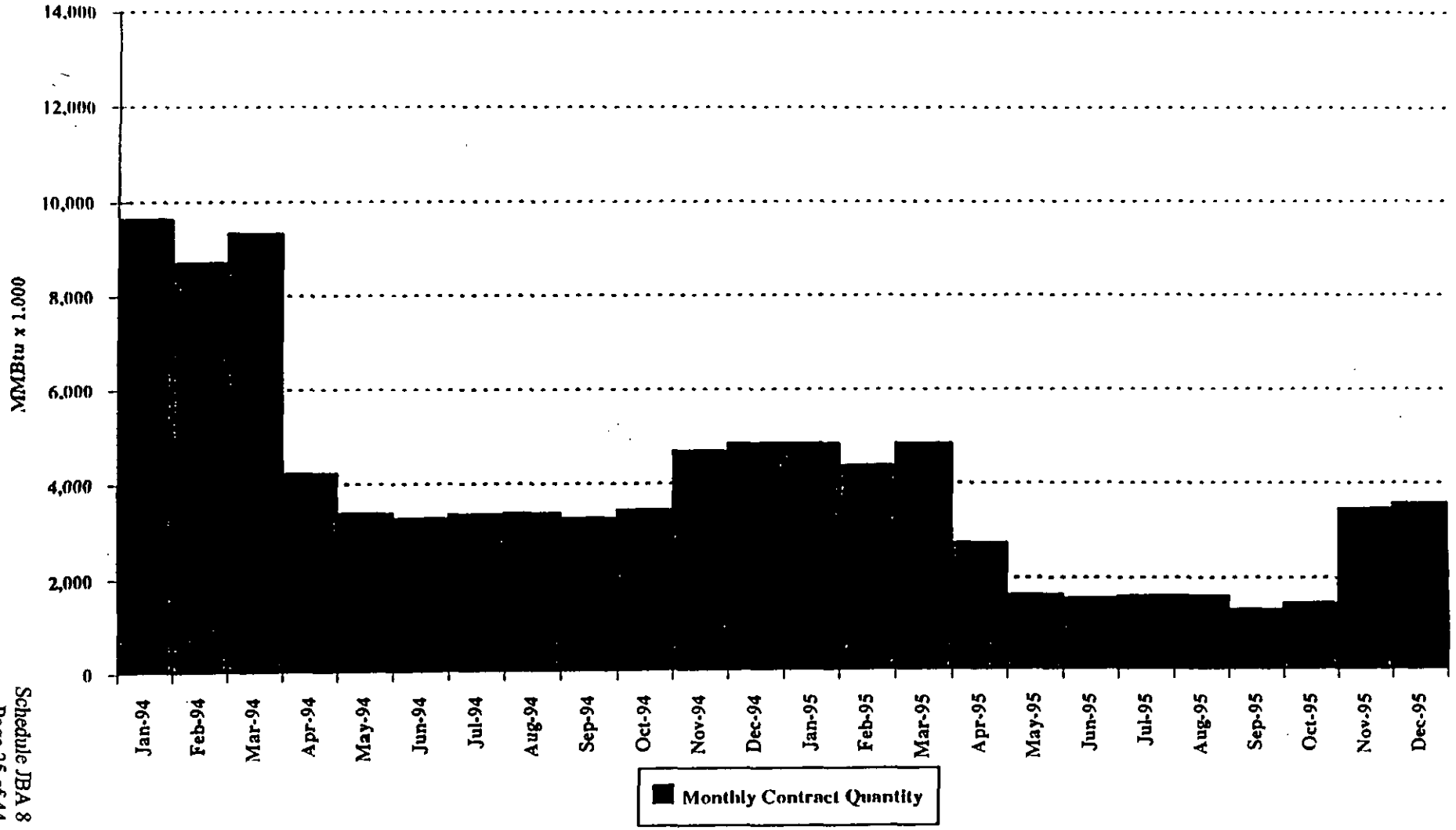
See Table 4 and 5

MGE MISSOURI GAS ENERGY

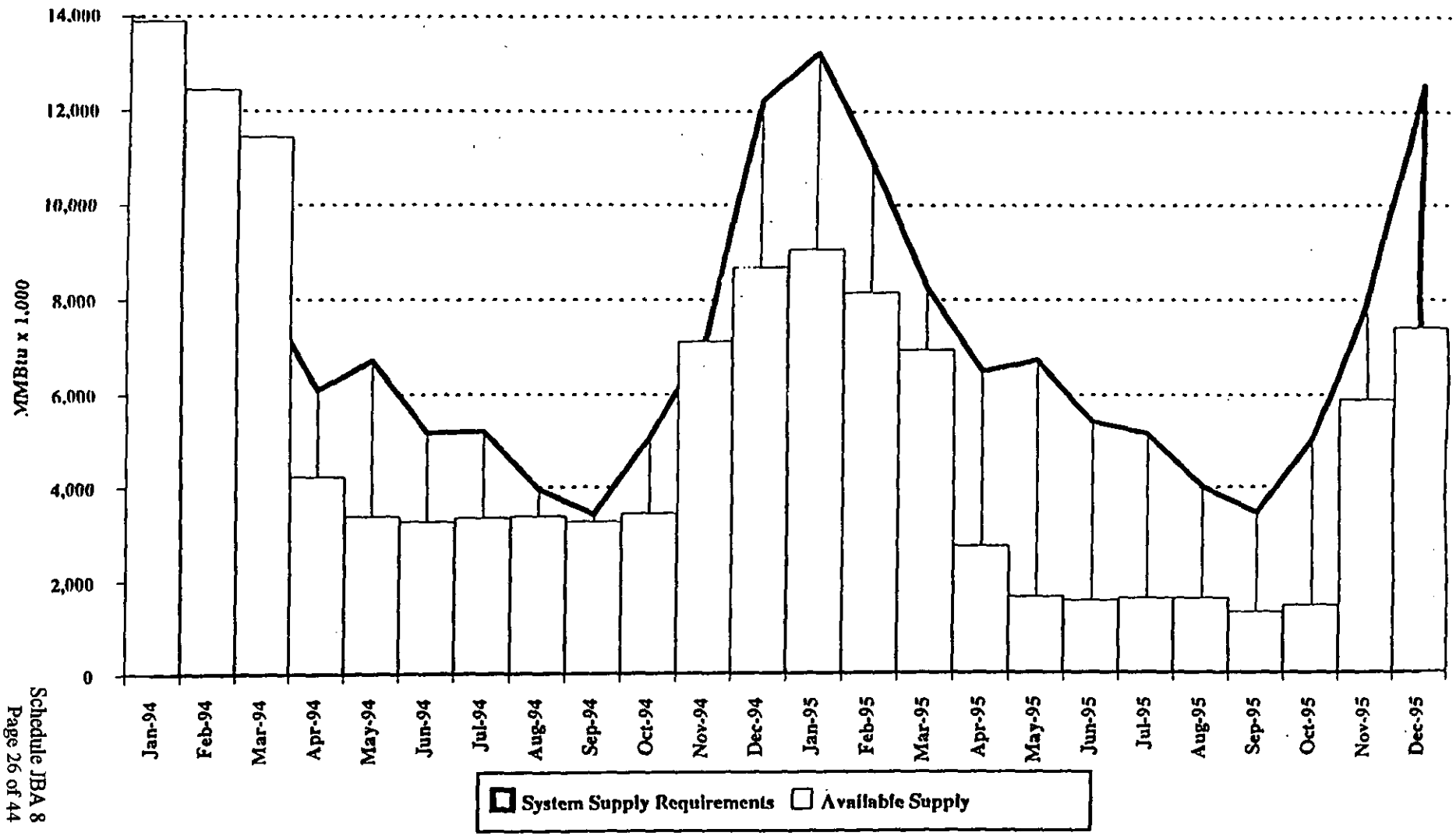
PROJECTED CONTRACT SUPPLY
1994 - 1995



See Table 4 and 5

MGE MISSOURI GAS ENERGY

PROJECTED VOLUMES
1994 - 1995



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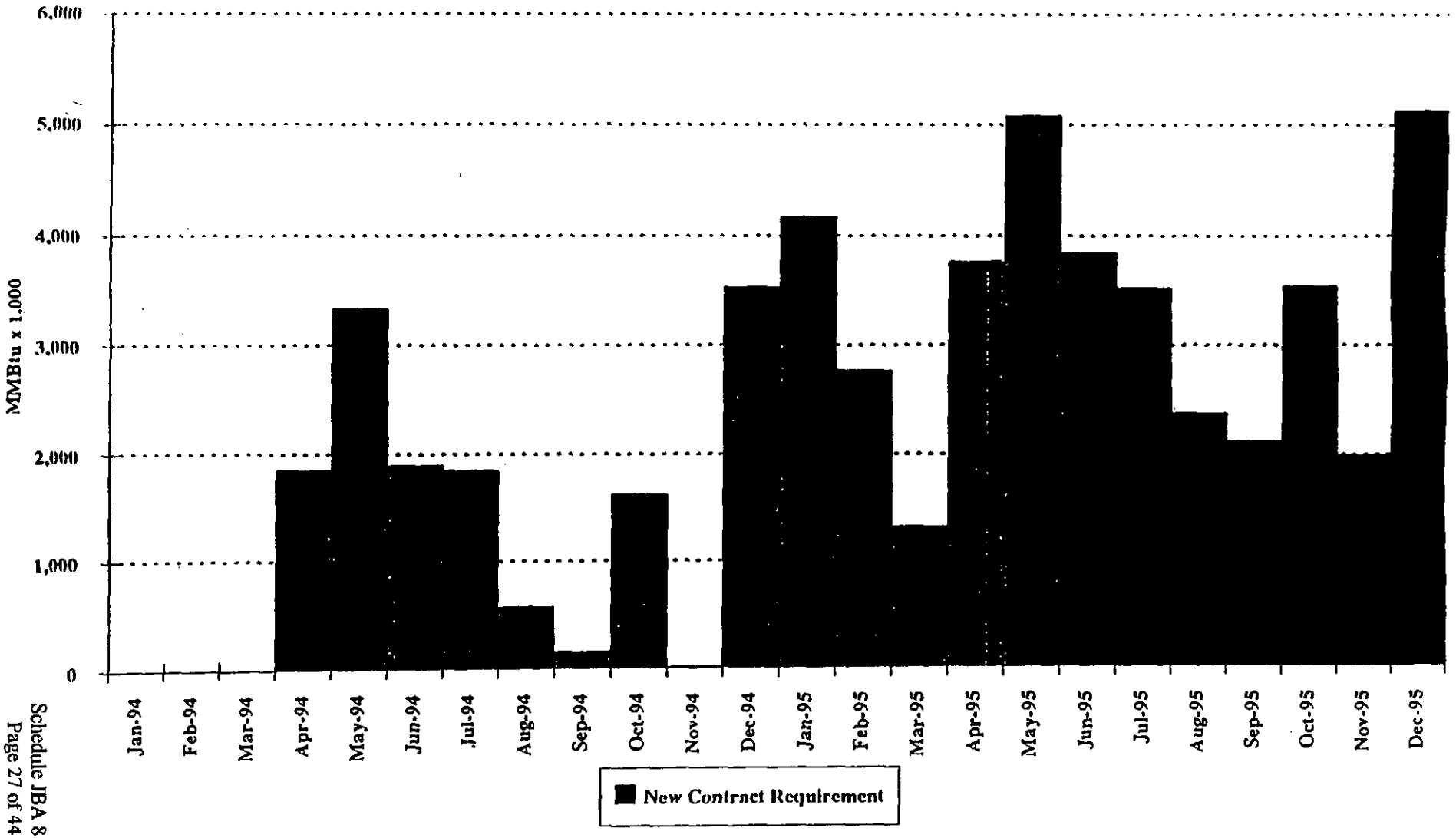
See Table 4 and 5

MGE MISSOURI GAS ENERGY

NEW CONTRACT REQUIREMENT
1994 - 1995



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See Table 4 and 5

MGE MISSOURI GAS ENERGY

REQUEST FOR PROPOSAL

		Package #1	Package #2
1.	Term	April 1, 1994 - September 30, 1994	November 1, 1994 - December 31, 1998
2.	Price	Fixed or Indexed	Indexed
3.	Delivery Obligation	Firm / Variable	Firm / Variable
4.	Firm Contract Quantity	6,735 MMBtu / Season	24,800 MMBtu / Year
5.	Variable / Spot Quantity	2,963 MMBtu / Season	8,207 MMBtu / Year
6.	Points of Delivery	Master Receipt Points on Williams or Panhandle for both Packages	
7.	Alternate Proposals	The balance of New Contract Requirement will be purchased either as Variable volumes under new contracts or on the spot market	

MISSOURI GAS ENERGY

SUPPLY PACKAGE #1
STORAGE FILL PURCHASE
PROJECTED VOLUMES
MMBtu x 1,000

Month/ Year	Contract Requirement	Contract Quantity	Variable Spot
Jan-94			
Feb-94			
Mar-94			
Apr-94	1,860	900	960
May-94	3,345	2,325	1,020
Jun-94	1,904	1,500	404
Jul-94	1,856	1,550	306
Aug-94	575	310	265
Sep-94	158	150	8
Oct-94			
Nov-94			
Dec-94			

MISSOURI GAS ENERGY

SUPPLY PACKAGE #2
TERM SUPPLY CONTRACT
PROJECTED VOLUMES
MMBtu x 1,000

Month/ Year	Contract Requirement	Contract Quantity	Variable Spot
Dec-94	3,541	2,945	596
Jan-95	4,178	3,100	1,078
Feb-95	2,777	2,660	117
Mar-95	1,316	930	386
Apr-95	3,770	3,000	770
May-95	5,087	4,185	902
Jun-95	3,842	3,000	842
Jul-95	3,529	2,635	894
Aug-95	2,388	2,015	373
Sep-95	2,123	1,650	473
Oct-95	3,553	2,015	1,538
Nov-95	1,997	1,650	347
Dec-95	5,137	4,650	487
1996	47,669		
1997	50,019		
1998	53,956		

CONTRACT CAPACITY COMPARED TO HISTORICAL PEAK

MMBtu x 1,000

Kansas Pipeline Operating Company		
Flowing Capacity	46,332	
Storage Withdrawal	0	
Total	46,332	
Panhandle Eastern Pipe Line		
Flowing Capacity	17,881	
Storage Withdrawal	12,717	
Total	30,717	30 598
Williams Natural Gas		
Flowing Capacity	298,815	
Storage Withdrawal	499,750	
Total	798,565	
TOTAL CAPACITY	875,495	
HISTORICAL PEAK DAY	872,000	

MGE MISSOURI GAS ENERGY

CAPACITY RELEASE AGREEMENT

- Competitive Market Rates
- Recallable during Peak Day or Injection Cycle
- Capacity will be posted on Electronic Bulletin Board for bids
- Pre-Arranged Releases will be considered
- Contract in place prior to releasing Capacity

Table A

1993 CUSTOMERS and SALES VOLUMES (MMcf)

RESIDENTIAL	400,544	41,856
COMMERCIAL	57,828	21,115
INDUSTRIAL	251	1,202
TRANSPORTATION	239	26,381
TOTAL	458,862	90,554

MGE MISSOURI GAS ENERGY

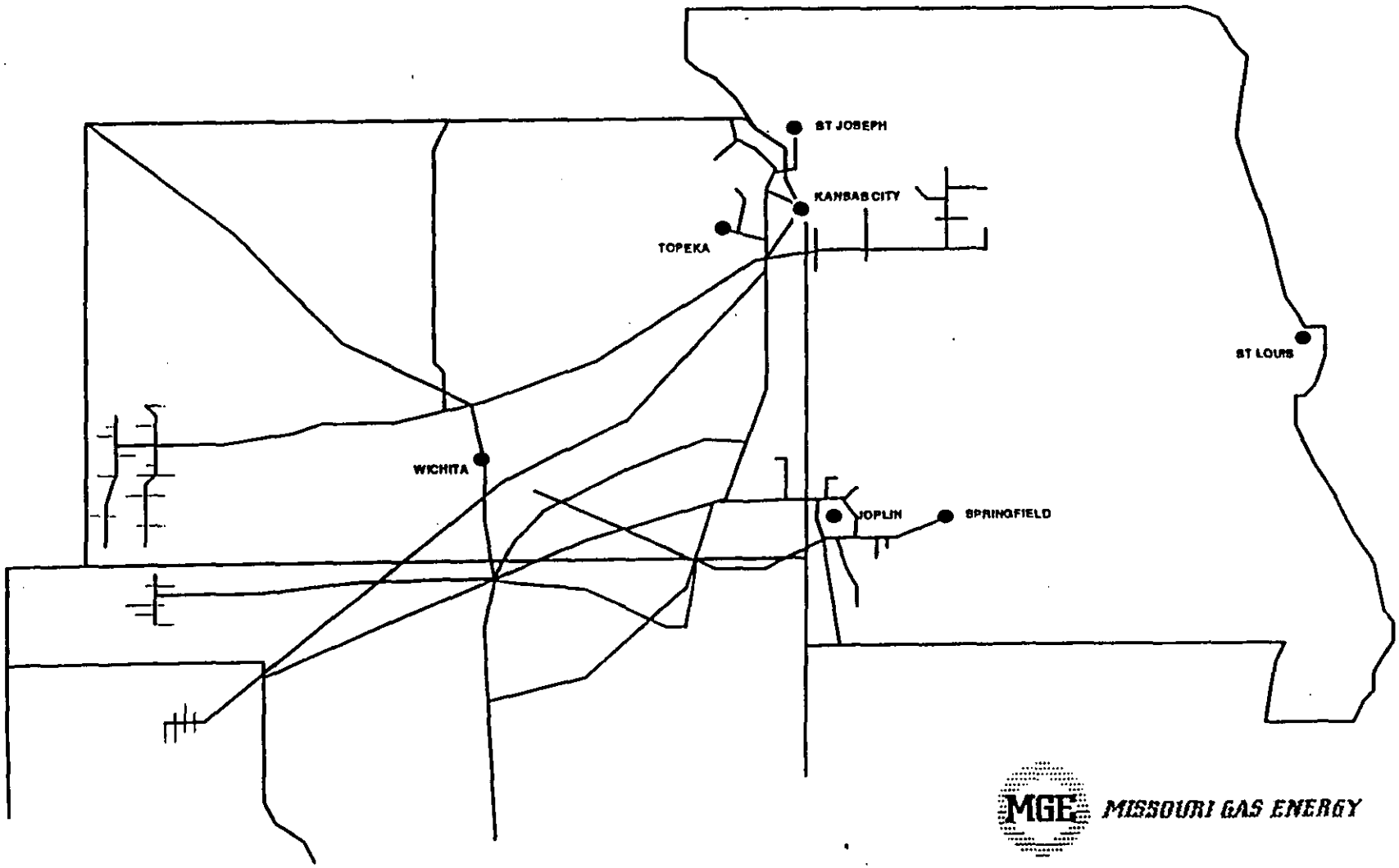
Table B

1994 PROJECTED PURCHASE VOLUMES BY PIPELINE

	WILLIAMS NATURAL GAS	PANHANDLE EASTERN PIPE LINE	KANSAS PIPELINE OPERATING COMPANY
PURCHASE FOR RESALE			
VOLUME	63.6 Bcf	3.3 Bcf	4.0 Bcf
PERCENT	89.7%	4.6%	5.7%
CUSTOMER TRANSPORTATION			
VOLUME	26 Bcf	0	4.0 Bcf
PERCENT	83.0%	0	17%
TOTAL			
VOLUME	89.6 Bcf	3.3 Bcf	9.7 Bcf
PERCENT	87.0%	3.0%	10.0%

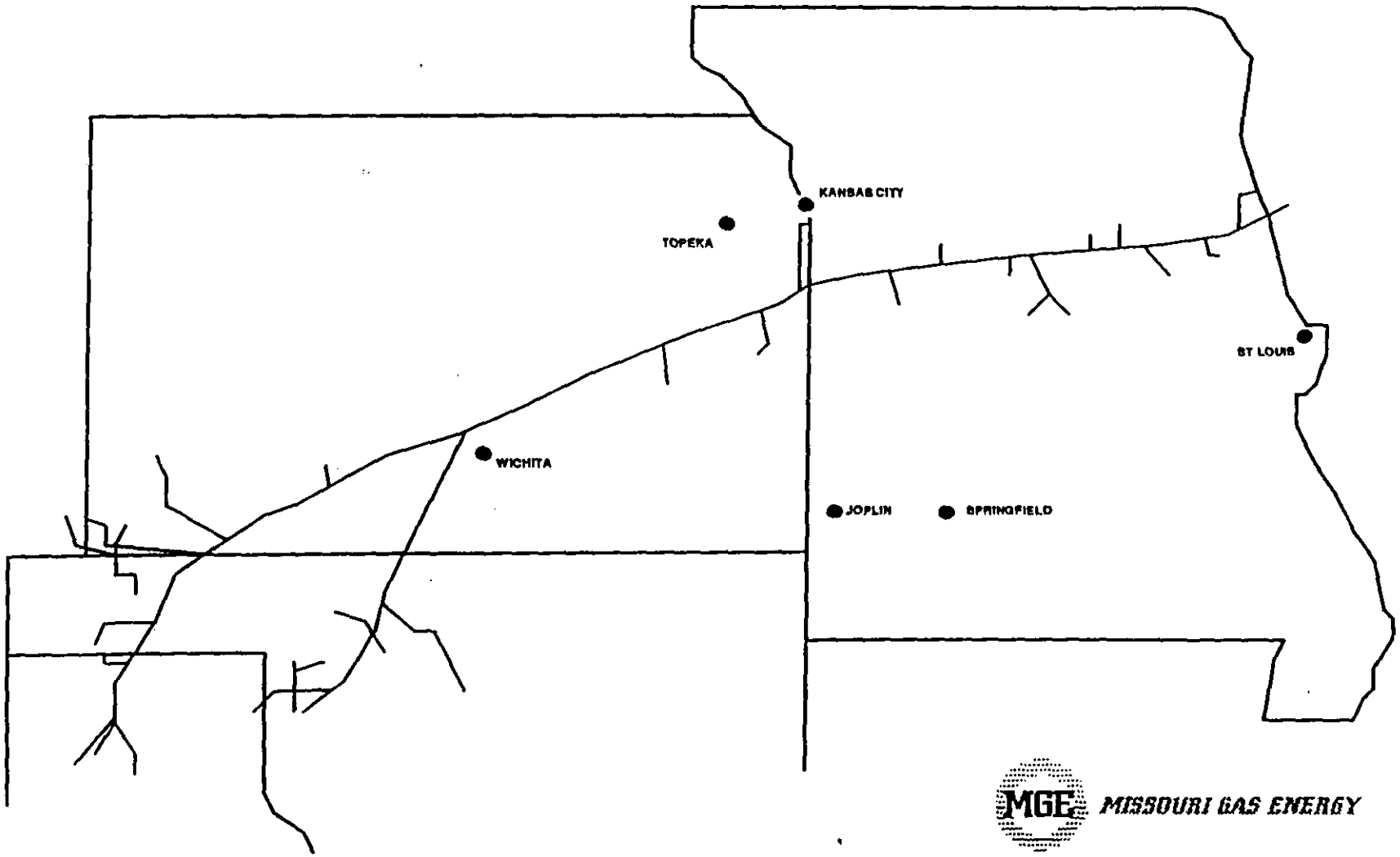
MGE MISSOURI GAS ENERGY

WILLIAMS NATURAL GAS COMPANY
INTERSTATE SYSTEM



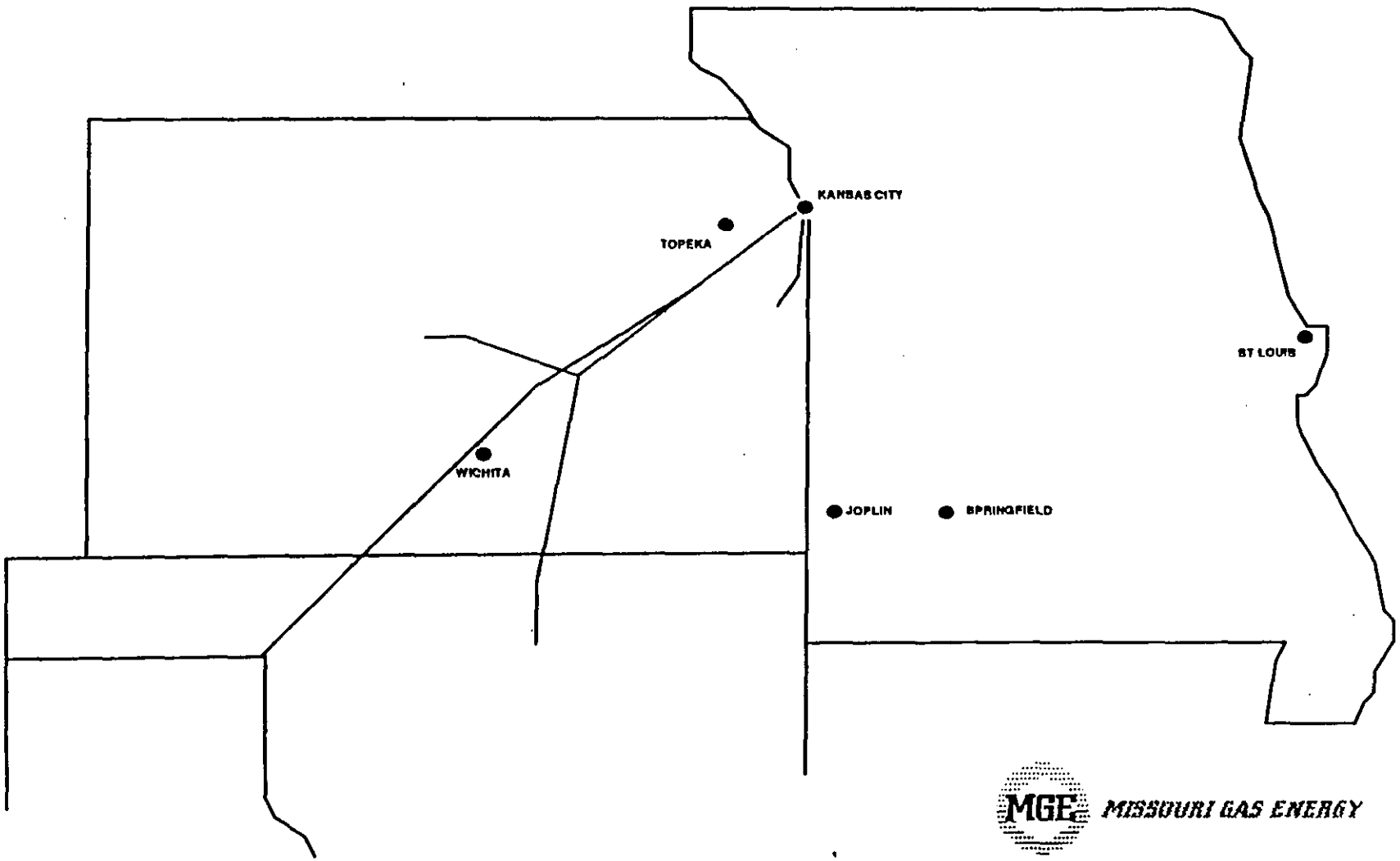
MGE MISSOURI GAS ENERGY

PANHANDLE EASTERN PIPE LINE COMPANY
INTERSTATE SYSTEM



MGE MISSOURI GAS ENERGY

KANSAS PIPELINE OPERATING COMPANY
INTRASTATE SYSTEM



MGE MISSOURI GAS ENERGY

GAS SUPPLY / GAS MEASUREMENT CONTACTS

PERSONNEL LIST

Mike Langston	V.P. Gas Supply	(512) 370-8277
Janet Jeanes	Administrative Assistant	(512) 370-8276
Richard Herweck	Manager, Gas Supply	(512) 370-8278
Pat Anderson	Gas Supply Representative	(512) 370-8280
Donna Hadley	Gas Supply Representative	(512) 370-8661
Pam Leigh	Contract Administrator	(512) 370-8279
David Twichell	Gas Dispatch Supervisor	(512) 370-8281
Jon Steffens	Gas Supply Analyst (Dispatching)	(512) 370-8283
Verlenne Monroe	Gas Supply Analyst (Forecasting)	(512) 370-8282
Rick Tompkins	Manager, Gas Measurement	(512) 370-8270
Wally Nix	Senior Measurement Specialist	(512) 370-8272
Val Henry	Telemetry Coordinator	(512) 370-8273
Naomi Perales	Secretary/Measurement Analyst	(512) 370-8271
Gas Supply Facsimile Number		(512) 476-4966
Gas Measurement Facsimile Number		(512) 370-8259
24 Hour Emergency Dispatch Number		(512) 476-5035

AREAS OF RESPONSIBILITY

GAS SUPPLY

Regulatory Issues: Richard Herweck

Supply Issues: Donna Hadley; Pat Anderson

Contract Negotiations: Richard Herweck

Contract Administration: Pam Leigh

Contract Balances: Pam Leigh

Contract Compliance: Pam Leigh

GAS CONTROL/GAS DISPATCH: 24 Hour Emergency Line - (512) 476-5035

Pipeline Nominations: Jon Steffens

Pipeline Balancing: Jon Steffens

Volume Control: Jon Steffens

Volume Reporting: Jon Steffens

Curtailment Issues: David Twichell

FORECASTING/INTEGRATED RESOURCE PLANNING

Supply Forecasting: Verlenne Monroe

Demand Forecasting: Verlenne Monroe

Peak Day Forecasting: Verlenne Monroe

MISSOURI GAS ENERGY

Supplier Meeting

March 10 - 11, 1994

ATTENDEES

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Missouri Public Service Commission
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301 West High Street
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Carmen Morrissey
Missouri Public Service Commission
H.S. Truman State Office Building
301 West High Street
Jefferson City, MO 65102

Kenneth J. Rademan
Missouri Public Service Commission
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Missouri Public Service Commission
Truman State Office Building
301 West High Street
Jefferson City, MO 65102

Mike Wallace
Missouri Public Service Commission
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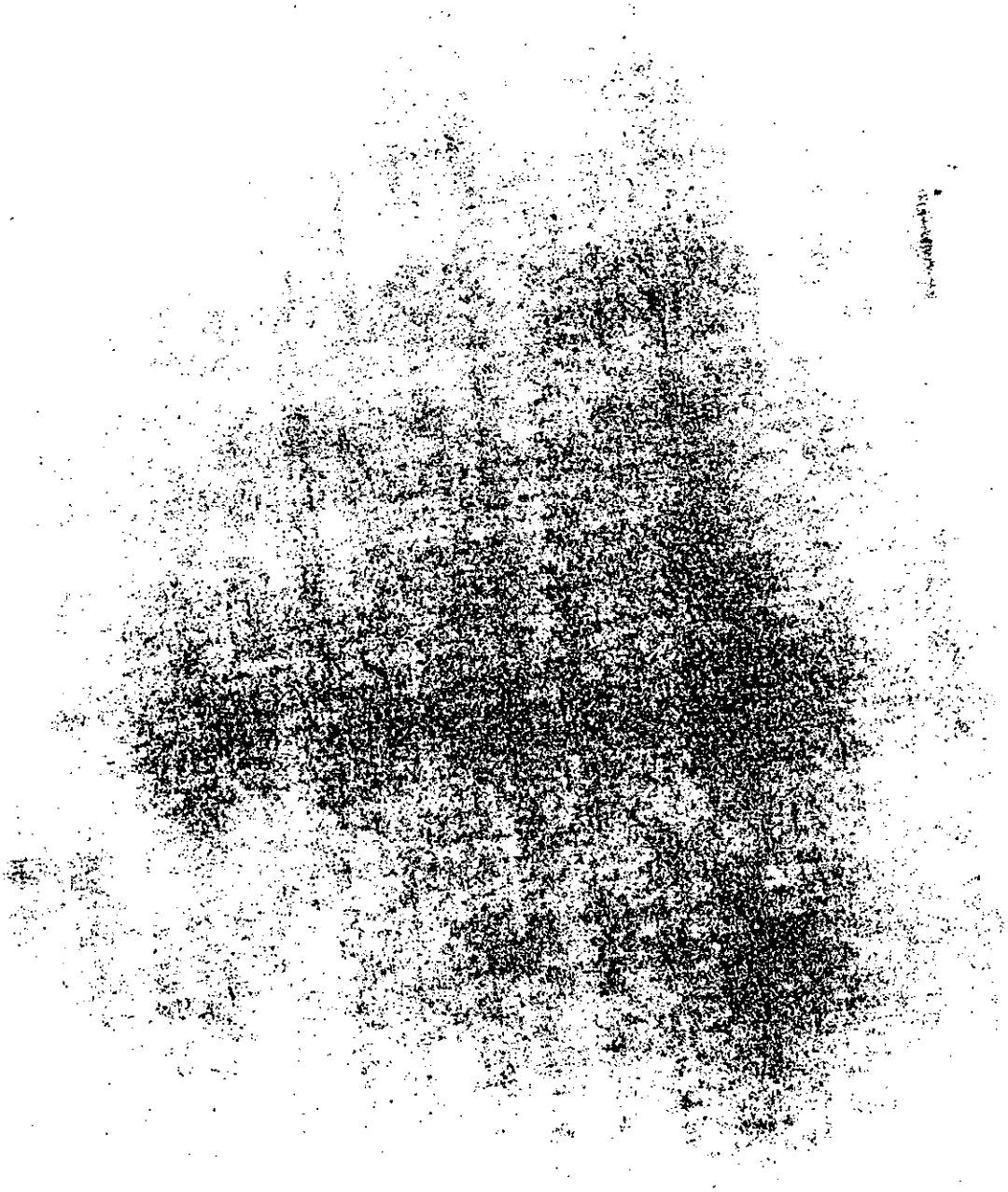

MGE MISSOURI GAS ENERGY

SUPPLIER MEETING

August 1997

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CONTENTS

Figure 1

SOUTHERN UNION COMPANY

- Regulated Public Utility
- Management and insiders own 49% common stock
- The Company issues an annual stock dividend of 5%
- Common stock appreciated 262% during the five year period ending March 31, 1997
- The nations' 15th largest natural gas distributor
- 968,000 Customers in Texas and Missouri

Figure 2

SOUTHERN UNION CORPORATE STRUCTURE

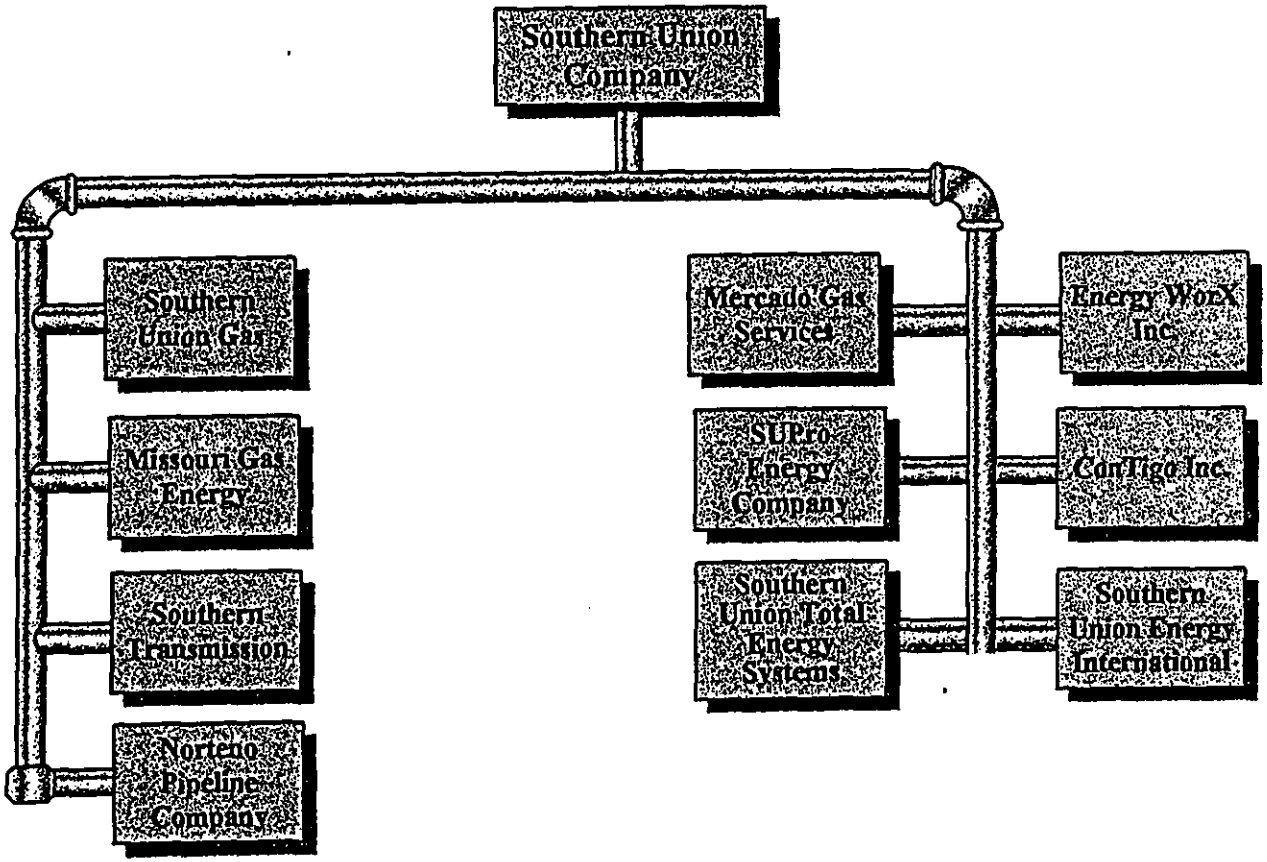


Figure 3

SOUTHERN UNION COMPANY PROFILE

Southern Union Gas Co.	Local distribution company in Texas
Missouri Gas Energy	Local distribution company in Missouri
Southern Transmission Co.	Natural gas transmission
Norteno Pipeline Co.	Natural gas pipeline
Mercado Gas Services	Gas marketing to end users and gas suppliers
Southern Union Total Energy Systems Co.	Natural gas industrial applications, equipment, design, consultation, sales, and service
Southern Union Energy International, Inc.	Natural gas sales and service outside the United States
Energy WorX Inc.	Develops computer-based training programs for LDCs
ConTigo Inc.	Customer service company
SUPro Energy Co.	Manages and operates propane companies

Figure 4

Gas Supply Department

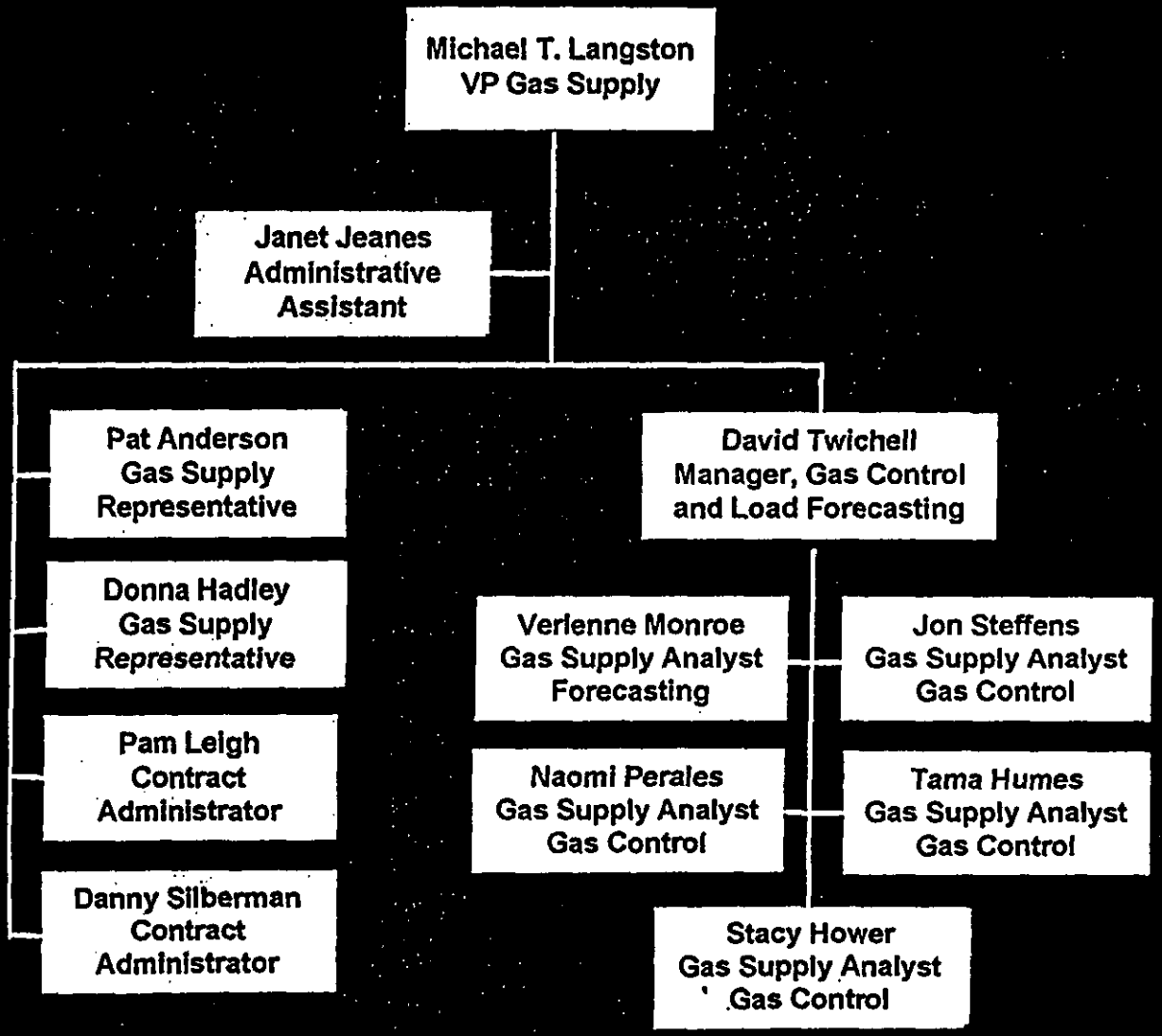


Figure 5

GAS SUPPLY CONTACTS

Personnel

Mike Langston	VP Gas Supply	512-370-8277
Janet Jeanes	Administrative Assistant	512-370-8276
Donna Hadley	Gas Supply Representative	512-370-8661
Pat Anderson	Gas Supply Representative	512-370-8280
Pam Leigh	Contract Administrator	512-370-8279
Danny Silberman	Contract Administrator	512-370-8680
David Twichell	Manager, Gas Control	512-370-8281
Verlenne Monroe	Gas Supply Analyst, Forecasting	512-370-8282
Jon Steffens	Gas Supply Analyst, Dispatching	512-370-8283
Naomi Perales	Gas Supply Analyst, Dispatching	512-370-8317
Tama Humes	Gas Supply Analyst, Dispatching	512-370-8780
Stacy Hower	Gas Supply Analyst, Dispatching	512-370-8290

Gas Supply Fax Number	512-476-4966
24-Hour Emergency Number	512-476-5035

Figure 6

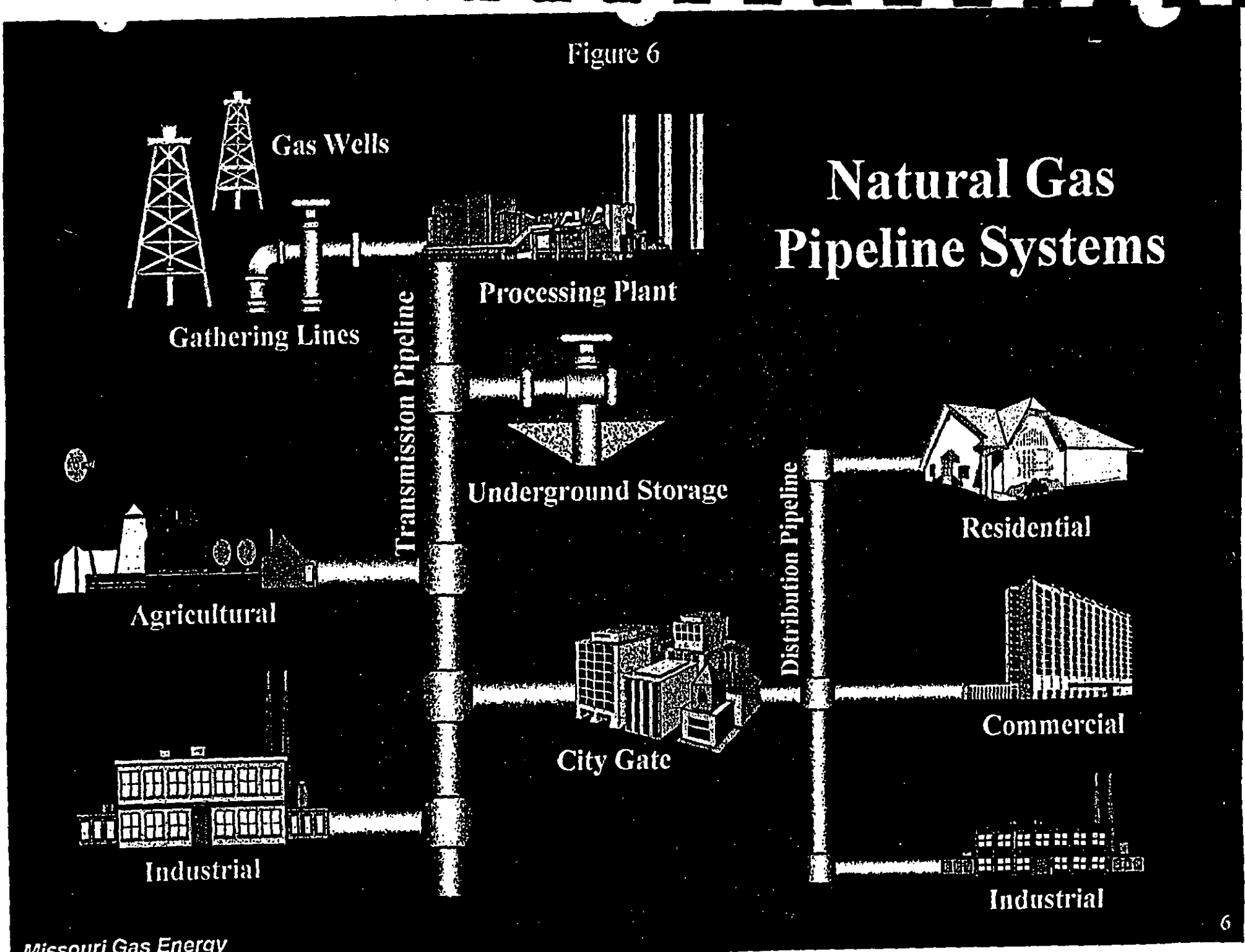

Natural Gas Pipeline Systems
Gas Wells
Gathering Lines
Processing Plant
Transmission Pipeline
Underground Storage
Distribution Pipeline
Residential
Agricultural
City Gate
Commercial
Industrial
Industrial
6
Missouri Gas Energy

Figure 7

SOUTHERN UNION COMPANY SERVICE AREAS

Missouri Gas Energy

7

Figure 8

SOUTHERN UNION COMPANY SERVICE AREAS

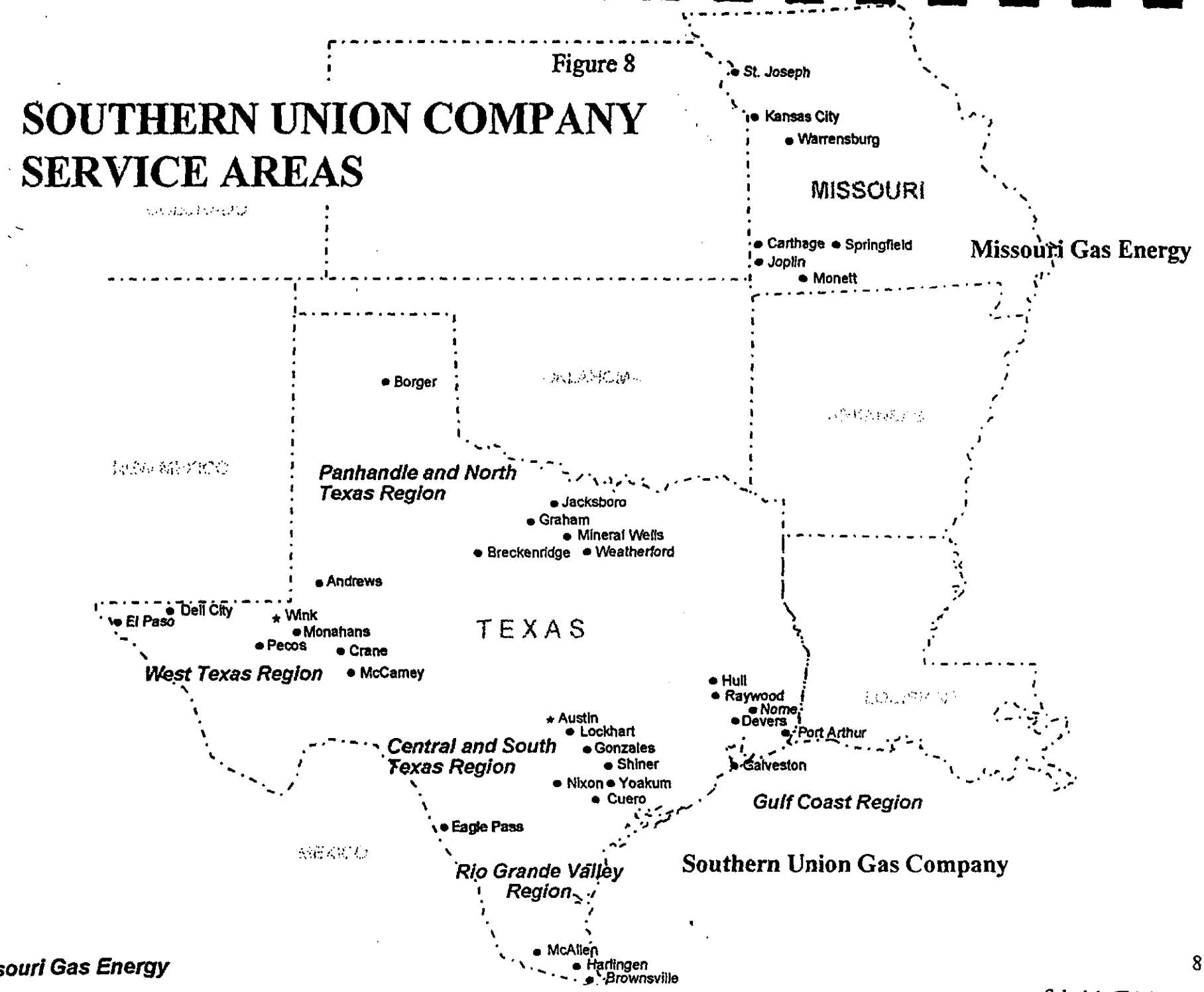


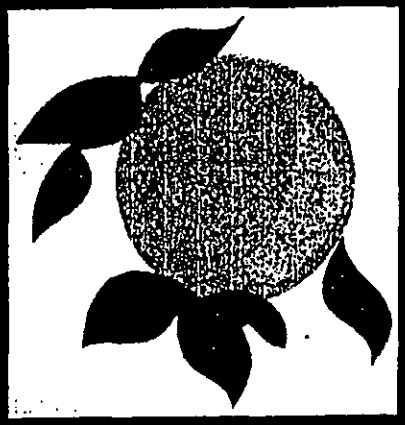
Figure 9

SOUTHERN UNION GAS COMPANY SERVICE AREAS

REGION	CENTRAL TEXAS	GULF COAST	WEST TEXAS
POPULATION	533,000	322,000	620,000
CUSTOMERS	150,000	52,250	166,000
ANNUAL VOLUME	12 Bcf	4 Bcf	17 Bcf
PIPELINES	Valero Tejas Houston Pipe Line	Houston Pipe Line Midcon Texas	El Paso Natural Gas West Texas Gas KN Energy Northern Natural

Figure 10

SOUTHERN UNION GAS COMPANY SERVICE AREAS



REGION	PANHANDLE & NORTH TEXAS	RIO GRANDE VALLEY
POPULATION	77,000	254,000
CUSTOMERS	33,000	74,250
ANNUAL VOLUME	3.1 Bcf	3.6 Bcf
PIPELINES	El Paso Natural Gas Southwestern Gas Pipeline Tufco	Valero

[redacted]

Figure 11

MISSOURI GAS ENERGY SERVICE AREAS

REGION	KANSAS CITY AREA	JOPLIN AREA	ST. JOSEPH AREA
POPULATION	1,460,000	190,000	77,000
CUSTOMERS	360,000	70,000	30,000
ANNUAL VOLUME	55.1 Bcf	8.5 Bcf	4.5 Bcf
PIPELINES	Williams Natural Gas Panhandle Eastern Pipe Line Riverside Pipeline (KPOC) Pony Express (KN Energy)	Williams Natural Gas	Williams Natural Gas

[redacted]

Figure 12

MISSOURI GAS ENERGY

CUSTOMERS AND SALES VOLUMES
Fiscal 1996

	Customers	Mcf
• RESIDENTIAL	414,788	46,551,651
• COMMERCIAL	59,690	21,460,800
• INDUSTRIAL	322	588,920
• TRANSPORTATION	318	30,746,071

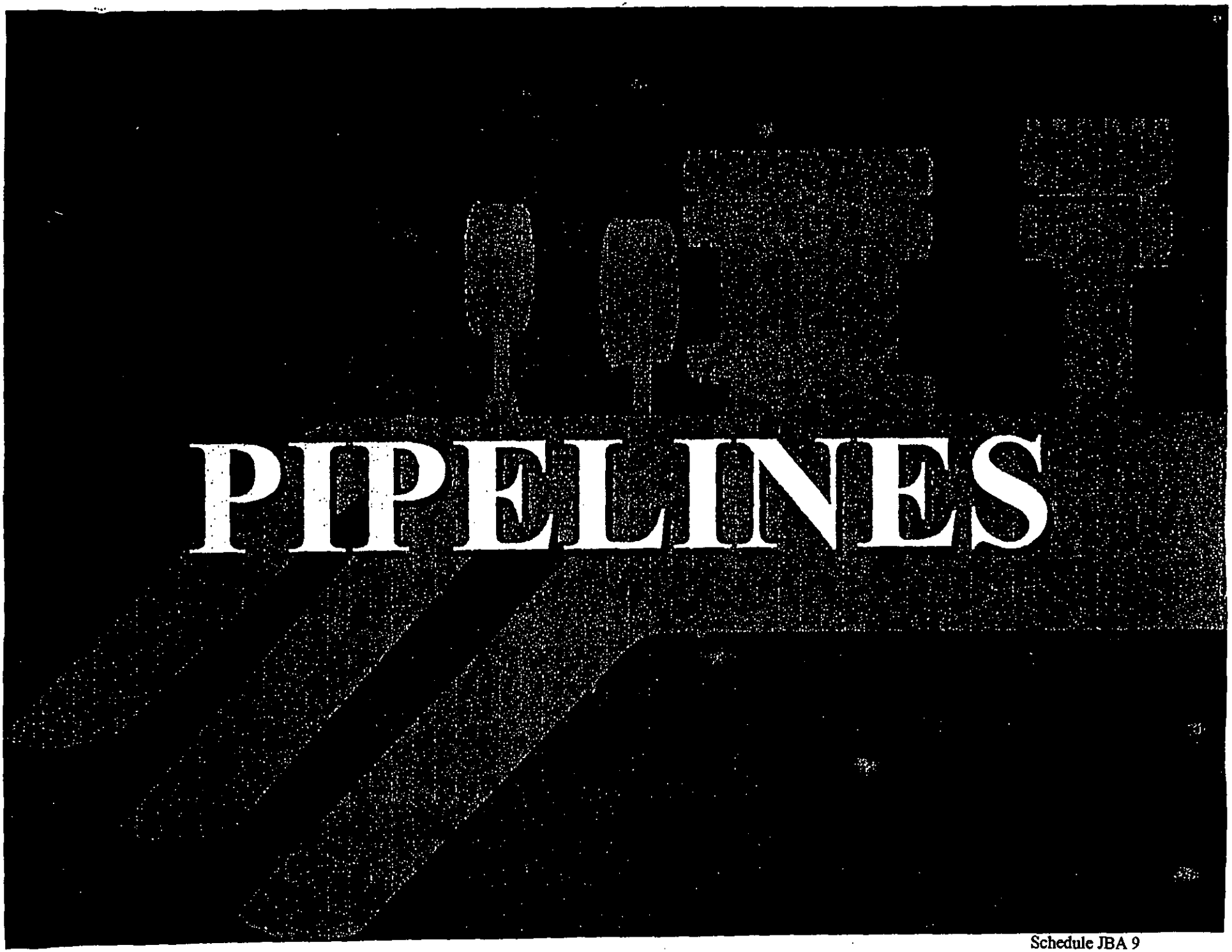

PIPELINES

Figure 13

WILLIAMS NATURAL GAS COMPANY

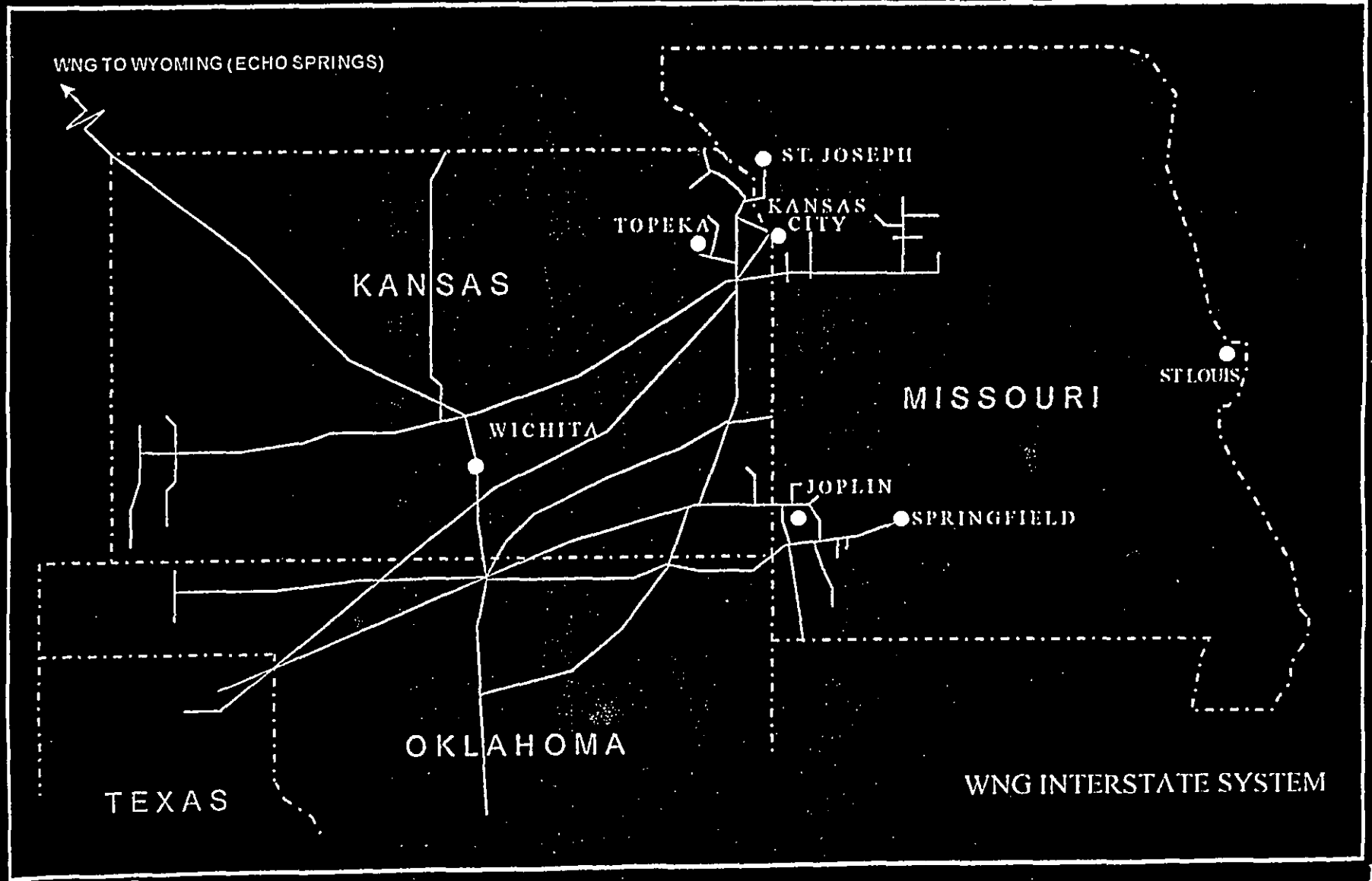
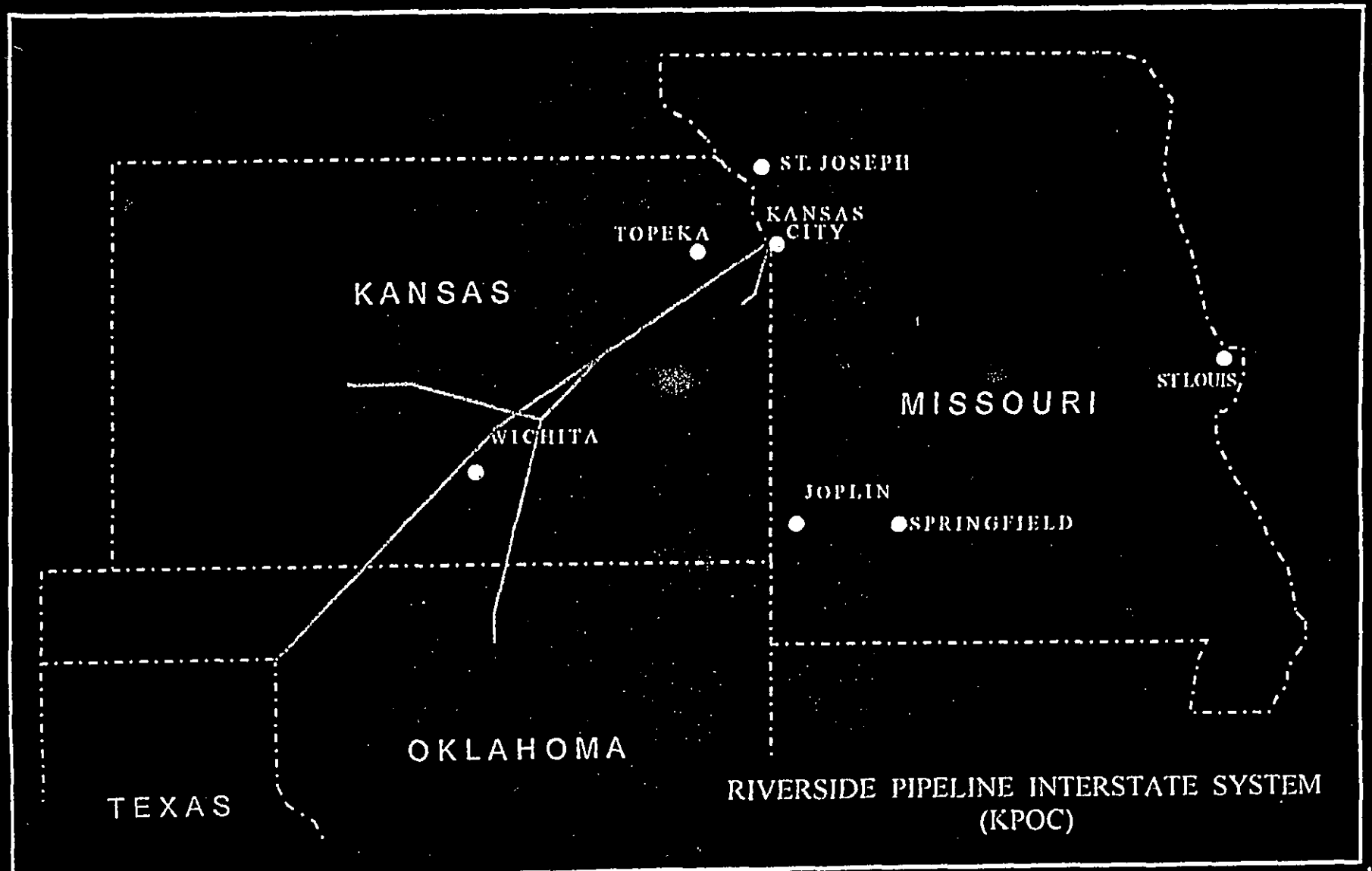


Figure 14

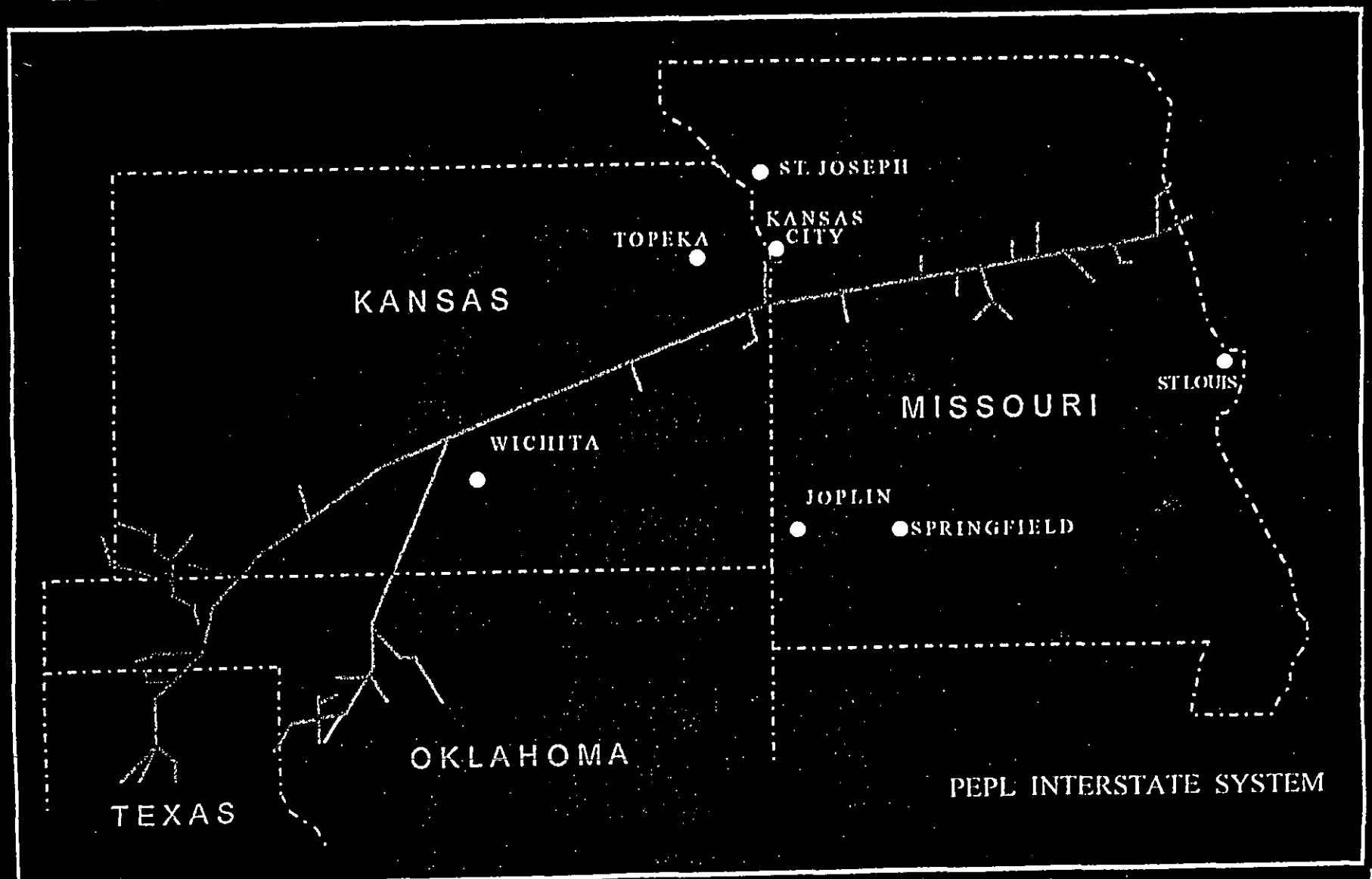
RIVERSIDE PIPELINE COMPANY



Missouri Gas Energy

Figure 15

PANHANDLE EASTERN PIPE LINE COMPANY



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Missouri Gas Energy

Figure 16

PONY EXPRESS PIPELINE

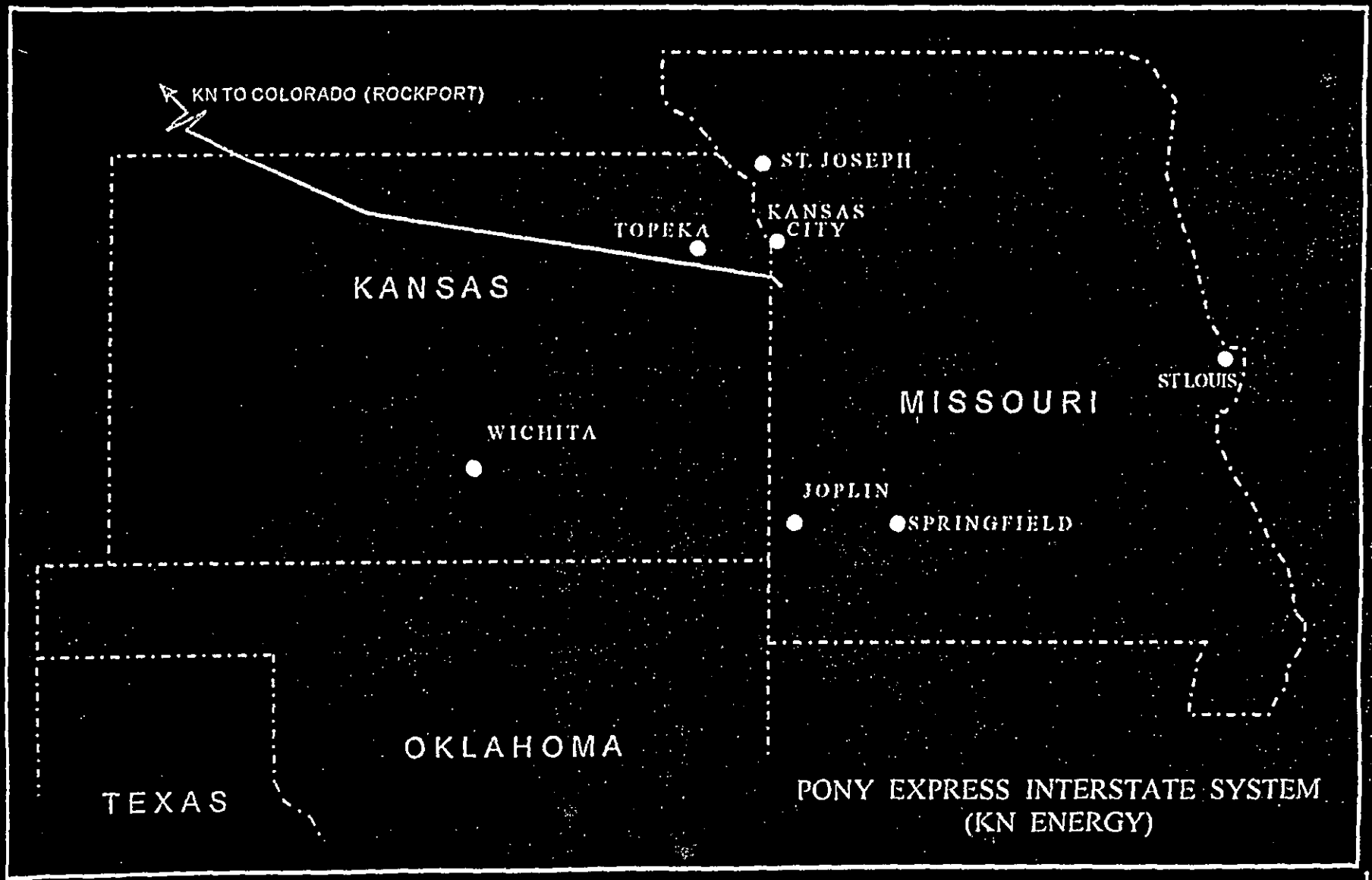
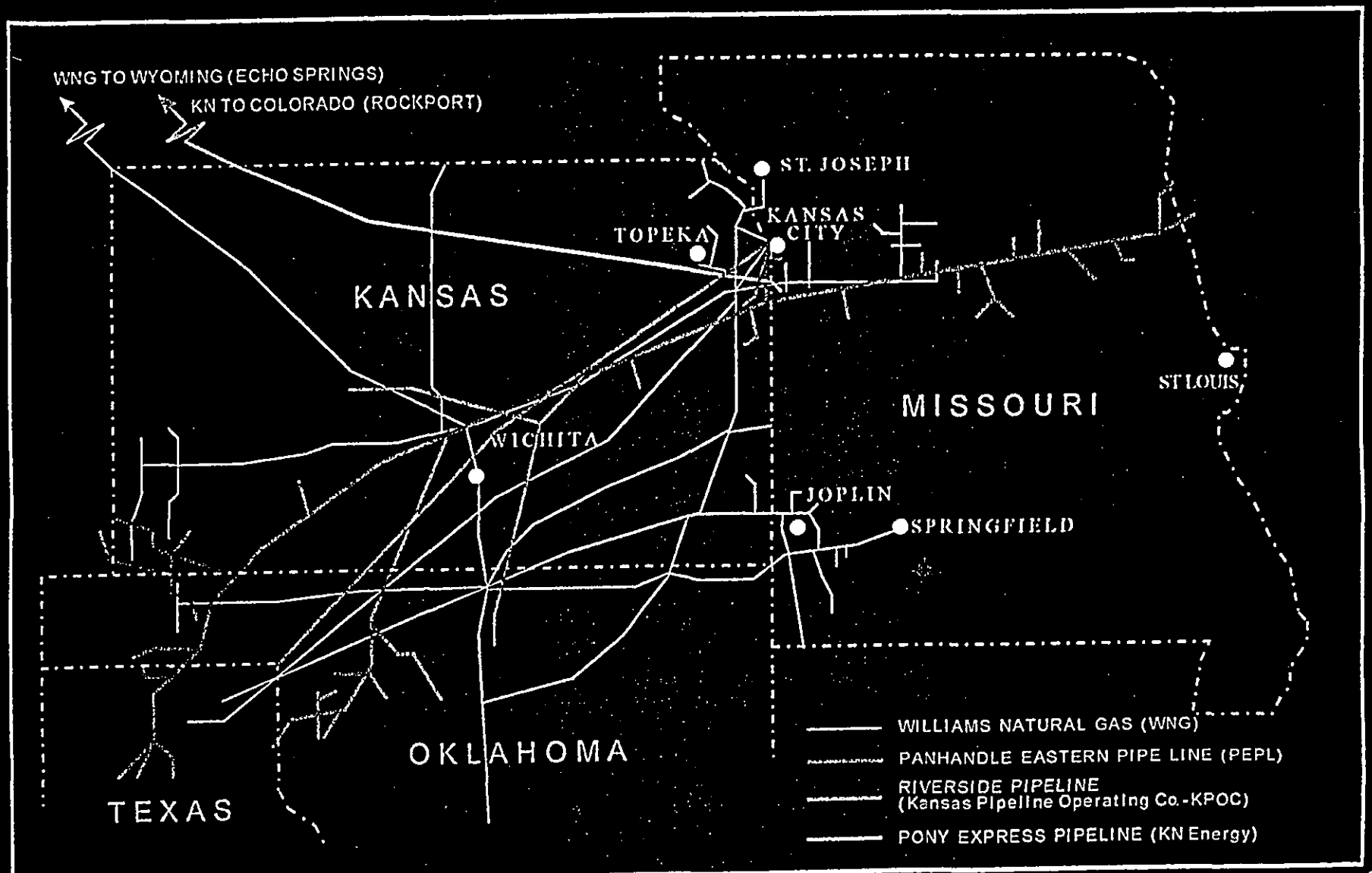


Figure 17

GEOGRAPHIC DIVERSITY OF SUPPLY



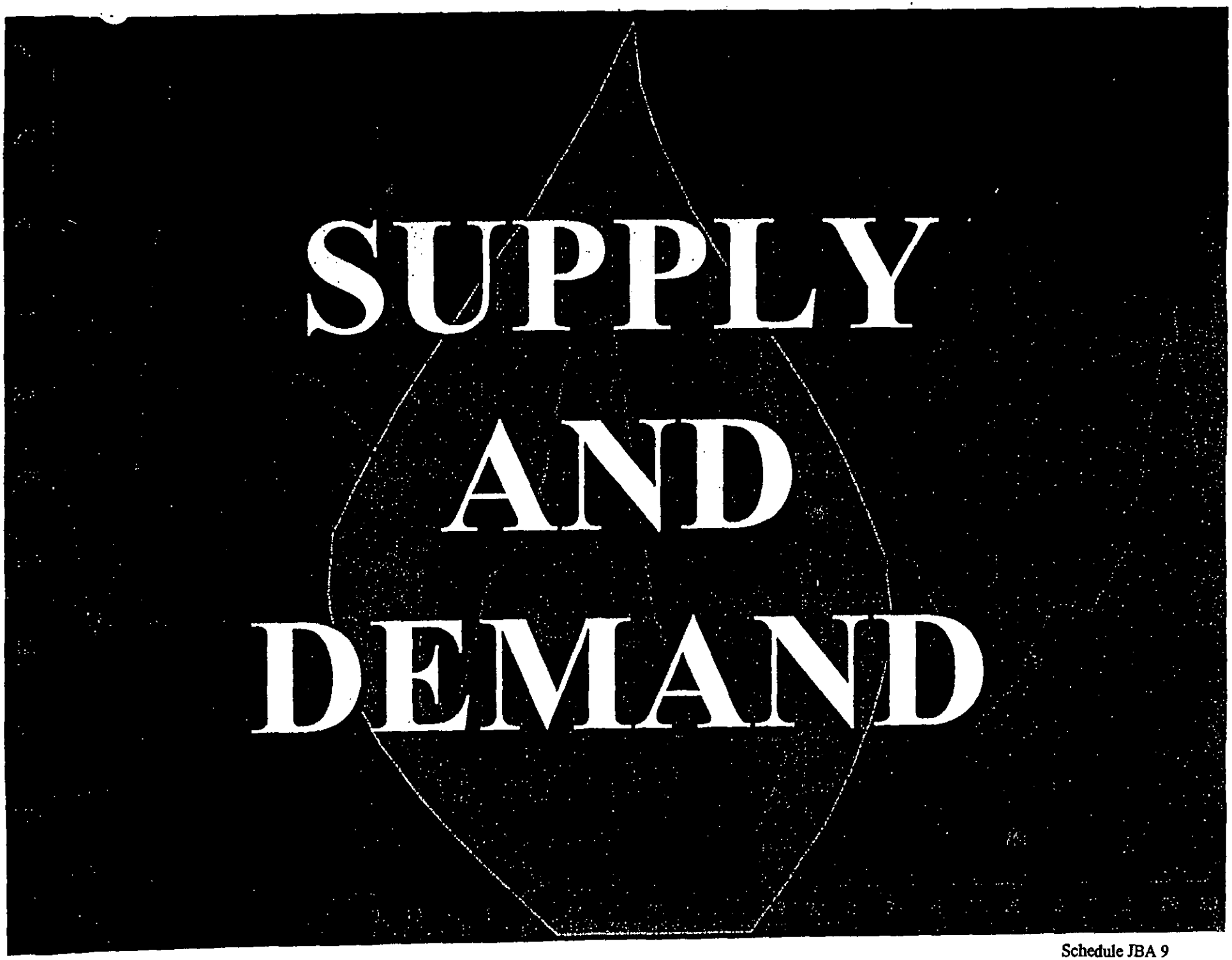

SUPPLY
AND
DEMAND

Figure 18

MONTHLY PURCHASE VOLUMES BY PIPELINE

12 Months Ending 3/31/97

MMBtu x 1,000

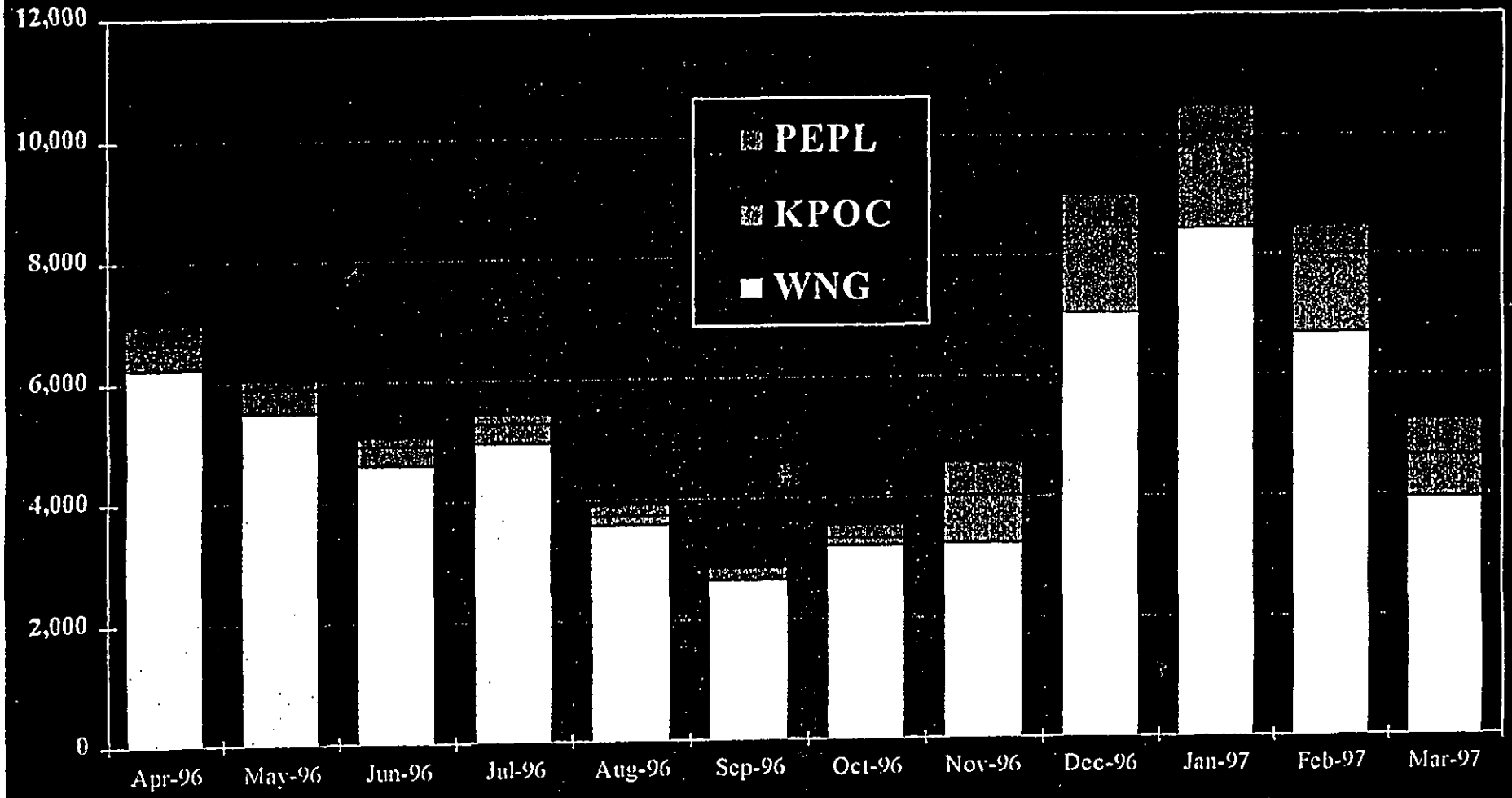
	Apr-96	May-96	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97	Total
WNG	6,217	5,493	4,625	4,966	3,589	2,674	3,211	3,247	7,016	8,447	6,685	3,963	60,135
KPOC	426	391	310	302	158	0	146	792	1,438	1,452	1,297	713	7,425
PEPL	328	155	162	176	195	194	206	547	568	568	513	568	4,180

Figure 19

MONTHLY PURCHASE VOLUMES BY PIPELINE

12 Months Ending 3/31/97

MMBtu x 1,000



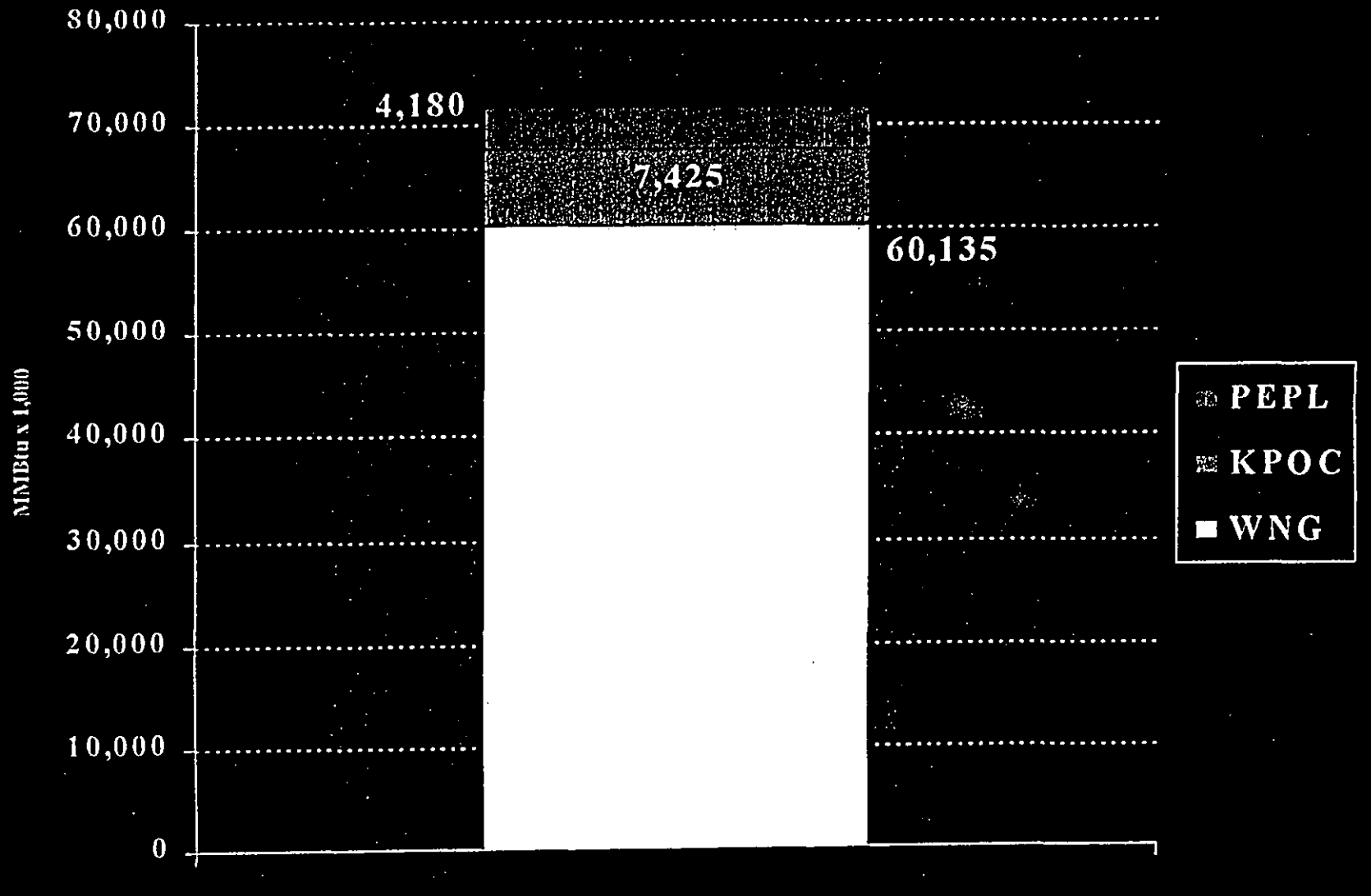
Missouri Gas Energy

[redacted]

Figure 20

PURCHASE VOLUMES BY PIPELINE

12 Months Ending 3/31/97



Missouri Gas Energy

Figure 21

PURCHASE VOLUMES BY PIPELINE

1996 - 1998

Bcf

FISCAL YEAR	WNG	Riverside (KPOC)	PEPL	Pony Express (KN Energy)	TOTAL MGE
1996	61.7	6.9	3.7	-	72.3
1997*	58.7	8.8	4.2	-	71.7
1998*	48.7	8.1	4.1	7.2	68.1

* Projected

Figure 22

PURCHASE VOLUMES BY PIPELINE

PROJECTED 1998 FISCAL YEAR

Bcf

	WILLIAMS NATURAL GAS (WNG)	RIVERSIDE PIPELINE COMPANY (KPOC)	PANHANDLE EASTERN PIPE LINE (PEPL)	PONY EXPRESS PIPELINE (KN Energy)
PURCHASE FOR RESALE				
Volume	48.7 Bcf	8.1 Bcf	4.1 Bcf	7.2 Bcf
Percent	71.5 %	11.9 %	6.0 %	10.6 %
CUSTOMER TRANSPORTATION				
Volume	28.3 Bcf	1.9 Bcf	0.1 Bcf	? Bcf
Percent	93.6 %	6.1 %	0.3 %	? %
TOTAL				
Volume	77.0 Bcf	10.0 Bcf	4.2 Bcf	7.2 Bcf
Percent	78.3 %	10.2 %	4.3 %	7.3 %

Figure 23

HISTORIC PEAK DAY

SUPPLY COMPARED TO PROJECTED HISTORIC PEAK DAY

MMBtu x 1,000

	Fiscal Year 1998
Projected Peak Day 85 HDD	923
Contract Supply	293
Storage Withdrawal	511
Contract Supply Needed	119

Figure 24

HISTORIC PEAK DAY

SUPPLY COMPARED TO PROJECTED HISTORIC PEAK DAY

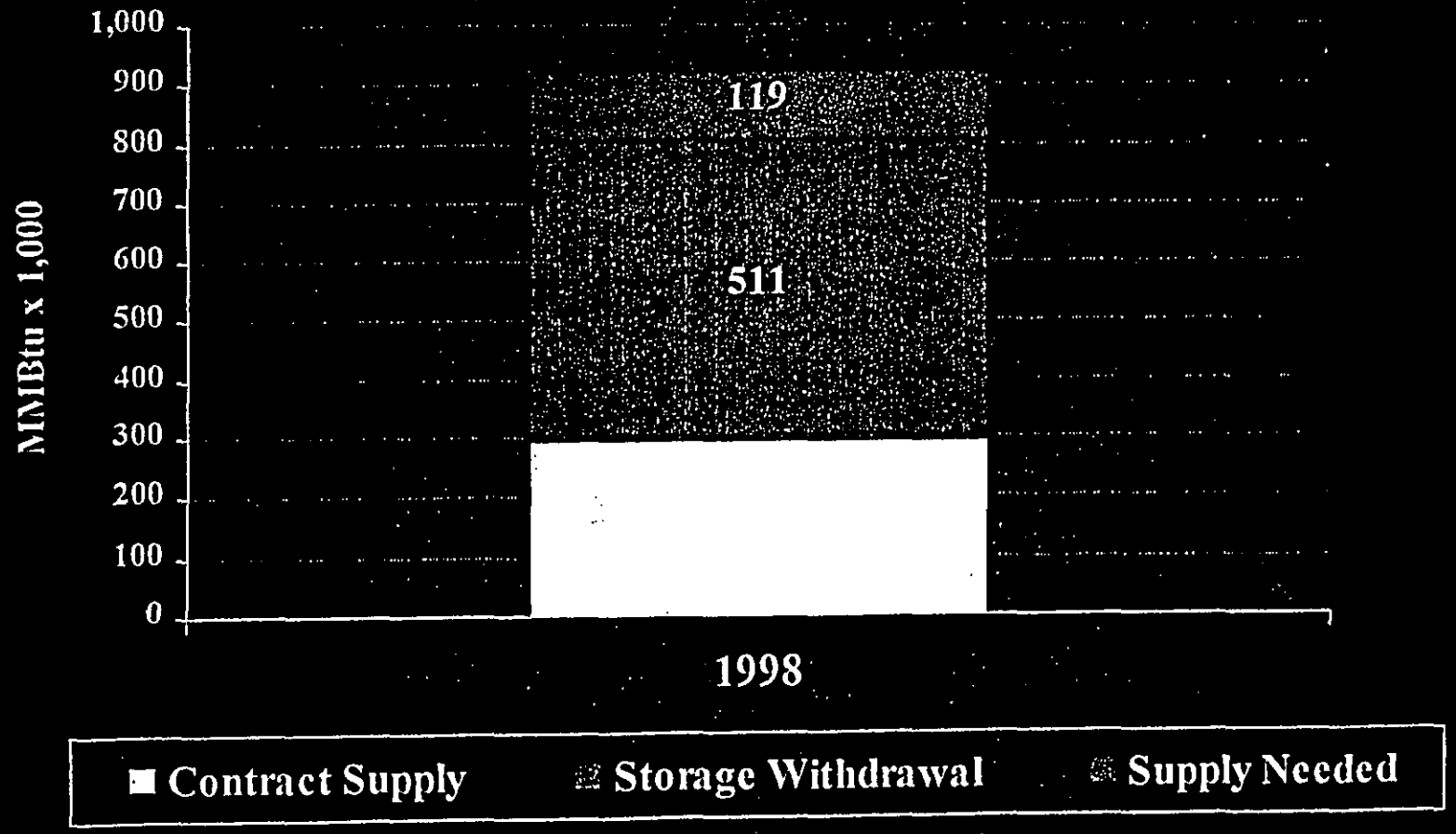


Figure 25

Minimum and Maximum Daily Volumes
12 Months Ending 3/31/97
MMBtu

Williams Natural Gas

	Apr-96	May-96	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97
MIN	74,027	26,940	26,803	20,939	25,068	33,426	53,833	139,140	135,129	105,990	129,323	93,277
MAX	265,810	93,766	44,695	46,658	54,421	82,084	219,669	391,038	526,448	675,258	376,274	333,735
AVG	135,738	53,974	36,105	30,951	35,518	53,204	102,126	254,793	309,979	410,658	275,727	170,634

Panhandle Eastern Pipeline Company

	Apr-96	May-96	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97
MIN	3,605	1,240	1,256	1,126	2,202	2,564	1,739	11,029	20,850	19,574	19,845	19,662
MAX	17,462	3,961	3,377	2,370	2,611	2,980	7,001	23,505	26,875	28,595	25,815	23,391
AVG	7,340	2,000	1,793	1,723	2,423	2,769	3,452	21,484	24,213	24,222	24,808	20,547

Kansas Pipeline Operating Company

	Apr-96	May-96	Jun-96	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97
MIN	15,180	15,282	7,930	8,083	4,583	0	4,341	23,100	44,748	45,335	45,296	22,291
MAX	16,389	20,436	13,611	14,685	5,421	0	4,738	34,018	46,654	46,412	46,037	22,816
AVG	15,913	12,008	9,943	9,572	4,878	0	4,627	25,983	45,889	46,259	45,849	22,698

Figure 26

DAILY VOLUME SWINGS

April

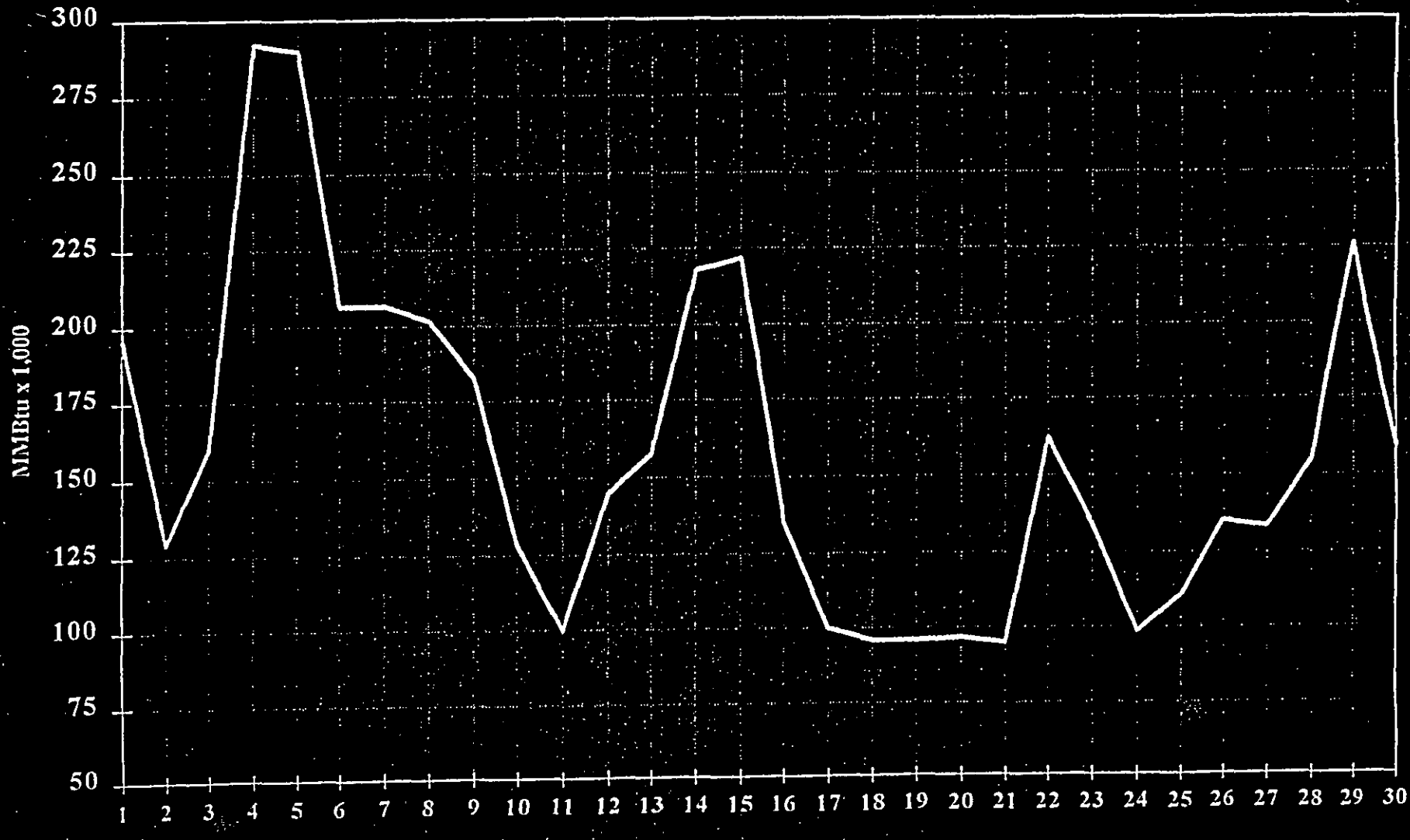


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Figure 27

PROJECTED SUPPLY REQUIREMENTS

DESIGN DAY BY MONTH

MMBtu

	Nov-97	Dec-97	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98
Customer Demand	543,258	840,959	840,959	840,959	596,108	297,579	140,810	70,676	48,600	56,041	121,331	279,587
Storage Injection	0	0	0	0	0	50,000	119,544	113,677	98,648	93,560	65,867	27,698
System Demand	543,258	840,959	840,959	840,959	596,108	347,579	260,354	184,353	147,248	149,601	187,198	307,285
Monthly Contract Quantity	124,800	178,065	198,065	168,071	126,839	109,667	75,032	71,767	60,871	60,871	61,133	64,968
Storage Withdrawal	511,895	511,895	511,895	511,895	511,895	0	0	0	0	0	0	0
Available Supply	636,695	689,960	709,960	679,966	638,734	109,667	75,032	71,767	60,871	60,871	61,133	64,968
Contract Supply Needed	0	150,999	130,999	160,993	0	237,912	185,322	112,586	86,377	88,730	126,065	242,317

Figure 28

PROJECTED SUPPLY REQUIREMENTS
AVERAGE MONTHLY DEMAND
MMBtu x 1,000

	Nov-97	Dec-97	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98
Customer Demand + Fuel	7,559	12,618	14,160	11,413	8,608	4,290	2,814	1,846	1,553	1,658	1,814	3,392
Storage Injection	0	0	0	0	0	1,500	3,706	3,410	3,058	2,900	1,976	859
System Demand	7,559	12,618	14,160	11,413	8,608	5,790	6,520	5,256	4,611	4,558	3,790	4,251
Monthly Contract Quantity	3,744	5,520	6,140	4,706	3,932	3,290	2,326	2,153	1,887	1,887	1,834	2,014
Storage Withdrawal	3,150	3,400	3,400	3,400	2,642	0	0	0	0	0	0	0
Available Supply	6,894	8,920	9,540	8,106	6,574	3,290	2,326	2,153	1,887	1,887	1,834	2,014
Contract Supply Needed	665	3,698	4,620	3,307	2,034	2,500	4,194	3,103	2,724	2,671	1,956	2,237

Figure 29

CUSTOMER DEMAND

MMBtu x 1,000

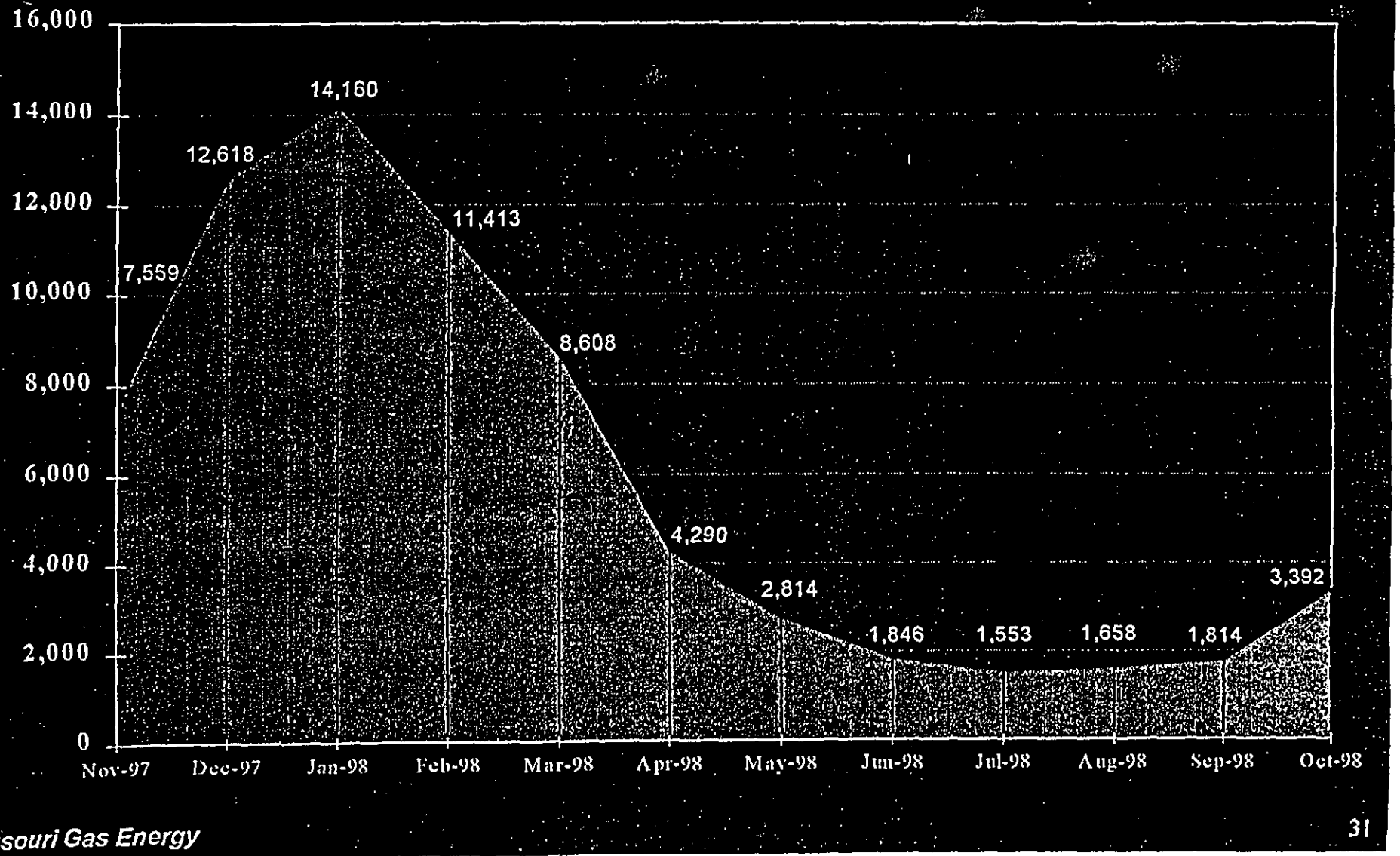

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Figure 30

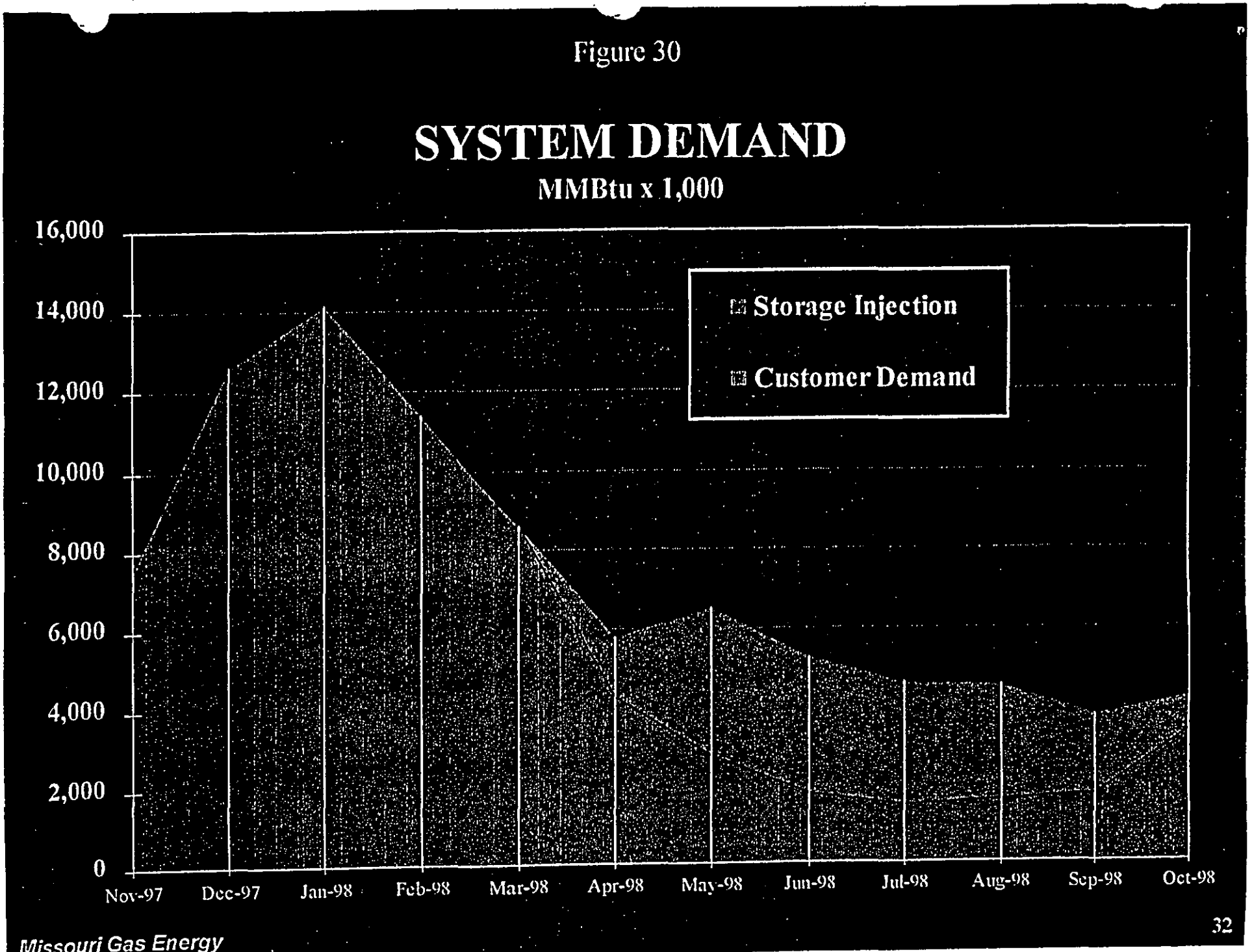
SYSTEM DEMAND
MMBtu x 1,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Storage Injection
Customer Demand
Nov-97
Dec-97
Jan-98
Feb-98
Mar-98
Apr-98
May-98
Jun-98
Jul-98
Aug-98
Sep-98
Oct-98
32
Missouri Gas Energy

Figure 31

MONTHLY CONTRACT QUANTITY

MMBtu x 1,000

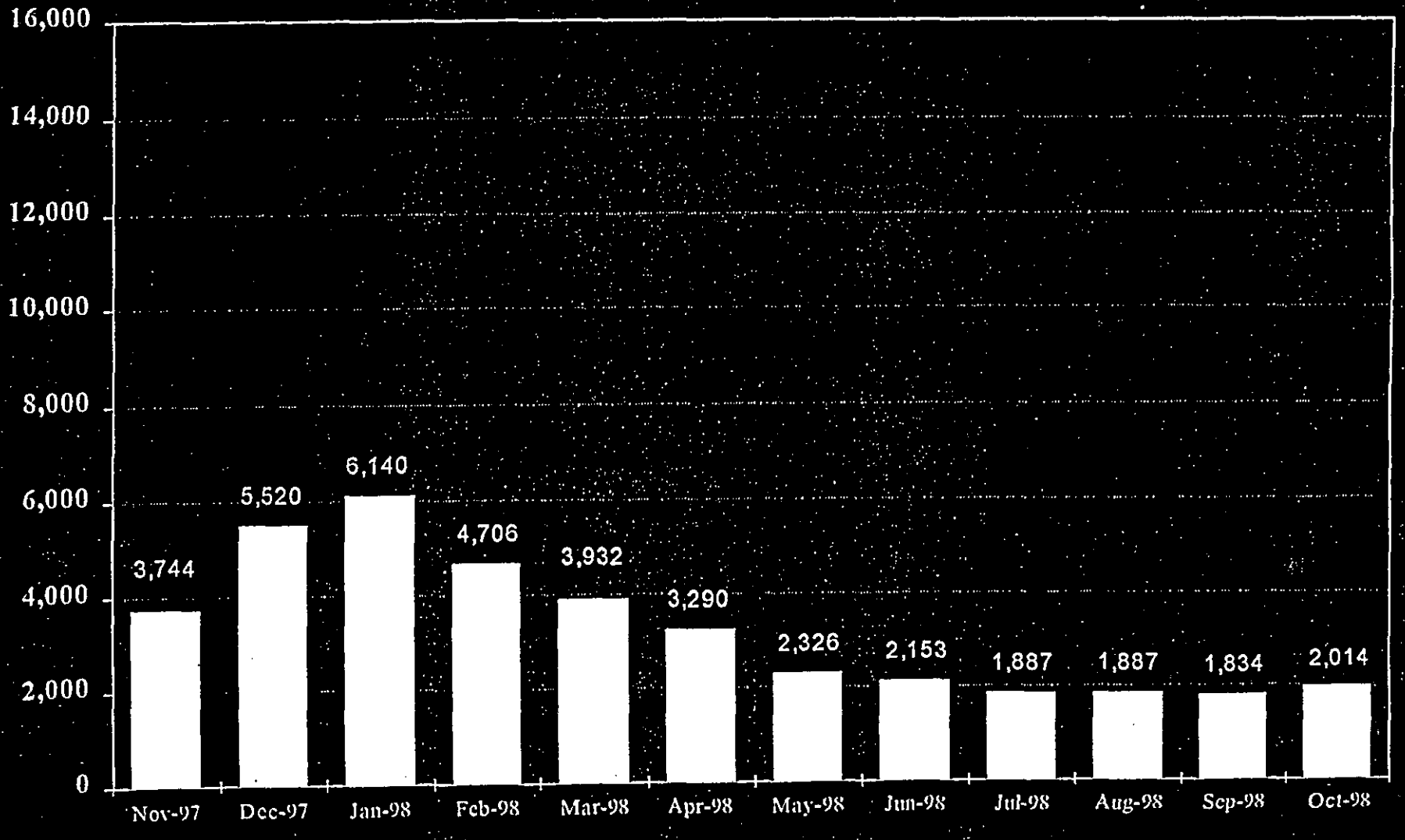

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Figure 32

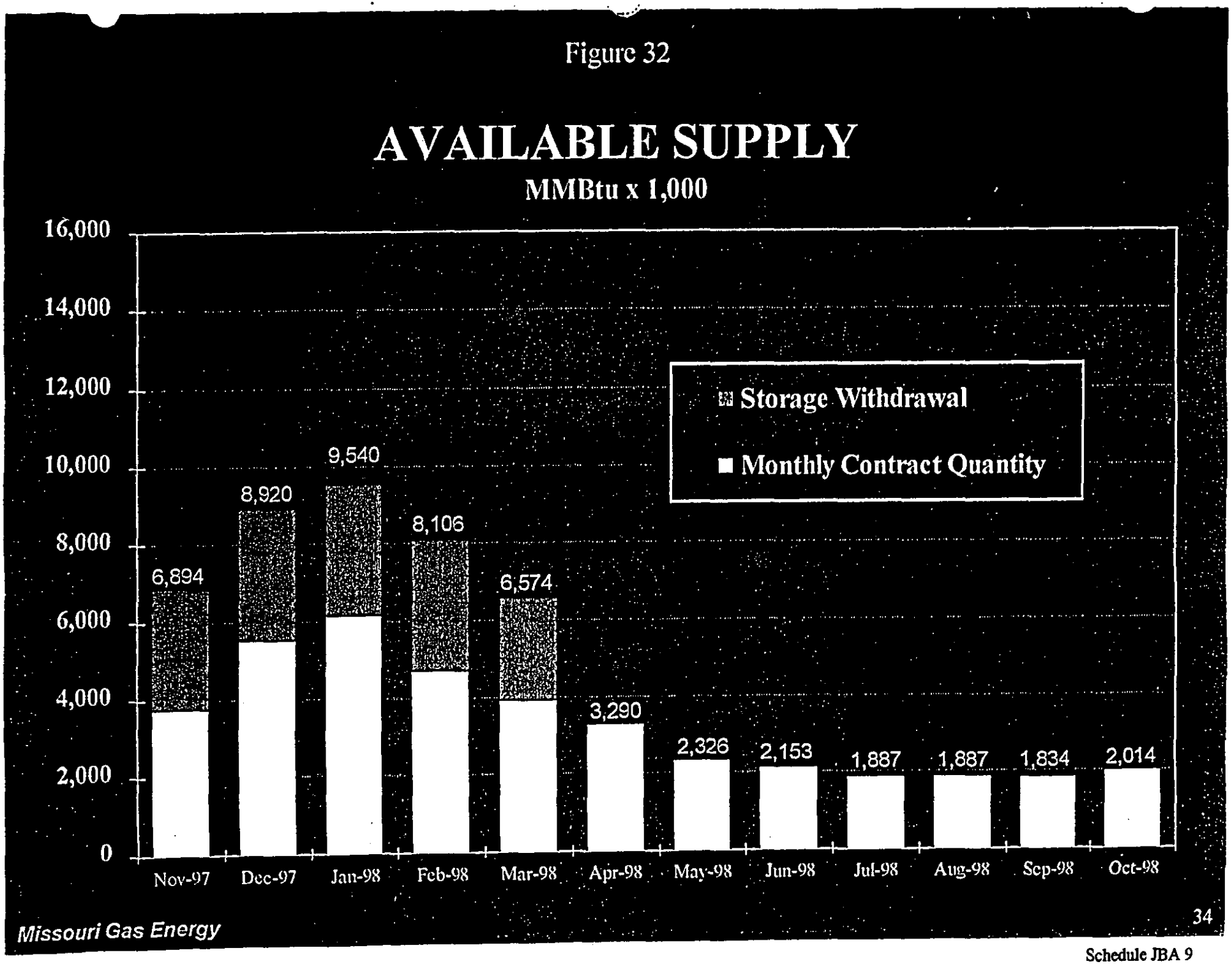
AVAILABLE SUPPLY
MMBtu x 1,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Storage Withdrawal
Monthly Contract Quantity
6,894
8,920
9,540
8,106
6,574
3,290
2,326
2,153
1,887
1,887
1,834
2,014
Nov-97
Dec-97
Jan-98
Feb-98
Mar-98
Apr-98
May-98
Jun-98
Jul-98
Aug-98
Sep-98
Oct-98
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Figure 33

PROJECTED SUPPLY REQUIREMENTS

MMBtu x 1,000

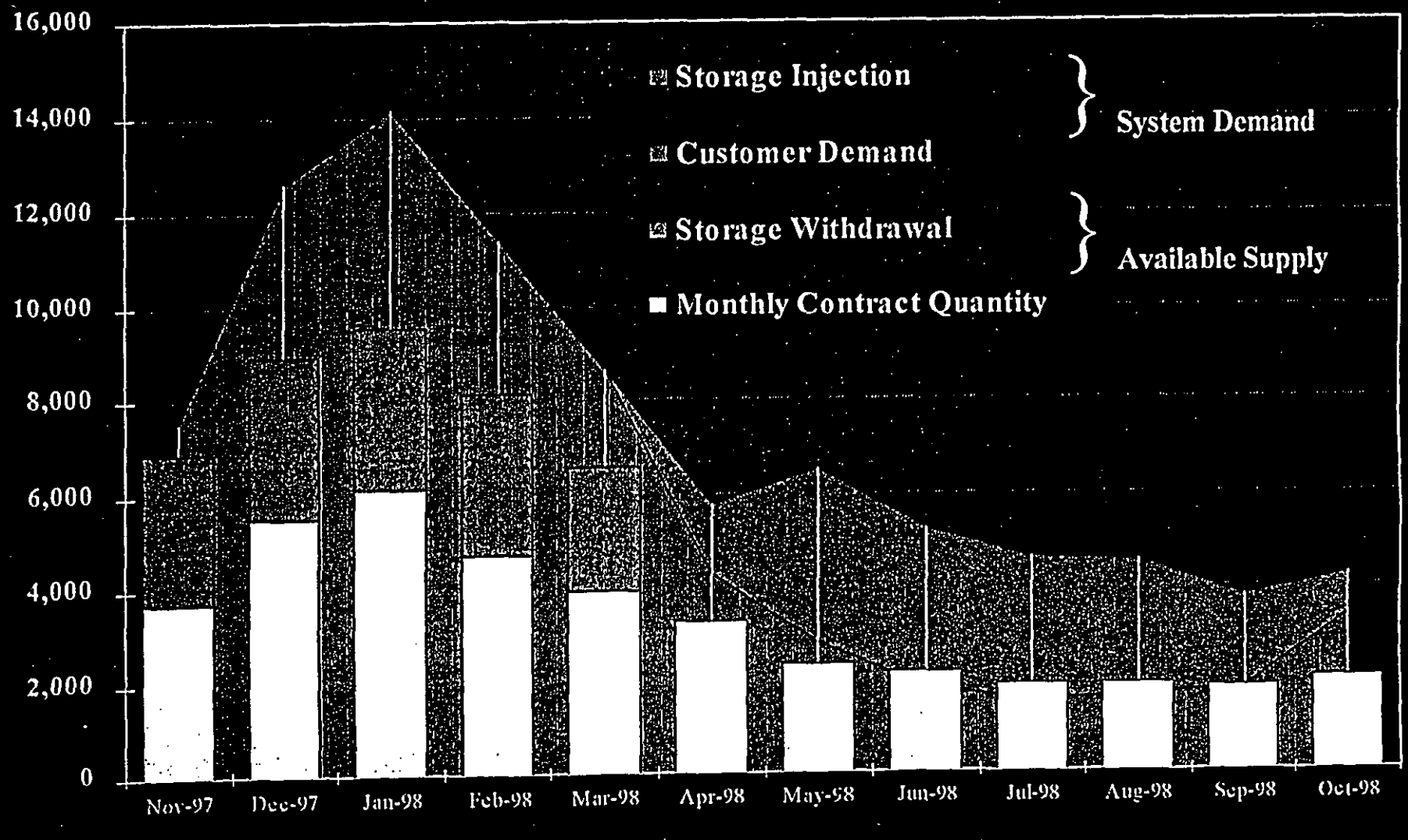

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Figure 34

PROJECTED SUPPLY AND DEMAND

MMBtu x 1,000

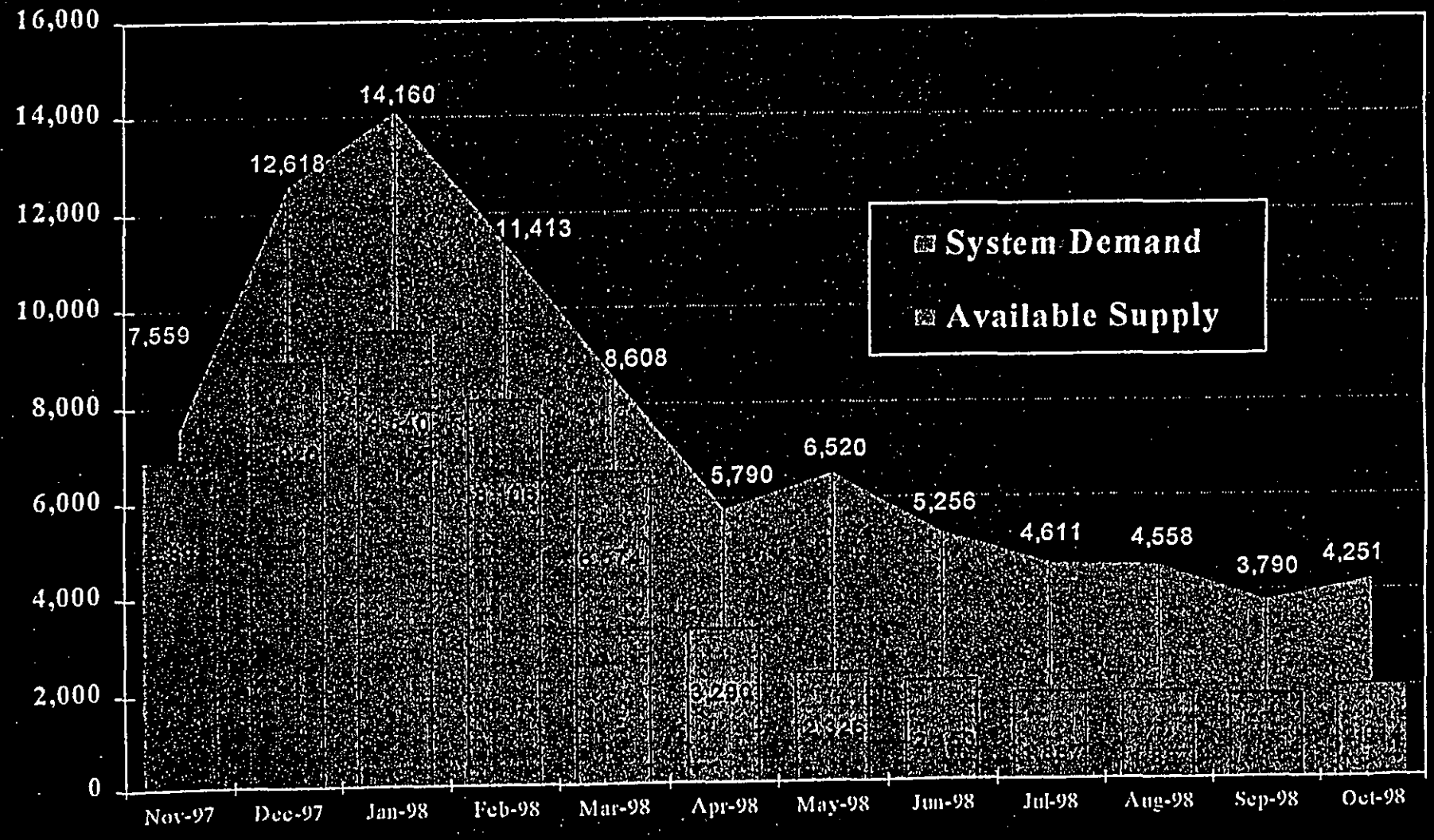

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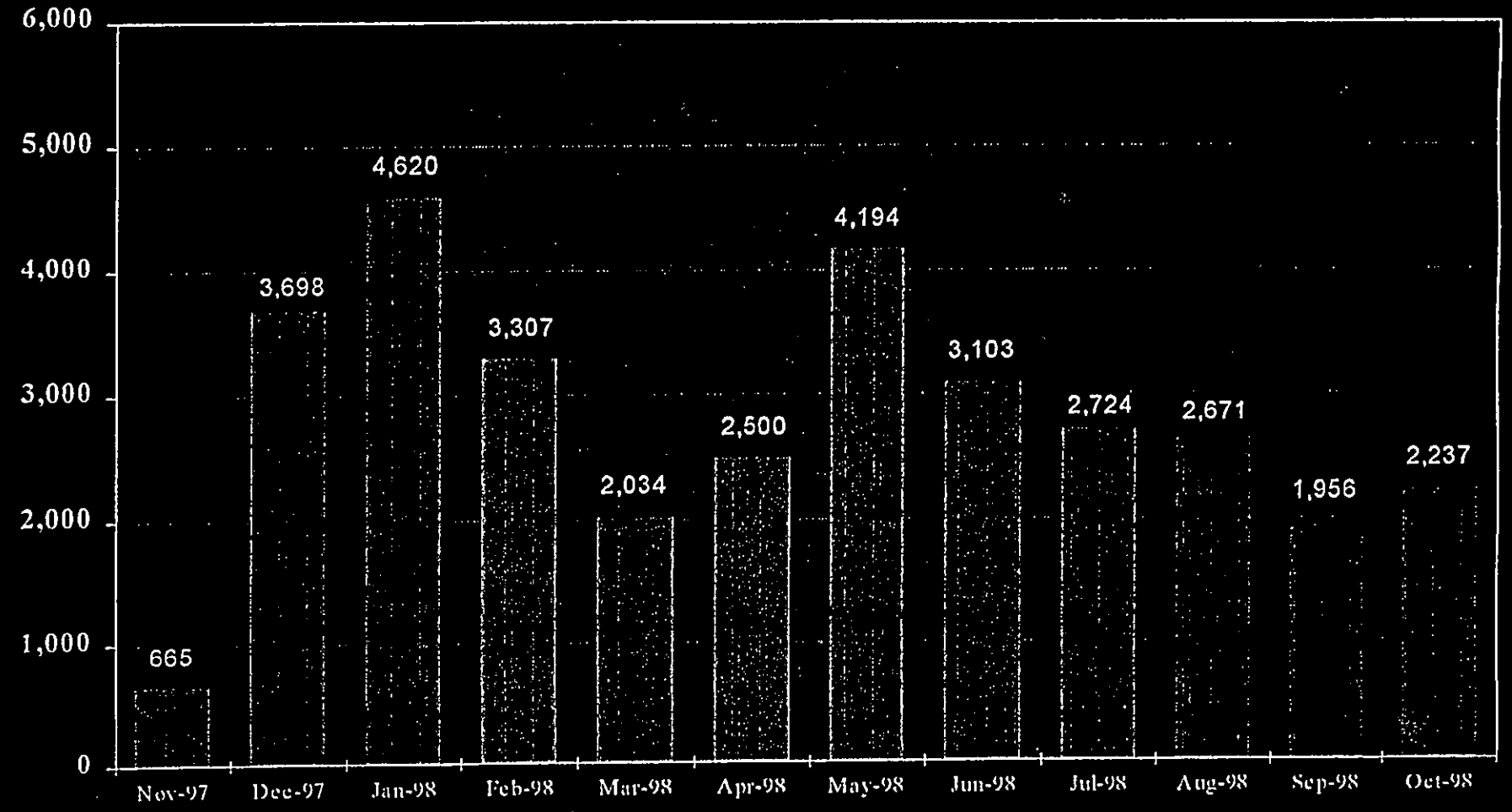
Figure 35

CONTRACT SUPPLY REQUIREMENT

MMBtu x 1,000



Missouri Gas Energy

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Figure 36

REQUEST FOR PROPOSAL

Volumes in Dth per Day

PONY	Base	Swing	Peaking
November	15,000	40,000	10,000
December	17,107	40,000	25,000
January	0	40,000	25,000
February	13,005	40,000	25,000
March	15,776	40,000	25,000

PEPL	Field Zone Base	Haven Base
November	8,940	8,941
December	8,940	8,941
January	8,940	8,941
February	8,940	8,941
March	8,940	8,941

WNG	Base	Swing	Peaking
November	0	30,000	10,000
December	72,119	40,000	32,000
January	77,119	40,000	27,000
February	52,119	40,000	62,000
March	27,119	30,000	25,000

Peaking

1. *Volume must be available from intraday points upon 8 hours notice and for any 8 days during the months indicated.*

Swing

1. *Percent of swing must be, at a minimum, proportional to percent of baseload bid. Swing may be bid exclusive of baseload.*
2. *MGE must have option to increase up to proposed quantity or decrease to zero upon 24 hours notice.*

Price

Index Based

Delivery Point(s)

Into mainline of WNG Production Area
PEPL Field Zone, Haven, or appropriate Pooling Point
Into mainline of Pony Express at Rockport
No Rawlins-Hesston WNG Receipt Point will be considered
Specific Points to be negotiated

Term

November 1997 through March 1998

Figure 37

DAILY TRANSPORTATION CAPACITY COMPARED TO HISTORIC PEAK DAY

MMBtu x 1,000

	FISCAL 97	FISCAL 98
Riverside Pipeline Company (KPOC)		
Flowing Capacity	46,332	46,332
Storage Withdrawal	0	0
Total	46,332	46,332
Panhandle Eastern Pipe Line		
Flowing Capacity	17,881	17,881
Storage Withdrawal	12,545	12,564
Total	30,426	30,445
Williams Natural Gas		
Flowing Capacity	248,815	258,815
Storage Withdrawal	499,750	499,331
Total	798,565	758,146
Pony Express		
Flowing Capacity	0	135,000
TOTAL DAILY CAPACITY	875,323	969,923
HISTORIC PEAK DAY 85 HDD	916,390	923,386

Figure 38

CAPACITY RELEASE AGREEMENT

- Competitive market rates
- Recallable during peak periods and/or within any 24-hour period when required
- Capacity is usually prearranged
- Contract required prior to releasing capacity
- Available for WNG, PEPL, and Pony Express only

Notes

Schedule JBA 10 Has Been Deemed Highly Confidential In Its Entirety

Schedule JBA 10 Has Been Deemed Highly Confidential In Its Entirety

Schedule JBA 10 Has Been Deemed Highly Confidential In Its Entirety

PUBLIC SERVICE COMMISSION
STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Gas Cost Adjustment Tariff Revisions to be Reviewed in its 1996-1997 Annual Reconciliation Adjustment Account.	)))))	Case No. GR-96-450 October 28, 1998 Jefferson City, Mo.

DEPOSITION OF DENNIS LANGLEY,

a witness, produced, sworn and examined on the 28th day of October, 1998, between the hours of 8:00 a.m. and 6:00 p.m. of that day at the law offices of Brydon, Swearengen & England, 312 East Capitol, in the City of Jefferson, County of Cole, State of Missouri, before

KELLENE FEDDERSEN, CSR, RPR
ASSOCIATED COURT REPORTERS, INC.
714 West High Street
P.O. Box 1308
JEFFERSON CITY, MO 65109
(573) 636-7551

and Notary Public within and for the State of Missouri, commissioned in Cole County, in the above-entitled cause, on the part of the PSC Staff, taken pursuant to agreement.

we --

Q. Let me stop you just a second. The second contract meaning --

A. Meaning the southern --

Q. -- the southern connection everybody's talking about?

A. Right.

Q. Sorry. Go ahead.

A. And so it was absolutely essential to do that. So I would say we got a benefit and Missouri customers got a benefit and MGE got a benefit by closing that up, by proceeding in a way that would on a weighted average lower costs. And that was one -- this contract as originally contemplated with Western was simply a bench -- beachhead contract where we were -- that was what got us into the Missouri market, and it was originally contemplated and executed at the same time as the southern contract. So that was the concept. So we got to move forward with that project.

The second thing that it did was, we were -- we're a small company, and we were being -- in my mind we were being remise but at that time in the context of all revenues were shut off, and it turned revenues back on.

Q. What do you mean, all revenues were shut

PIPELINE CAPACITY CHARGES

Source of Capacity Charge	$ Per MMBTU / Days Per Month
Mid-Kansas II / Riverside I	$ 15.5860
Riverside II	$ 3.9000
Blended Capacity Cost (1)	$ 6.6578
Comparable Rate for Capacity on Williams System	$ 10.2703
Mid - Kansas Savings Compared to Williams	$ 3.6125

1. Blended rate assumes Mid-Kansas II / Riverside I, 46,332 MMBtu/day; Riverside II, 150,000 MMBtu/day.

2. This calculation is conservative in nature since it does not incorporate William's direct bill rates.

PUBLIC SERVICE COMMISSION
STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Gas Cost Adjustment Tariff Revisions to be Reviewed in its 1996-1997 Annual Reconciliation Adjustment Account.	)))))	Case No. GR-96-450 October 26, 1998 Jefferson City, Mo.

DEPOSITION OF MICHAEL WALLIS,

a witness, produced, sworn and examined on the 26th day of October, 1998, between the hours of 8:00 a.m. and 6:00 p.m. of that day at the law offices of Brydon, Swearengen & England, 312 East Capitol, in the City of Jefferson, County of Cole, State of Missouri, before

KELLENE FEDDERSEN, CSR, RPR
ASSOCIATED COURT REPORTERS, INC.
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and Notary Public within and for the State of Missouri, commissioned in Cole County, in the above-entitled cause, on the part of MGE, taken pursuant to agreement.

adjustments to those contracts in Cases 94-101 and 94-228. I think that -- and then there's two cases after that, but all bets are off when you get to this case, Case No. GR-96-450. That's my interpretation of what that step means and what it was designed to do.

Q. So the Staff is questioning the prudence of MGE entering into the February 24th, 1995 agreement?

A. That's correct.

Q. But the Staff agreed that the January 15th, 1990 agreement was prudent or agreed not to challenge the prudency of that?

A. That's true. That's moot, because that particular contract was amended in, I think you said earlier, October of '91, and that's the contract that I believe had the price cap in it. That was later amended to substitute that for regulatory out clause, and we litigated that issue at the Commission, and the Commission awarded the Staff 1.3 million. And so I think that that contract was found to be imprudent by the Commission.

Subsequent contracts I don't think have been ruled on by the Commission. Let me back up. The 1990 contract was not the imprudent one. It was amended. It was the amended one. So the '95 contracts have not been looked at.