

CASE 6247 & 6248

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
State Land Office Building  
Santa Fe, New Mexico  
7 June, 1978

EXAMINER HEARING

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IN THE MATTER OF: (Consolidated)

Application of Mobil Oil Corporation ) CASE  
for a unit agreement, Lea County, New ) 6247  
Mexico, or statutory unitization. )

AND

Application of Mobil Oil Corporation ) CASE  
for a pressure maintenance project, Lea ) 6248  
County, New Mexico. )

-----  
BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Applicant: James E. Sperling, Esq.  
MODRALL, SPERLING, ROEHL, HARRIS  
& SISK  
Public Service Building  
Box 2168  
Albuquerque, New Mexico 87103

For Pennzoil: W. Thomas Kellahin, Esq.  
KELLAHIN & FOX  
500 Don Gaspar  
Santa Fe, New Mexico 87501

SALLY WALTON BOYD  
CERTIFIED SHORTHAND REPORTER  
730 Bishop's Lodge Road • Phone (505) 988-3404  
Santa Fe, New Mexico 87501

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial data and for providing a clear audit trail. The records should be kept up-to-date and should be accessible to all relevant parties.

2. The second part of the document outlines the procedures for handling any discrepancies or errors that may arise. It is important to identify the source of the error and to take appropriate steps to correct it. This may involve reviewing the original documents and consulting with the relevant staff members.

3. The third part of the document provides a detailed description of the various types of transactions that are recorded. This includes sales, purchases, and transfers. Each type of transaction should be clearly identified and recorded in a consistent manner.

4. The fourth part of the document discusses the importance of regular reconciliation of the records. This involves comparing the recorded transactions with the actual bank statements and other external records. This process helps to ensure that the records are accurate and that any discrepancies are identified and corrected.

5. The fifth part of the document provides a summary of the key points discussed in the document. It emphasizes the importance of maintaining accurate records and of following the procedures outlined in the document. It also provides a list of the key personnel responsible for the implementation and maintenance of the system.

6. The sixth part of the document provides a list of the key personnel responsible for the implementation and maintenance of the system. This includes the names and titles of the individuals who are responsible for the day-to-day operation of the system, as well as the names and titles of the individuals who are responsible for the overall management of the system.

7. The seventh part of the document provides a list of the key personnel responsible for the implementation and maintenance of the system. This includes the names and titles of the individuals who are responsible for the day-to-day operation of the system, as well as the names and titles of the individuals who are responsible for the overall management of the system.

8. The eighth part of the document provides a list of the key personnel responsible for the implementation and maintenance of the system. This includes the names and titles of the individuals who are responsible for the day-to-day operation of the system, as well as the names and titles of the individuals who are responsible for the overall management of the system.

9. The ninth part of the document provides a list of the key personnel responsible for the implementation and maintenance of the system. This includes the names and titles of the individuals who are responsible for the day-to-day operation of the system, as well as the names and titles of the individuals who are responsible for the overall management of the system.

10. The tenth part of the document provides a list of the key personnel responsible for the implementation and maintenance of the system. This includes the names and titles of the individuals who are responsible for the day-to-day operation of the system, as well as the names and titles of the individuals who are responsible for the overall management of the system.

11. The eleventh part of the document provides a list of the key personnel responsible for the implementation and maintenance of the system. This includes the names and titles of the individuals who are responsible for the day-to-day operation of the system, as well as the names and titles of the individuals who are responsible for the overall management of the system.

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A. J. HANKINSON

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MR. NUTTER: Call Case Number 6247, which is actually two applications in one.

The first is the application of Mobil Oil Corporation for a voluntary unit agreement in Lea County, New Mexico.

The second portion of the application is the application of Mobil Oil Corporation for statutory unitization of its North Vacuum Abo East Unit Area in Township 17 South, Range 35 East, Lea County, New Mexico.

MR. SPERLING: James E. Sperling of Modrall, Sperling, Roehl, Harris and Sisk, appearing for the applicant.

We'd like to request, Mr. Examiner, that the two cases to which you referred be combined for purposes of the hearing.

MR. NUTTER: Off the record.

(There followed a discussion off the record.)

MR. NUTTER: Back on the record. We have, as I mentioned, we have the two cases in Case Number 6247, one for voluntary unitization; the other for statutory unitization.

MR. SPERLING: I would like to request at this time, Mr. Examiner, that for the purposes of the hearing Case 6247 and Case 6248 be combined, consolidated.

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1 MR. NUTTER: We'll call now Case 6248, which  
2 is in the application of Mobil Oil Corporation for a pres-  
3 sure maintenance project, Lea County, New Mexico.

4 And you do have 100 percent voluntary uniti-  
5 zation in Case Number 6247, so you have requested the  
6 statutory unitization portion of that application be dis-  
7 missed.

8 MR. SPERLING: Yes, sir.

9 MR. NUTTER: And we'll proceed, then, with the  
10 hearing for the voluntary unitization and the pressure  
11 maintenance project.

12 MR. SPERLING: Yes, sir, we have two witnesses,  
13 one whose testimony will be with respect to 6247 and one  
14 with respect to 6248.

15 MR. NUTTER: Will they both stand and be  
16 sworn, please.

17 (Witnesses sworn.)

18 MR. KELLAHIN: If the Examiner please, I de-  
19 sire to enter my appearance in both these cases on behalf  
20 of Pennzoil Corporation.

21 Pennzoil Corporation is a working interest  
22 owner in the adjoining North Vacuum Abo Unit. We are an  
23 interested party in this proceeding and we don't know  
24 that we are objecting to what -- what Mobil's doing.  
25 We're seeking information at this point but we did want

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the specific procedures and protocols that must be followed when recording transactions. This includes details on how to properly document each entry, the required approvals, and the frequency of updates.

3. The third part of the document addresses the role of the accounting department in maintaining these records. It highlights the need for regular audits and reconciliations to ensure the accuracy and integrity of the data.

• **Accounting and Financial Reporting**

4. The fourth part of the document discusses the various financial reports that are generated from the accounting records. These reports provide valuable insights into the organization's financial performance and are used by management and stakeholders to make informed decisions.

5. The fifth part of the document covers the importance of timely and accurate financial reporting. It stresses that delays or inaccuracies can lead to poor decision-making and a loss of trust in the organization's financial statements.

6. The sixth part of the document addresses the role of the internal control system in ensuring the reliability of financial reporting. It describes how internal controls help to prevent and detect errors and fraud, thereby safeguarding the organization's assets.

7. The seventh part of the document discusses the impact of external audits on the organization's financial reporting. It explains how external audits provide an independent assessment of the organization's financial statements and help to enhance their credibility.

• **Internal Control System**

8. The eighth part of the document discusses the components of an effective internal control system. This includes the establishment of clear policies and procedures, the assignment of responsibilities, and the implementation of monitoring and reporting mechanisms.

9. The ninth part of the document addresses the role of the internal control system in risk management. It explains how internal controls help to identify and mitigate risks that could affect the organization's financial performance and reputation.

10. The tenth part of the document discusses the importance of a strong internal control system in building trust and confidence among stakeholders. It highlights that a robust internal control system is a key indicator of an organization's commitment to transparency and ethical conduct.

11. The eleventh part of the document addresses the challenges of implementing and maintaining an internal control system. It discusses the need for ongoing communication, training, and support to ensure that the system remains effective and up-to-date.

12. The twelfth part of the document discusses the role of the internal control system in ensuring compliance with applicable laws and regulations. It explains how internal controls help to identify and address potential compliance issues before they become a problem.

13. The thirteenth part of the document discusses the importance of a strong internal control system in supporting the organization's strategic objectives. It highlights that internal controls provide the foundation for sound decision-making and the achievement of long-term success.

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1 to participate and be able to ask the witnesses some  
2 questions about the unit.

3 MR. NUTTER: You're not sure whether you're  
4 friend or foe, is that right?

5 MR. KELLAHIN: That's right.

6 MR. SPERLING: Mr. Examiner, before we begin,  
7 at the time of the submission of the application we were  
8 one log short with respect to an injection well, and I  
9 would like to have added to the file, with respect to  
10 Case Number 6247, the log of Texaco, Inc., New Mexico  
11 State VJ No. 3 Well.

12 MR. NUTTER: Thank you, Mr. Sperling.

13  
14 E. R. FRAZIER

15 being called as a witness and having been duly sworn upon  
16 his oath, testified as follows, to-wit:

17  
18 DIRECT EXAMINATION

19 BY MR. SPERLING:

20 Q Would you please state for the record your  
21 name, your place of residence, the name of your employer,  
22 the capacity in which you are employed?

23 A Yes. I'm E. R. Frazier, employed by Mobil  
24 Oil Corporation in Houston, Texas, as Joint Interest Ad-  
25 ministrator.



1 Q What do your duties consist of in connection  
2 with being Joint Interest Administrator?

3 A Well, it consists of, among other things, of  
4 negotiating unit agreements and the preparation of unit  
5 agreements such as we're considering here today.

6 Q In that connection, Mr. Frazier, have you on  
7 any previous occasions testified as a witness before the  
8 Commission and have your qualifications in the capacity  
9 that you have described been accepted?

10 A Yes.

11 Q As a part of the application originally filed  
12 in this matter, there was submitted a copy of the unit  
13 agreement, proposed unit agreement. We have also marked  
14 the Unit Agreement as an exhibit in 6247.

15 Would you please refer to Exhibit Number One  
16 in that case at this time? And describe for the record  
17 what the Unit Agreement consists of and some of its  
18 features?

19 MR. KELLAHIN: Excuse me, Mr. Sperling, do  
20 you have an extra copy of that we might look at?

21 MR. SPERLING: Yeah, I'll get you one.

22 MR. KELLAHIN: Thank you.

23 MR. NUTTER: Is that Unit Agreement there  
24 identical with the one that was submitted with the appli-  
25 cation?

The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting. The second part details the various methods used to collect and analyze data, including surveys, interviews, and focus groups. The third part presents the findings of the study, highlighting the key trends and insights. The final part concludes with recommendations for future research and practical applications of the findings.

The study was conducted over a period of six months, during which time a large amount of data was collected and analyzed. The results of the study are presented in the following sections. The first section discusses the overall findings, while the second section provides a more detailed analysis of the data. The third section discusses the implications of the findings for practice, and the fourth section concludes with a summary of the study and recommendations for future research.

The findings of the study indicate that there is a significant need for improved financial reporting practices. This is particularly true for small and medium-sized businesses, which often lack the resources and expertise to maintain accurate records. The study also found that there is a strong correlation between the quality of financial reporting and the success of a business. This suggests that investing in financial reporting can be a highly effective way to improve business performance.

Based on these findings, several recommendations are made for future research and practice. First, it is recommended that more research be conducted on the specific challenges faced by small and medium-sized businesses in maintaining accurate records. Second, it is recommended that more resources be made available to these businesses to help them improve their financial reporting practices. Finally, it is recommended that more attention be paid to the development of financial reporting standards and practices that are specifically tailored to the needs of small and medium-sized businesses.

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MR. SPERLING: Yes, sir.

A Shall I --

Q (Mr. Sperling continuing.) Yes, go ahead.

A Exhibit One is a copy of the Unit Agreement of the North Vacuum Abo East Unit, and the Unit Agreement is for the unitization of the Abo formation only, and the interval being unitized is described in Section 2 (j), page 2 of the Unit Agreement, and that's the same interval that was described on the call of the hearing.

Exhibit "A" of the Unit Agreement is a map of the Unit Area, showing the Unit outline and the tract numbers.

Q How many acres does the unit area consist of?

A The unit consists of 865.74 acres and the working interest owners owning 100 percent of the working interests in the unit have approved the Unit Agreement and the Unit Operating Agreement.

The State of New Mexico has all the mineral interest ownership in the proposed unit and the New Mexico State Land Office has reviewed this Unit Agreement.

Exhibit Two is a letter from the Public Lands Office Oil and Gas Division, which indicates that it meets with their approval. All tracts in the unit area qualify for inclusion in the unit and there is one overriding royalty interest in Tract Seven which has also been

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1 committed to the unit.

2 I'd like to call the attention to an ipso facto  
3 termination date in Article 26, page 14 of the Unit Agree-  
4 ment. That ipso facto date was July 1, 1978, and Mobil  
5 has requested approval from the working interest owners  
6 to extend this termination date one year and working in-  
7 terest owners owing 95+ percent have approved this ex-  
8 tension, will extend the ipso facto termination date to  
9 July 1, 1979.

10 And pending approval of the Commission and  
11 the State Public Lands Office, we anticipate making the  
12 unit effective August the 1st of '78.

13 It is respectfully requested that the Com-  
14 mission approve the North Vacuum Abo East Unit as proposed  
15 in the Unit Agreement.

16 Q Do you have anything further with respect to  
17 the Unit Agreement?

18 A I don't think I have unless there's some  
19 questions.

20 Q All right.

21 MR. SPERLING: We would offer Exhibits One  
22 and Two in Case Number 6247 at this time, Mr. Examiner.

23 MR. NUTTER: Mobil Exhibits One and Two will  
24 be admitted in evidence.  
25

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CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Frazier, you mentioned that the ipso facto termination date has been proposed to be changed to 7-1-79.

A That's right.

Q Did you state that 95 percent of the working interest has --

A That's right.

Q -- approved that proposition?

A That's correct.

Q Has the State Land Office approved it yet?

A No, sir, it has not been submitted to them.

Q Uh-huh.

A I guess I overlooked that.

Q Okay.

MR. NUTTER: Are there any further questions of Mr. Frazier?

MR. KELLAHIN: If the Examiner please.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q Mr. Frazier, what if any working relationship do you have with the North Vacuum Abo Unit to the west of this subject unit?

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1           A           Mobil is the operator of that unit as well.

2           Q           Let me -- let me show you what I have marked  
3 as Pennzoil Exhibit One, and ask you if you can identify  
4 that exhibit?

5           A           Yes, I believe I can.

6           Q           That's the boundary for the North Vacuum Abo  
7 Unit that adjoins this subject unit, is it not, sir?

8           A           That appears to be, yes.

9           Q           Let me trade copies with you, Mr. Frazier.  
10 It appears from looking at this exhibit, Mr. Frazier, that  
11 the subject unit for which you seek approval consists of  
12 the south half of Section 7, the north half of Section 8,  
13 the southwest quarter of 18 and the west half of the  
14 southeast quarter of 18. Is that all of it?

15          A           Yes. That's all of it.

16          Q           As opposed to creating a new separate unit,  
17 Mr. Frazier, what if any efforts have you made to expand  
18 the existing North Vacuum Abo Unit to include this area?

19          A           Well, there was not any effort made to expand  
20 the North Vacuum Abo Unit. You want to know the reason  
21 why?

22          Q           Yes, sir.

23          A           Okay. The reason why that there had been some  
24 response already in the North Vacuum Abo Unit and we felt  
25 like it would be easier and expedite matters by forming

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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

Additionally, it is noted that the records should be kept in a secure and accessible format. Regular backups are recommended to prevent data loss in the event of a system failure or disaster.

The second section focuses on the process of reconciling accounts. It describes how to compare the internal records with the bank statements to identify any discrepancies. This step is crucial for ensuring the accuracy of the financial statements.

Any differences found should be investigated immediately to determine the cause. Common reasons include timing differences, bank errors, or missing transactions. Once the cause is identified, the records should be corrected accordingly.

The final part of the document provides guidelines for the overall management of financial records. It suggests that records should be organized chronologically and categorized by department or project. This makes it easier to find specific information when needed.

It also advises on the retention period for these records, which is typically determined by local regulations and industry standards. Proper archiving and secure storage are essential for long-term compliance.

In conclusion, maintaining accurate and organized financial records is a fundamental responsibility for any business. It not only helps in monitoring the company's financial health but also ensures compliance with legal requirements.

By following the guidelines outlined in this document, businesses can ensure that their financial data is reliable and secure.

This document is a template and should be adapted to the specific needs of your organization.

1 a new unit rather than expanding the old unit.

2 Q You indicate it would be easier. In what  
3 ways, Mr. Frazier?

4 A Well, the fact that we could -- we would nego-  
5 tiate participation for the new unit and would not have to  
6 go into all the production history, and so forth, of the  
7 unit that was already in effect, and the fact that the  
8 production -- we had production increases in the old unit.

9 Q Now, all the wells in the subject unit, they  
10 were all in existence prior to November of '76, were they  
11 not, sir?

12 A Well, that I can't say without checking the  
13 records out, but you probably know more about that than  
14 I do. I don't know offhand.

15 Q When was the last time you expanded the North  
16 Vacuum Abo Unit?

17 A Let's see, the last time was when they ex-  
18 panded it to take in the Texaco tract there in the south-  
19 east quarter of 13, and I believe at that same time there  
20 was a Shell Tract 19 -- let's see, it would be -- okay,  
21 it's now Tract 19 in the North Vacuum Abo Unit; it's in  
22 the southwest quarter of Section 10, 34 East, 17 South.  
23 Those two tracts, I believe, were expanded. I believe  
24 that's the last time it was expanded.

25 Q That expansion of the North Vacuum Abo Unit

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1. The first part of the report deals with the general situation in the country.

2. It is noted that the economy is showing signs of recovery.

3. The government has taken several steps to improve the situation.

4. It is hoped that these measures will lead to a more stable future.

5. The report also mentions the progress made in the social sector.

6. There is a need for further action to address the remaining challenges.

7. The government remains committed to the principles of justice and equality.

8. It is expected that the country will continue to progress in the coming years.

9. The report concludes with a call for continued support from the international community.

10. The author expresses confidence in the future of the nation.

11. The report is based on the latest available data.

12. It is a comprehensive overview of the current state of affairs.

13. The findings are presented in a clear and concise manner.

14. The report provides a detailed analysis of the economic trends.

15. It also highlights the achievements of the government's policies.

16. The report is a valuable resource for policymakers and the public.

17. It offers insights into the challenges facing the country.

18. The report is well-structured and easy to read.

19. It provides a clear picture of the country's economic landscape.

20. The report is a testament to the government's commitment to transparency.

21. It is a well-researched and informative document.

22. The report is a key document in the country's development process.

23. It is a reflection of the government's vision for the future.

24. The report is a model of good governance and accountability.

25. It is a source of inspiration for the people of the country.

The report is a comprehensive overview of the current state of affairs in the country. It provides a detailed analysis of the economic trends and highlights the achievements of the government's policies. The report is well-structured and easy to read, and it is a valuable resource for policymakers and the public.

1 took place about November of 1976, did it not?

2 A I believe that's probably true.

3 Q And at the time you made that expansion you  
4 had to work out different parameters for the unit itself  
5 to include those tracts.

6 A Yes, sir, I believe so.

7 Q In addition, you made investment adjustments  
8 at that time.

9 A That's correct.

10 Q Now, prior to that date, with regards to the  
11 North Vacuum Abo Unit, did you ever propose and consider  
12 the expansion of the existing unit to include any portion  
13 of that acreage now proposed for the new unit?

14 A No, it never was proposed for expansion.

15 Q To the best of your recollection, then, in  
16 August of 1973, none of this acreage now in question was  
17 considered for expansion to inclusion in the existing  
18 North Vacuum Abo Unit.

19 A You mean August of '73 or '76?

20 Q Yes, sir, I believe '73.

21 A '73?

22 Q Yes, sir.

23 A Well, to my recollection, all of these wells  
24 were not drilled then in August of '73. They're in the  
25 new unit.



1 Q To the best of your memory, none of the existing  
2 acreage now under consideration for this unit was ever  
3 proposed for inclusion in the North Vacuum Abo Unit.

4 MR. SPERLING: Not of 1973, as you asked him.

5 A I don't believe so, no.

6 Q Other than '73 at any time?

7 A We never proposed this for an expansion in  
8 '73. The reason is that this was being developed over  
9 here and I would have to, like I say, I don't recall exactly  
10 when every well was drilled, but this was developed later  
11 than the part that's in the North Vacuum Abo Unit.

12 Q If I understand you by your answer, Mr. Frazier,  
13 you then have not made any feasibility studies to consider  
14 whether the existing unit could have been expanded to  
15 include any of the acreage now under consideration?

16 A Well, I guess that would be hard to answer just  
17 yes or no. We considered that, expanding the unit, but  
18 the main reason we didn't try to expand it was the fact  
19 that we felt like it would be more expedient and that it  
20 would be more difficult to expand the unit than it would  
21 be to form a new unit.

22 Q Is the area of the North Vacuum Abo Unit and  
23 the new unit all within the Abo Pool?

24 A Yes.

25 Q You said you, in response to a question, I

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1 believe, asked earlier, that the existing unit was re-  
2 ceiving some response from the offset acreage on the east  
3 side?

4 A. No. You mean -- which unit are you talking  
5 about now?

6 Q. Well, I'm not sure and that was --

7 A. Oh.

8 Q. -- the question.

9 A. The one I'm talking about the response was in  
10 the old unit, in the North Vacuum Abo Unit.

11 Q. The North Vacuum Abo Unit as it now exists  
12 was receiving response from the injection --

13 A. In that unit. See, we haven't started in-  
14 jection in the new unit yet.

15 Q. All right. What if any lease line agreements  
16 do you anticipate between the two units in order to protect  
17 the correlative rights of each?

18 A. We anticipate protecting the correlative  
19 rights by maintaining corresponding injection wells across  
20 the line. In other words, protect the equity across the  
21 lease line of the two units, and I would suppose we would  
22 make a unit -- a cooperative agreement to that effect,  
23 but anyway, we do anticipate protecting correlative rights  
24 of the two units by corresponding injection across the  
25 two -- across the common lease line.

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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be clearly dated and described, and that the accounts should be balanced regularly to ensure their accuracy. The text also mentions the need to keep receipts and invoices as proof of transactions.

In the second part, the author provides a detailed list of items and their corresponding values. This list includes various goods such as clothing, foodstuffs, and household items, each with a specific price or value assigned to it. The items are listed in a structured manner, likely to facilitate accounting and inventory management.

The final section of the document appears to be a summary or a conclusion, reiterating the key points about record-keeping and the importance of staying organized. It may also include some final remarks or instructions regarding the use of the provided information.

Original from  
 the University of  
 Toronto

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Q Mobil, as the unit operator for the North Vacuum Abo Unit, has not called a working interest owners meeting in order to accomplish that at this point?

A That's right.

Q You've never made demand upon any of the working interest owners of the existing unit to expand, or proposed to expand, in this easterly direction?

A That's correct.

Q I don't recall exactly what you said, Mr. Frazier, you have or you have not made any economic studies to determine whether this acreage could be reasonably included in the existing unit?

A I don't believe -- to my knowledge there wasn't any economic studies made just for that purpose. There have been economic studies made for the new unit but to my knowledge we didn't compare one to the other.

Q And again, why didn't you make that comparison?

A Well, the reason is that we intend to protect the correlative rights of the two units across that common boundary and that we felt like it would be more expedient and easier to form a new unit than it would to expand the old one.

Q Do you have any particular lease problems within the acreage included in the new unit?

A Lease problems?



1 Q Yeah, you running into the end of the primary  
2 term on any of your leases?

3 A No, sir.

4 MR. KELLAHIN: Mr. Examiner, I have nothing  
5 else. Thank you, Mr. Frazier.

6 MR. NUTTER: Are there any further questions  
7 of Mr. Frazier?

8 MR. SPERLING: I have one question.

9  
10 REDIRECT EXAMINATION

11 BY MR. SPERLING:

12 Q I believe the application, Mr. Frazier, showed  
13 the percentage working interest of Mobil to have been  
14 50.05455. What is the correct working interest percentage  
15 attributable to Mobil's ownership?

16 A In the unit under discussion?

17 Q The unit under discussion, which is the North  
18 Vacuum Abo --

19 A The East unit?

20 Q Yes.

21 A It has two phases, Mr. Sperling, and the  
22 Phase One participation is 52.05455 and the Phase Two is  
23 52.32657.

24 Q What is the most significant feature with --  
25 that causes the percentage interest to vary as between

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is crucial for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent data collection procedures and the use of advanced analytical techniques to derive meaningful insights from the data.

3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and processing, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data management, such as data quality, security, and privacy. It provides strategies to mitigate these risks and ensure that the data remains reliable and secure.

5. The fifth part of the document discusses the importance of data governance and the role of various stakeholders in ensuring that data is used ethically and in compliance with relevant regulations.

6. The sixth part of the document provides a detailed overview of the data lifecycle, from data collection to data archiving and deletion. It emphasizes the need for clear policies and procedures to govern each stage of the data lifecycle.

7. The seventh part of the document discusses the role of data in decision-making and the importance of providing timely and accurate information to management and other stakeholders.

8. The eighth part of the document provides a summary of the key findings and recommendations of the study. It emphasizes the need for a comprehensive data management strategy that integrates all aspects of data collection, analysis, and governance.

9. The ninth part of the document provides a list of references and sources used in the study. It includes books, articles, and other publications that provide additional information on the topics discussed in the document.

10. The tenth part of the document provides a list of appendices and supplementary materials. These materials include detailed data sets, charts, and other information that support the findings and conclusions of the study.

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Page 1 of 10  
Date: 11/18/2012

1 Phase One and Phase Two?

2 A Well, it's almost exactly the same for Mobil.  
3 The basis of participation was Phase One was 50 percent  
4 current production and 50 percent remaining primary, and  
5 the basis of Phase Two was the ultimate primary recovery  
6 estimated from each tract.

7 Q Was -- is there any difference in the parti-  
8 cipation factor as between the existing North Vacuum Abo  
9 Unit and the proposed unit?

10 A I believe that there is a difference. I  
11 don't recall exactly what the basis was on the old unit.  
12 Do you have it there?

13 MR. KELLAHIN: Yes, sir, I believe it --

14 MR. RAINEY: I don't know whether you can read  
15 my writing. Can I read it for him?

16 MR. NUTTER: Read it into the record.

17 MR. RAINEY: Okay. The initial parameters  
18 for the -- before the unit was ever expanded, was 65 per-  
19 cent net pore -- net hydrocarbon pore volume; 17-1/2 per-  
20 cent current production, which was the first six months  
21 of '71; 17-1/2 percent remaining primary.

22 On the first expansion the parameters remained  
23 the same.

24 On the second expansion, which included the  
25 Texaco and Shell acreage, as effective on 11-1-76, the

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In the second section, the author outlines the various methods used to collect and analyze the data. This includes both manual data entry and the use of specialized software tools. The goal is to ensure that the data is both accurate and easy to interpret.

The third part of the document provides a detailed breakdown of the results. It shows that there is a clear trend in the data, which is consistent with the initial hypothesis. The author also discusses the limitations of the study and suggests areas for future research.

Finally, the document concludes with a summary of the key findings. It reiterates the importance of accurate data collection and the value of the insights gained from the analysis. The author expresses confidence in the results and hopes that they will be helpful to others in the field.

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1 parameters were 24 percent primary reserve, 38 percent  
2 ultimate primary production, and 38 percent net hydrocarbon  
3 pore volume.

4 MR. NUTTER: Would you state for the record  
5 your name, Mr. Rainey?

6 MR. RAINEY: J. C. Rainey, Petroleum Engineer  
7 with Pennzoil.

8 MR. NUTTER: Thank you.

9  
10 REXCROSS EXAMINATION

11 BY MR. NUTTER:

12 Q Mr. Frazier, in response to Mr. Sperling's  
13 question on that Mobil interest, would you repeat those  
14 figures you gave again?

15 A Okay. Phase One participation, Mobil's interest  
16 if 52.05455.

17 Q Wait just a minute, 52.0 --

18 A 5455.

19 Q Phase One, huh?

20 A Yes, sir. Phase Two is 52.32657.

21 MR. NUTTER: Did you want to amend your appli-  
22 cation, Mr. Sperling, to reflect that combined figure  
23 rather than the --

24 MR. SPERLING: Yes, we do make that request.

25 MR. NUTTER: -- figure that you gave?



1 MR. SPERLING: Yes.

2 MR. NUTTER: Okay, fine, thank you. The ap-  
3 plication is being amended.

4 Are there any further questions of Mr. Frazier?  
5 He may be excused.

6  
7 A. J. HANKINSON

8 being called as a witness and having been duly sworn upon  
9 his oath, testified as follows, to-wit:

10  
11 DIRECT EXAMINATION

12 BY MR. SPERLING:

13 Q Would you please state your name, your place  
14 of residence, your occupation, and by whom you're employed?

15 A My name is Jim Hankinson. My place of residence  
16 is now Denver, Colorado. I'm employed by Mobil Oil and  
17 I'm a Staff Engineer.

18 Q Have you on any prior occasions testified  
19 before the Commission as an expert witness and have you  
20 made your qualifications in that capacity a matter of  
21 record? And have those qualifications been accepted?

22 A Yes, sir.

23 MR. SPERLING: Is the witness considered  
24 qualified, Mr. Edaminer?

25 MR. NUTTER: Yes, he is.



1 Q (Mr. Sperling continuing.) You, as a matter  
2 of fact, were a witness at the time of the hearing on the  
3 application for approval of the North Vacuum Abo Unit,  
4 the existing unit?

5 A Yes, sir, I was.

6 Q Would you now please refer to what has been  
7 marked as Exhibit One and describe for the record what  
8 that exhibit is supposed to show?

9 MR. KELLAHIN: Excuse me, do you have another  
10 one of those?

11 MR. HANKINSON: I think so.

12 A Exhibit Number One is a map showing the well-  
13 bores in the area that we're proposing unitization and  
14 color coded to mark the reservoir that they have or are  
15 completed in. And as you will notice from this map, the  
16 red color, which is what we've used to designate the Abo  
17 formation, is rather extensive and continues on across  
18 from the older North Vacuum Abo Unit to the proposed unit  
19 area.

20 Q The legend in the lower lefthand corner of  
21 the exhibit is color coded to indicate the conclusions  
22 that you have described?

23 A Yes, sir, these are the reservoirs they have  
24 or are currently completed in.

25 Q And also shown are existing injection wells?

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2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for a systematic approach to data collection and the importance of using reliable sources of information.

3. The third part of the document focuses on the analysis and interpretation of the collected data. It discusses the various statistical techniques and models used to identify trends and patterns in the data, and how these can be used to inform decision-making.

4. The fourth part of the document discusses the importance of communication and reporting in the data analysis process. It emphasizes the need for clear and concise communication of the findings and the importance of providing regular reports to the relevant stakeholders.

5. The fifth part of the document discusses the challenges and limitations of data analysis. It highlights the need for a clear understanding of the data and the importance of being aware of the potential biases and limitations of the analysis.

6. The sixth part of the document discusses the future of data analysis and the role of technology in this field. It highlights the importance of staying up-to-date with the latest developments in data analysis and the need for a strong foundation in statistics and data science.

7. The seventh part of the document discusses the importance of ethics in data analysis. It emphasizes the need for a clear understanding of the ethical implications of data analysis and the importance of being transparent and accountable in the process.

8. The eighth part of the document discusses the importance of data security and privacy. It highlights the need for a strong security and privacy policy and the importance of protecting the data from unauthorized access and use.

9. The ninth part of the document discusses the importance of data quality and the need for a systematic approach to data collection and analysis. It emphasizes the need for a clear understanding of the data and the importance of using reliable sources of information.

10. The tenth part of the document discusses the importance of data visualization and the need for clear and concise communication of the findings. It highlights the importance of using appropriate visualization techniques to make the data more accessible and understandable.

11. The eleventh part of the document discusses the importance of data integration and the need for a clear understanding of the data and the importance of using reliable sources of information.

12. The twelfth part of the document discusses the importance of data governance and the need for a clear understanding of the data and the importance of using reliable sources of information.

13. The thirteenth part of the document discusses the importance of data literacy and the need for a clear understanding of the data and the importance of using reliable sources of information.

14. The fourteenth part of the document discusses the importance of data culture and the need for a clear understanding of the data and the importance of using reliable sources of information.

15. The fifteenth part of the document discusses the importance of data innovation and the need for a clear understanding of the data and the importance of using reliable sources of information.

1           A           Yes, both the Abo injectors and San Andres  
2 injectors.

3           Q           Okay. Now would you please refer to what's  
4 been marked as Exhibit Two and describe the purpose of  
5 that exhibit, what is shown upon it?

6           A           To clarify the situation, Exhibit Two is a  
7 map of the project showing only the wells which have  
8 penetrated the Abo or deeper horizons. It also shows the  
9 proposed injectors in the new unit area and the proposed  
10 unit well numbers.

11          Q           Now would you review for us a brief history  
12 of the North Vacuum Abo Pool in Lea County, New Mexico?

13          A           Yes, sir. The North Vacuum Abo Pool is  
14 located about 25 miles northwest of Hobbs, New Mexico,  
15 in Lea County.

16                    The first well was completed in the proposed  
17 unit interval was Mobil's Bridges-State No. 112 for a  
18 flowing potential of 312 barrels per day on June 15th,  
19 1966. The original pressure was 3230 psi and the bubble  
20 point was 2800 psi. Oil gravity is 36 API. The reservoir  
21 produces by solution gas drive, although a large portion  
22 of the field has been unitized and is under, now, pres-  
23 sure maintenance by water injection.

24                    The Mobil operated North Vacuum Abo Unit  
25 became effective 12-1-72 and has responded very favorably

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1 to water injection using a 5-spot pattern. Current pro-  
2 duction of this older unit is 4100 barrels of oil and 76  
3 barrels of water per day.

4 Q Now would you describe for us by reference to  
5 Exhibit Number Three the characteristics of the reservoir  
6 in which the proposed unit is located?

7 A Yes, sir. Exhibit Number Three is a structure  
8 map on top of the Abo pay. It's a north/south trending  
9 anticline and shows that the old unit and the new unit  
10 are on the same Abo structure, just a continuation to the  
11 east.

12 Exhibit Number Four is an east/west cross  
13 section of the Abo horizon. As you might note on the  
14 righthand side of this exhibit it shows the line of  
15 continuity or cross sectional position from Well No. 158  
16 in the North Vac Abo Unit to Mobil State JJ, to the State  
17 "U" No. 1, to the TT No. 1, and finally to the State MM  
18 No. 1.

19 The red interval is the Abo pay and where you  
20 see the interval marked with sort of a rectangular ap-  
21 pearance, this is the overall perforated interval. Within  
22 that overall interval there it's selectively perforated.

23 MR. NUTTER: I take it then that this Mobil  
24 State UU, the one that's in the center, is not perforated  
25 in the interval?

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In the second section, the author details the various methods used to collect and analyze the data. This includes both manual and automated processes. The goal is to ensure that the information gathered is both reliable and comprehensive.

The third part of the document focuses on the results of the analysis. It shows that there is a clear trend in the data, which suggests that the current strategy is effective. However, there are some areas where improvement is needed, particularly in the way resources are allocated.

Finally, the document concludes with a series of recommendations. These are based on the findings of the analysis and are designed to help the organization achieve its long-term goals. It is hoped that these suggestions will be helpful and that the organization will continue to grow and succeed.

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1 A No, sir, it is not.

2 MR. NUTTER: Okay.

3 A This shows that the structure dips to the east,  
4 as the previous exhibit showed.

5 Exhibit Number Five is a reference log of the  
6 proposed North Vacuum Abo East Unit. This is a log of  
7 Mobil's State UU Com. No. 1, a deeper Atoka-Morrow gas  
8 well. On this exhibit the unit -- proposed unit interval  
9 is defined as that point from 8420 feet to 9260 feet sub-  
10 surface.

11 I might make a few comments about the Abo  
12 It is a back reef deposit anhydritic dolomite with inter-  
13 bedded shales. The gross section is about 550 feet thick  
14 and is capped by dense dolomite. The productive interval  
15 is confined almost entirely to the upper 100 feet. The  
16 porosity within the producing interval has good continuity  
17 through the proposed unit area as shown by this cross  
18 section, Exhibit Number Five.

19 Q Now, would you furnish us with a description  
20 of the pertinent data which relate to the project which  
21 has been identified as the proposed North Vacuum Abo East  
22 Unit?

23 A The proposed unit shown on Exhibit Two covers  
24 866 productive acres and includes 11 active producing  
25 wells. Cumulative oil and gas production as of 1-1-78 was

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767,529 barrels and 762,878 Mcf respectively.

Oil producing rate for December, '77, was 293 barrels per day and the average gas/oil ratio was 1220 cubic feet per barrel. Water production was extremely small, only 2.1 percent of total fluids produced.

MR. NUTTER: How many producing wells are in that?

A. At the present time there are eleven.

Q. With respect to the production to date, would you please refer to Exhibits Six and Seven and briefly describe those for the record and what they're intended to show?

A. Yes, sir. Exhibit Number Six is a production history for the proposed unit area. The units and columns are self-explanatory.

Q. And Exhibit Seven contains the same information in different form?

A. Yes, sir. Exhibit Seven contains the same information in graphic form, showing gas/oil ratio, oil production, and water production. I would like to call your note to the water production curve. The scale that applies to the water production is on the righthand side of this curve. This means that the average water production is less than 10 barrels per day, whereas the oil production is in the range of 290 barrels per day; the gas/oil ratio

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1 is a little over 1200 cubic feet per barrel.

2 Continuing, the effective pay was estimated at  
3 18 feet. The porosity is estimated at 11.3 percent and  
4 average permeability of 1 to 2 md. The original oil in  
5 place was approximately 7,000,000 barrels and the ultimate  
6 primary recovery is estimated to be 1,000,000 barrels, or  
7 14.4 percent of the original oil in place.

8 It is estimated that the proposed unitization  
9 and water injection project will recover an additional  
10 1,000,000 barrels of oil that would not be recovered under  
11 primary means. Total recovery, primary plus secondary,  
12 is calculated to be 2,000,000 barrels with approximately  
13 29 percent of the oil in place.

14 Q Mr. Frazier made reference to tract partici-  
15 pation and the factors taken into consideration for the  
16 purpose of establishing those factors, would you elaborate  
17 on the participation a little more?

18 A All right. The tract participation was divided  
19 into two periods.

20 Q That's what you call Phase One and Two?

21 A Phase One and Phase Two. Phase One was 50  
22 percent primary reserves and current production. The  
23 primary reserves were determined by extrapolation of pri-  
24 mary decline curves and the current rate was for the period  
25 mentioned in the Unit Agreement.

...the ... of ...

Vertical text on the right margin, possibly a page number or reference.

1 Q In view of the history which you have developed  
2 by actual operation with respect to the North Vacuum Abo  
3 Unit, what would you anticipate by way of performance for  
4 the proposed unit?

5 A Well, as I mentioned, I would anticipate a  
6 recovery of an additional 1,000,000 barrels of oil, which  
7 is more or less equal to the primary recovery.

8 Q Would you describe for the record the plan of  
9 operation which is proposed mechanically for the operation  
10 of the unit? Proposed unit?

11 A Yes, sir. I'm sorry, but I forgot to mention  
12 one thing that I think is pertinent, and that's what we  
13 call our Exhibit Number Eight. This is the performance  
14 curve of the existing North Vacuum Abo Unit. I would like  
15 to discuss this very briefly to show that the current  
16 production now exceeds the primary production in this unit  
17 area. That's a little over 4000 barrels per day, whereas  
18 the peak primary from this area was averaged in the range  
19 of 3500 barrels per day. The gas/oil ratio, which is the  
20 curve with little circles, has shown a classic decrease  
21 and is currently approximately 600 cubic feet per barrel,  
22 and our produced water is a little over 80 barrels per  
23 day, which is substantially less than what was produced  
24 under primary, after injection of a little over 14-1/2  
25 million barrels of water.



1 Q Well, do I understand from that that you anti-  
2 cipate excellent results from the introduction of the pro-  
3 posed plan of operation into the East Unit area?

4 A Yes, sir, we hope that it would perform as  
5 well on a comparable size basis.

6 Q Now, describe for us the pattern, the injection  
7 pattern, that you expect to use, the source of water for  
8 the purpose of injection, the disposition of produced  
9 water, and those relevant matters pertaining to the plan  
10 of operation.

11 A Mobil plans to initiate a 5-spot water injection  
12 program using Ogallala water similar to our North Vacuum  
13 Abo project.

14 Ogallala water will be obtained from Mobil  
15 wells on the Bridges-State lease under permits authorizing  
16 usage of 1200 acre feet per year, or 25,500 barrels per  
17 day. At a later date we may consider injection of CO<sub>2</sub>  
18 or other substances. Initially, we plan to inject approxi-  
19 mately 500 barrels per day per well and we anticipate a  
20 maximum injection pressure later in the project life of  
21 4800 psi, which is below the estimated frac pressure.

22 This is in line with performance of our off-  
23 setting North Vacuum Abo Unit, which is currently oper-  
24 ating at wellhead pressures of 3700 to 4500 psi. Step  
25 rate tests that we have performed indicate that the cur-



1 rent frac pressures range from 4250 psi to 5000 psi at  
2 the North Vacuum Abo Unit.

3 Q Have you prepare an exhibit, which I believe  
4 is marked Nine, which --

5 A I believe that's Eleven?

6 Q I believe -- yeah, the step rate tests are  
7 reflected in Eleven.

8 A Right.

9 Q Yeah, refer to Eleven. I was a little out of  
10 order but I don't think it will make any difference.

11 A Exhibit Eleven is information concerning step  
12 rate tests that we've run in the Abo project supporting  
13 the maximum injection pressure of 4800 psi. The first  
14 curve behind the written work that shows more or less  
15 two parallel lines and a series of circles connected by  
16 lines, is an average by time period of the step rate tests  
17 that we've conducted within the project. For example,  
18 during the latter part of 1973 the average of our step  
19 rate tests for frac pressure indication varied from a low  
20 of around, oh, 3300 psi to a high of 3800 psi, and at each  
21 time period thereon, you can notice that these curves  
22 generally increased. The point I'm trying to make is  
23 that frac pressure increases with fill-up. As we continue  
24 to inject and put additional water in the ground, our  
25 frac pressure measurements continued to increase.

1. The first part of the document is a letter from the author to the editor.

2. The second part is a list of references.

3. The third part is a list of figures and tables.

4. The fourth part is the main text of the paper.

5. The fifth part is the conclusion.

6. The sixth part is the acknowledgments.

7. The seventh part is the appendix.

8. The eighth part is the bibliography.

9. The ninth part is the index.

10. The tenth part is the list of symbols and abbreviations.

11. The eleventh part is the list of acronyms.

12. The twelfth part is the list of footnotes.

13. The thirteenth part is the list of references.

14. The fourteenth part is the list of figures and tables.

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16. The sixteenth part is the conclusion.

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18. The eighteenth part is the appendix.

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1 MR. NUTTER: Why?

2 A This is customary. This is typical reservoir  
3 performance. The frac pressure under a depleted condition  
4 is much lower than the frac pressure under initial condi-  
5 tions.

6 MR. NUTTER: Why would this happen?

7 A The reservoir, when you inject water, you  
8 build a bubble of water around that injection well. You  
9 provide it with a reservoir pressure, and this pressure  
10 in turn pushes back, is a resistance, so the frac pressure  
11 determined under depleted conditions is not the same value  
12 as the frac pressure determined under initial conditions  
13 or under partial fill-up conditions, as you conduct your  
14 injection program.

15 MR. NUTTER: I'll have to think about that.

16 A The next curve, which shows a typical step  
17 rate test conducted on our North Vacuum Abo Unit No. 220.  
18 The point I'd like to show on this is rate increases with  
19 pressure linearally in the first part of the curve but  
20 at the point of intersection you can see that the rate  
21 continues to increase but there's only a very, very shallow  
22 increase in pressure. This means that we have exceeded  
23 the capability of the rock to contain the water and it  
24 is parted. So the intercept there represents the frac  
25 pressure determination in Well 220 at that point in time,

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1 which was December, 1975. We estimate the frac pressure  
2 to be 4150 psi.

3 The next curve is on Well 159. As you will  
4 note on the lower curve on the test dated 6-20-74, after  
5 I don't know exactly how many barrels of water injected,  
6 we determined that the frac pressure was 3500 psi surface  
7 wellhead duty. The curve above on a test some six months  
8 later, which is dated 12-3-75, we see no break in the  
9 curve, at approximately the same injection rates. There-  
10 fore, the only thing that we could conclude, since there  
11 is no break in the curve, it's linear, that the frac pres-  
12 sure is somewhat above the final pressure reading of 3950  
13 psi, meaning that in that six-month interval our frac  
14 pressure has increased approximately 450 pounds on the  
15 same well through nothing more than fill-up in our reser-  
16 voir.

17 Q Is that -- are those tests the basis for your  
18 conclusion that with injection that the frac pressures  
19 increase?

20 A Yes, sir.

21 Q Do you have anything further to add with re-  
22 spect to Exhibit Nine?

23 A You mean Eleven?

24 Q I mean Eleven.

25 A Yes, sir, I do. I'd like to point out that

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for ensuring transparency and accountability in financial operations.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to ensure the validity of the results.

3. The third part of the document describes the different types of data that can be collected and analyzed. It includes information on both quantitative and qualitative data, as well as the various sources from which data can be obtained.

4. The fourth part of the document discusses the various statistical methods and techniques used to analyze the data. It covers topics such as descriptive statistics, inferential statistics, and regression analysis.

5. The fifth part of the document describes the different types of reports and visualizations that can be used to present the results of the analysis. It includes information on tables, charts, and graphs, as well as the various software tools used to create these reports.

6. The sixth part of the document discusses the various ethical considerations and standards that must be followed when conducting research and analyzing data. It emphasizes the importance of maintaining the integrity and confidentiality of the data.

7. The seventh part of the document describes the different types of research designs and methods that can be used to collect and analyze data. It includes information on both experimental and non-experimental designs, as well as the various sampling techniques used to select participants.

8. The eighth part of the document discusses the various challenges and limitations associated with data collection and analysis. It highlights the need for careful planning and execution to ensure the success of the research.

9. The ninth part of the document describes the different types of data visualization tools and techniques that can be used to present the results of the analysis. It includes information on both traditional and modern visualization methods.

10. The tenth part of the document discusses the various applications and uses of data analysis in different fields and industries. It highlights the importance of data analysis in making informed decisions and improving organizational performance.

11. The eleventh part of the document describes the different types of data visualization tools and techniques that can be used to present the results of the analysis. It includes information on both traditional and modern visualization methods.

12. The twelfth part of the document discusses the various applications and uses of data analysis in different fields and industries. It highlights the importance of data analysis in making informed decisions and improving organizational performance.

1 in view of our very successful flood, if we are limited  
2 to a .2 psi per foot surface pressure measurement, or ap-  
3 proximately 1750 psi, it is doubtful that we will be able  
4 to inject water after about two months of operation.

5 Q Now are you making reference to Memo Number  
6 3-77 dated August 24, 1977, from the Commission to operators  
7 and attorneys?

8 A Yes, sir, I am.

9 Q Okay. Which appears to place some restraint  
10 upon surface injection pressures.

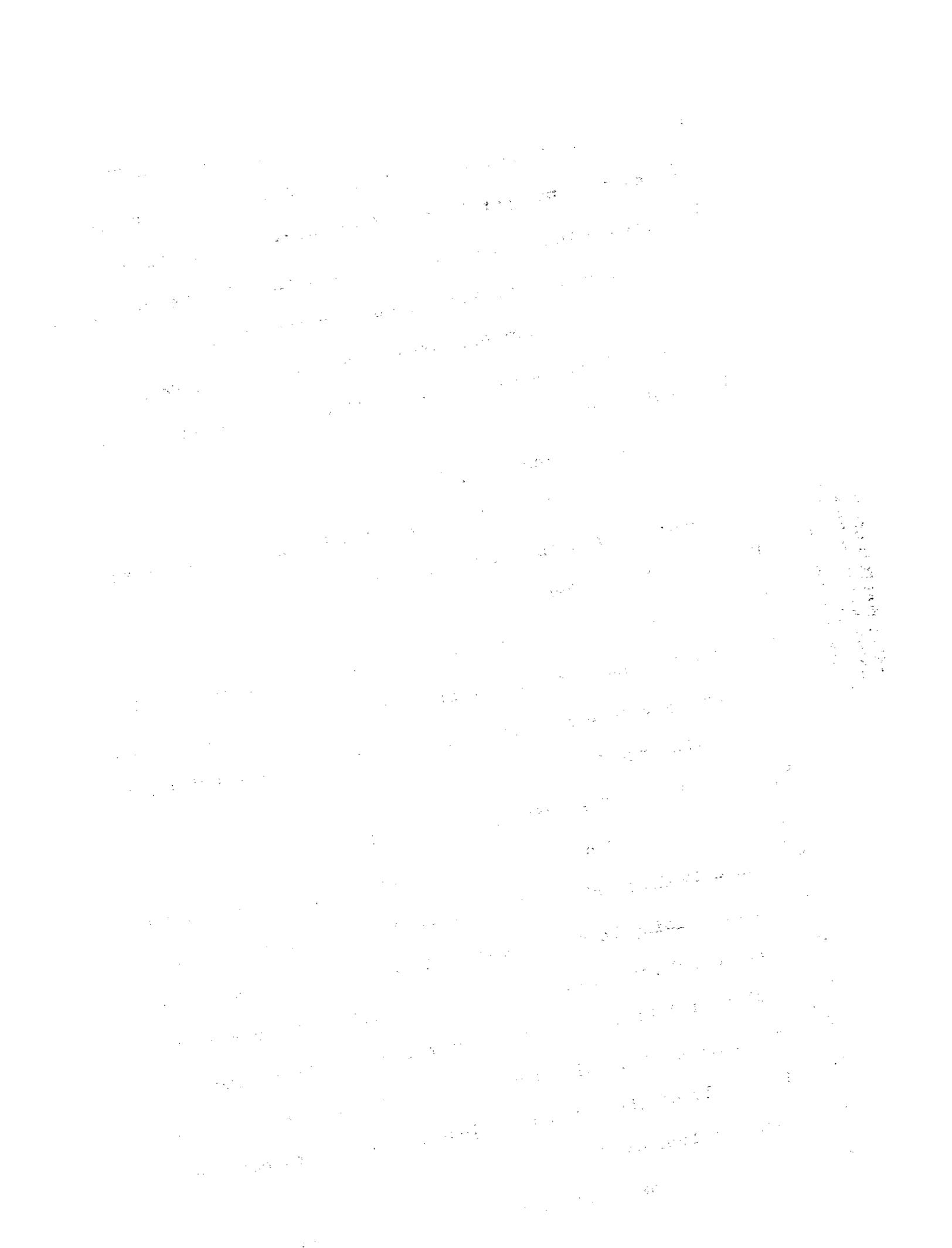
11 A Yes, sir.

12 Q And your testimony is that with respect to  
13 the proposed project, that is the East Abo Unit project,  
14 that you require relief from the requirements set forth  
15 in that memo?

16 A Yes, sir, we request it.

17 Continuing on our plan of operation, injection  
18 in a typical well will be through corrosion-resistant  
19 lined tubing below a mechanical packer. The annulus will  
20 be filled with treated fresh water and a pressure relief  
21 valve will be installed on the casing at the surface.  
22 Sketches of all wellbores penetrating the Abo within one-  
23 half mile of the proposed injectors in the project are  
24 shown on Exhibit Number Nine.

25 Q Now to complete the description of exhibits,



1 would you refer now to what's been marked as Exhibit Number  
2 Ten and explain the information contained in that exhibit  
3 and its purpose?

4 A Yes, sir, Exhibit Ten is a tabulation of the  
5 wells shown in graphic form in Exhibit Nine and does show  
6 the casing size, setting depths, volume of cement, cement  
7 tops, et cetera. It's the same information in tabular  
8 form.

9 Q Okay. What do you propose with respect to  
10 the disposition of produced water?

11 A We plan to dispose of our produced water  
12 through Mobil's waterflood project in the Vacuum-Grayburg-  
13 San Andres.

14 Q Do you have recommendations to make to the  
15 Commission with respect to the application and the proposed  
16 unit project?

17 A Yes, sir. Mobil Oil Corporation respectfully  
18 asks the Commission for the following:

19 Number 1. Approval of the North Vacuum Abo  
20 East Unit Agreement.

21 2, Approval of the plan of operation to inject  
22 fluids into the Abo formation to the five wells described  
23 in Exhibit Two at pressures not to exceed the lessor of  
24 4800 psi of wellhead pressure or frac pressure.

25 Number 3, an allowable formula to be fixed by

1947

1. The first part of the report deals with the general situation of the country and the progress of the work of the Commission. It is followed by a detailed account of the work done during the year, and a summary of the results achieved.

2. The second part of the report deals with the work done during the year, and a summary of the results achieved. It is followed by a detailed account of the work done during the year, and a summary of the results achieved.

3. The third part of the report deals with the work done during the year, and a summary of the results achieved. It is followed by a detailed account of the work done during the year, and a summary of the results achieved.

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1 the Commission to provide for a maximum daily unit allowable  
2 not to exceed the number of 80-acre proration units times  
3 the daily top unit allowable set for the wells in the North  
4 Vacuum Abo Pool; such unit allowable may be produced from  
5 any well or wells in the project area in any proportion.

6 4, Establishment of an administrative procedure, whereby the Commission may authorize the completion  
7 of the second producing well on the 80-acre proration  
8 units at unorthodox locations within said unit providing  
9 such wells are located no closer than 467 feet from the  
10 outer unit boundary, nor closer than 10 feet to any  
11 quarter quarter section or subdivision inner boundary.

12 In explanation of this, the 80-acre spacing  
13 in the large pattern areas, 160-acre 5-spot, coupled with  
14 low permeability of the reservoir and its effect on pro-  
15 ject response, may make it necessary in this area to in-  
16 fill drill producers in certain areas of the project.  
17 We're not prepared to say which area yet may require this,  
18 but it quite well may require it.

19  
20 MR. NUTTER: Have you done any infill drilling  
21 in the North Vacuum Unit?

22 A. Yes, sir, we have.

23 Number 5. That the project area be fixed as  
24 the total area within the boundaries of the said North  
25 Vacuum Abo East Unit as described in this application and



1 with further provisions that the project area may be ex-  
2 panded administratively by the Commission upon meeting  
3 the conditions set forth by the Commission.

4 Q Is the allowable formula suggested in your  
5 recommendation the same as or at variance with that which  
6 is established for the North Vacuum Abo Unit?

7 A To my knowledge, it's the same.

8 Q Do you have an opinion, Mr. Hankinson, as to  
9 whether or not the granting of the application in these  
10 cases will be in the interests of conservation, will prevent  
11 waste, and will protect correlative rights of the operators  
12 in the area?

13 A Yes, sir, we believe it will.

14 MR. SPERLING: At this time I'd like to offer  
15 Exhibits One through Eleven.

16 MR. NUTTER: Mobil Exhibits One through Eleven  
17 will be admitted in evidence.

18  
19 CROSS EXAMINATION

20 BY MR. NUTTER:

21 Q Mr. Hankinson, I missed writing the figures  
22 down when you were giving the estimated primary and  
23 secondary and total ultimate, and so forth.

24 A All right.

25 Q Would you repeat those figures again, please?

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

Furthermore, it is noted that the records should be kept in a secure and accessible format. Regular backups are recommended to prevent data loss in the event of a system failure. The document also mentions the need for periodic audits to ensure the integrity of the information.

In addition, the text highlights the role of technology in streamlining record-keeping processes. Modern accounting software can automate many tasks, reducing the risk of human error and saving valuable time. However, it is stressed that users must be properly trained to utilize these tools effectively.

Finally, the document concludes by stating that maintaining accurate records is not just a legal requirement but also a best practice for any business. It provides a solid foundation for financial analysis and decision-making.

The second part of the document provides a detailed overview of the company's financial performance over the last fiscal year. It includes a comprehensive analysis of revenue, expenses, and profit margins.

Key findings from the analysis include a steady increase in sales volume, which was offset by rising operational costs. Despite these challenges, the company managed to maintain a healthy profit margin, demonstrating strong financial resilience.

The document also identifies areas for improvement, such as optimizing the supply chain and exploring new market opportunities. It concludes with a positive outlook for the upcoming year, based on current market trends and the company's strategic initiatives.

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 Date: 2023-10-27

1 A Yes, sir, I will.

2 The estimated primary ultimate is 1,000,000,  
3 or approximately 14.4 percent of the oil in place. I  
4 estimate the secondary recovery, or rather pressure main-  
5 tenance recovery, to be an additional 1,000,000 barrels.  
6 Therefore the primary plus secondary would be 2,000,000  
7 barrels, or approximately 29 percent of the original oil  
8 in place.

9 Q Well, if I'd known they were good round numbers  
10 like this -- I had the 29 percent. That's all I had.

11 Okay, now, Mr. Hankinson, on these frac pres-  
12 sures, if you refer to your Exhibit Number Eleven, we see  
13 that the second paragraph states there that present frac  
14 pressure ranges from 4250 to 5000 psig. Now, I understand  
15 that some of this variation is due to the interval of  
16 time in which these tests were taken because, as you show  
17 in your exhibits, the frac pressure seems to go up with  
18 time and fill-up.

19 A Uh-huh.

20 Q However, there is a variation, is there not,  
21 in the reservoir at a given time? I mean every well  
22 doesn't have the same frac pressure, does it?

23 A No, sir, not all -- not exactly the same.

24 Q Well, don't you think that the Commission  
25 should restrict the injection pressures to the frac pressure

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support informed decision-making.

3. The third part of the document focuses on the role of technology in modern data management. It discusses how advanced software solutions can streamline data collection, storage, and analysis, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data security and privacy. It stresses the importance of implementing robust security measures to protect sensitive information from unauthorized access and breaches.

5. The fifth part of the document explores the ethical implications of data collection and analysis. It discusses the need for transparency in data practices and the importance of obtaining informed consent from individuals whose data is being collected.

6. The sixth part of the document provides a detailed overview of the data analysis process. It describes various statistical and analytical techniques used to extract meaningful insights from large datasets.

7. The seventh part of the document discusses the importance of data visualization in communicating complex information. It highlights how visual representations such as charts and graphs can make data more accessible and understandable for stakeholders.

8. The eighth part of the document focuses on the integration of data with other organizational systems. It discusses how data can be shared and used across different departments to improve overall organizational performance.

9. The ninth part of the document addresses the future of data management. It discusses emerging trends such as artificial intelligence and machine learning, and how these technologies will shape the way data is collected and analyzed.

10. The tenth part of the document provides a summary of the key points discussed throughout the document. It reiterates the importance of data in driving organizational success and the need for a data-driven culture.

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2023-2024

1 that's indicated in an area by the lowest pressure of any  
2 well?

3 I mean that's the breakdown pressure for the  
4 formation at some point in that reservoir around there.

5 A No, sir, I don't. I think our proposal ac-  
6 complishes what you're trying to get at, in that if we  
7 set a pressure that we've determined by actual tests or --  
8 which is this 4800 psi -- or the lessor as determined by  
9 frac pressure -- individual frac pressure tests.

10 Q You'd take a frac pressure test on every single  
11 well, then?

12 A Yes, sir, we do.

13 As you might note, our water production in  
14 the North Vacuum Abo Unit, after approximately five years  
15 of operation is 81 barrels per day.

16 Q Uh-huh, and with 14,000,000 barrels --

17 A After 14-1/2 million. We're most concerned  
18 about fracturing that reservoir and have attempted to  
19 operate at all times under frac pressure so that the  
20 water injected is confined to the Abo and does its job  
21 of displacing oil to our Abo producers.

22 Q Well, you've got such wide spacing there, it's  
23 obvious that you haven't had the complete sweep of the  
24 reservoir and one of these days you will be producing  
25 more than 80 barrels out of those wells.



1           A.       Yes, sir, absolutely, but the point I'm  
2           trying to make, I guess, is if we were fracturing these  
3           wells, one of the best things that -- not the best things,  
4           but best indicators of fracturing is rather imminent water  
5           production in one of the offset wells.

6           Q.       Or breakthrough sometimes in an inside well.

7           A.       Yes, right.

8           Q.       And you've experienced no breakthrough in any  
9           of the wells --

10          A.       No, sir.

11          Q.       --in that other unit.

12          A.       No, sir. It's our calculation both from  
13          hand calculations and from simulator studies that we  
14          have very well controlled volumetric flood that is doing  
15          what it should do.

16          Q.       I know the responses given on Exhibit Eight  
17          has been rather gratifying.

18          A.       Yes, sir, it has.

19          Q.       Those proposed rules that you had for the  
20          operation of the project, are they contained in any of  
21          these things you submitted to us here today?

22          A.       Yes, sir, they are. Now, with the exception  
23          of a little amendment on Item Two.

24          Q.       What are they in?

25                 MR. SPERLING: No, they haven't been. We

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for ensuring transparency and accountability in financial operations.

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3. The third part of the document focuses on the analysis and interpretation of the collected data. It discusses the various statistical and analytical tools used to identify trends, patterns, and anomalies in the data.

4. The fourth part of the document discusses the importance of communication and reporting in the context of data analysis. It emphasizes the need for clear and concise reports that effectively convey the findings and insights derived from the data.

5. The fifth part of the document discusses the role of technology in modern data analysis. It highlights the various software tools and platforms used to streamline data collection, analysis, and reporting processes.

6. The sixth part of the document discusses the importance of data security and privacy. It emphasizes the need for robust security measures to protect sensitive data from unauthorized access and breaches.

7. The seventh part of the document discusses the importance of data governance and compliance. It emphasizes the need for clear policies and procedures to ensure that data is collected, stored, and used in a manner that complies with relevant laws and regulations.

8. The eighth part of the document discusses the importance of data quality and accuracy. It emphasizes the need for rigorous data validation and quality control processes to ensure that the data used for analysis is reliable and accurate.

9. The ninth part of the document discusses the importance of data integration and interoperability. It emphasizes the need for seamless data exchange and integration between different systems and platforms to support comprehensive data analysis.

10. The tenth part of the document discusses the importance of data-driven decision-making. It emphasizes the need for organizations to leverage the insights derived from data analysis to inform their strategic and operational decisions.

11. The final part of the document discusses the future of data analysis and the emerging trends in the field. It highlights the growing importance of artificial intelligence, machine learning, and big data in driving data-driven insights and innovation.

1 propose to do that, right.

2 A I stand corrected.

3 MR. SPERLING: We were going to leave a copy  
4 of that with the reporter for the purpose of her being  
5 assured that she got all of this.

6 MR. NUTTER: I'd like to have a copy of it.

7 MR. SPERLING: Sure, we can certainly do  
8 that.

9 MR. NUTTER: Are there any other questions  
10 of the witness? Mr. Kellahin?

11

12 CROSS EXAMINATION

13 BY MR. KELLAHIN:

14 Q Mr. Hankinson, you testified a moment ago  
15 about one of the similarities between the unit agreement  
16 for the North Vacuum Abo and the North Vacuum East Abo,  
17 with regards to assignment of allowables.

18 Are the two unit agreements materially dif-  
19 ferent in any respect, and if so, what are they?

20 MR. FRAZIER: As far as -- may I answer that?

21 MR. NUTTER: Yes, sir. The record will show  
22 that Mr. Frazier is answering that.

23 MR. FRAZIER: Essentially there is no differ-  
24 ence between -- there's probably some difference in wording  
25 but the -- basically they're practically the same.



1 Q Let me ask you, Mr. Hankinson, on one of your  
2 exhibits you've shown the wells in both the existing unit  
3 and the proposed new unit. If you'll locate one of those  
4 for yourself.

5 Are any of the wells in the proposed new unit  
6 receiving any response from wells in the existing unit,  
7 and if so, which ones?

8 A I believe there is some degree of response  
9 indicated on the Mobil well which is called the State JJ  
10 No. 1.

11 Q In the northwest corner?

12 A Which would be proration unit H, J, --

13 Q L.

14 A -- K, L. Seven-L.

15 Q Do you know how much response it's receiving?

16 A No, sir, I don't have that well curve in  
17 front of me, but it is receiving some response.

18 Q All right. Do you have any recollection of  
19 an approximate amount of response it's receiving from the  
20 offset unit?

21 A Not specifically. I'd hate to give you a  
22 number and that not be correct.

23 Q Could you furnish that to us when you get  
24 the curve?

25 A I certainly will.

1 Q I'd appreciate that. In addition to that one  
2 well are there any other wells that are receiving responses  
3 from the existing unit?

4 A I think I'd have to refer to the production  
5 curve. There may have been more than one along that edge,  
6 but as I remember, that was the only well of any signi-  
7 ficance, where you might say there was any significant  
8 amount of oil.

9 Since Mr. Rainey is in Midland, it's quite  
10 possible that we could send production curves directly to  
11 him of those offset wells, if you would wish.

12 Q I'd appreciate it. I'd appreciate that, Mr.  
13 Hankinson, that would be just fine.

14 A All right.

15 Q Let me ask you this about your methods for  
16 calculating the participation factors on the new unit.

17 Is your method for conducting or calculating  
18 those participation factors any different from the method  
19 used to determine the participation factors on the  
20 existing unit?

21 A Method, no, formula, yes.

22 Q All right. Tell me what different formulas  
23 were used for each.

24 A Well, as you mentioned, from your own testimony,  
25 that there was 65 percent net pore volume, 17-1/2 percent,

1 and so on, whereas, in this we've testified that Phase One  
2 is 50 percent primary reserves, 50 percent current pro-  
3 duction, and Phase Two is 100 percent alternate primary.

4 Q Why did you not use the same method as in the  
5 existing unit?

6 A Because our control, our log control, the  
7 status of being more towards the edge of the reservoir,  
8 possibly higher water saturation, indicated to engineering  
9 that it may be more desirable to go on an ultimate primary  
10 basis as an indicator of secondary rather than something  
11 indicating pore volume.

12 Q Would that cause you to want to change the  
13 method of use for participation in the existing flood  
14 from the pore volume calculation to this other method?

15 A This is why we selected the method. We pre-  
16 pared a number of parameters data, ultimate, primary,  
17 oil in place estimates, and submitted these to the working  
18 interest owners, who in turn negotiated a formula of equity.

19 Q Did you conduct any studies or to your know-  
20 ledge were any studies conducted that would consider the  
21 question of expanding the existing unit to include the  
22 area under consideration for your new unit?

23 A Not complete studies. We have thought of  
24 the idea, and as Mr. Frazier pointed out, the fact that  
25 one unit has made their investment, the production is re-

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1 sponding very favorably, whereas, the other unit the  
2 production is down, they haven't made it, would cause a  
3 rather difficult time with regard to obtaining each indi-  
4 vidual's equity on a participation formula.

5 Q You're talking about in investment adjustment?

6 A Yes, that and the difference in production  
7 in time. In other words, you have production response,  
8 a significant production response in our present unit.  
9 These people have invested their money and are seeing  
10 response.

11 The new unit, there is no response. Production  
12 is down. It's under partially depleted primary and the  
13 problems involved in determining equity between those  
14 two areas with those differences we believe would require  
15 considerable more time in order to accomplish the same  
16 purpose than approaching it from a new unit concept.

17 Q Other than the factor of time, it still could  
18 be economic to expand the existing unit to include the --  
19 expand the existing unit to include the acreage under the  
20 new unit, could it not?

21 A You put the word "economic" to it, and I am  
22 not prepared to answer that. I do know that because of  
23 the pressures involved in our project the addition of  
24 lines for additional wells may not be feasible to our  
25 present wells, because of limitation of injection lines.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author outlines the various methods used to collect and analyze the data. This includes both primary and secondary data collection techniques. The primary data was gathered through direct observation and interviews with key stakeholders. Secondary data was obtained from existing reports and databases.

The third section details the statistical analysis performed on the collected data. Various tests were conducted to determine the significance of the findings. The results indicate a strong positive correlation between the variables studied. This suggests that the interventions implemented have had a significant impact on the outcomes.

The fourth section discusses the implications of the findings for future research and practice. It highlights the need for continued monitoring and evaluation to ensure the sustainability of the results. The author also provides recommendations for other organizations looking to implement similar initiatives.

Finally, the document concludes with a summary of the key points and a list of references. The author expresses gratitude to the participants and the funding organization for their support throughout the project.

Appendix A  
 Appendix B  
 Appendix C  
 Appendix D  
 Appendix E  
 Appendix F  
 Appendix G  
 Appendix H  
 Appendix I  
 Appendix J  
 Appendix K  
 Appendix L  
 Appendix M  
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 Appendix W  
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 Appendix Z

1 In other words, you may have four or five injection wells  
2 on a present injection line. It's physically impossible  
3 without substantial pressure drop to add another three or  
4 four injectors onto it. So I really am not prepared to  
5 agree with your --

6 Q In your opinion will it be more profitable for  
7 Mobil to create a new unit for this acreage as opposed to  
8 including it in an expanded participation in the existing  
9 unit?

10 A We prepared economics on the new unit and it  
11 will be profitable to all the working interest owners.  
12 I have not, as I've stated, I have not prepared economics  
13 of expanding the unit to the original --

14 Q Mobil's been the unit operator of this North  
15 Vacuum Abo Unit from its inception, has it not?

16 A That's correct.

17 Q As the unit operator, would you not think it  
18 your responsibility to conduct such kinds of analyses  
19 to determine whether it's better for expansion of the  
20 existing unit as opposed to creating the new unit? Would  
21 that not be your responsibility as the unit operator?

22 A Yes, I suppose it would be. It calls for a  
23 conclusion, I guess, and we in turn believe that it would  
24 be more advantageous to all concerned to do the method  
25 that we have, which would protect lease lines, people

SALLY WALTON BOYD  
CERTIFIED SHORTHAND REPORTER

730 Bishop's Lodge Road • Phone (505) 988-3404  
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The third section details the statistical analysis performed on the collected data. This involves the use of descriptive statistics to summarize the data and inferential statistics to test hypotheses. The results of these analyses are presented in a clear and concise manner, highlighting the key findings of the study.

Finally, the document concludes with a discussion of the implications of the findings. It suggests that the results have significant implications for the field of study and provides recommendations for further research. The author also acknowledges the limitations of the study and offers suggestions for how these can be addressed in future work.

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1 would participate equitably, we came up with a formula  
2 that they could agree with, rather than go through the  
3 expansion problems and sometimes quite lengthy negotiations  
4 required to achieve expansion.

5 Some of the original expansions were necessi-  
6 tated and were brought forth because these people partici-  
7 pated in the original unit concept, but were in the devel-  
8 opment phase and decided by -- voluntarily to keep these  
9 areas out until they were developed, but asked that they  
10 be considered in this unit at a later date. This is  
11 true of that Shell tract.

12 Q The operators and working interest owners of  
13 the new unit all participated in the existing unit.

14 MR. FRAZIER: No, that's not correct.

15 A Not true. Let's see. Elk Oil is not in the  
16 existing unit.

17 Q Are there any other exceptions?

18 A No.

19 Q Which -- what acreage is the Elk Oil acreage?

20 A This would be the -- what is called the Elk  
21 State Com No. 1 and No. 2, located in the south half of  
22 Section 18.

23 Q I see it, okay. You've not made this proposal  
24 or informed the working interest owners of the existing  
25 unit of your desire to create a new unit, have you?



1 A. This has been published in whatever papers  
2 that all the operators normally subscribe to for information  
3 with regard to the Commission activities.

4 Q. Apart from that notice you've not made any  
5 effort to contact the working interest owners of the  
6 existing unit to propose the possibility, or have them  
7 consider for a vote the possibility of expanding the  
8 existing unit to include any portion of the new unit?

9 A. No.

10 MR. KELLAHIN: Thank you very much.

11 MR. NUTTER: Are there any other questions  
12 of Mr. Hankinson?

13 He may be excused. Did you have anything  
14 further, Mr. Sperling?

15 MR. SPERLING: No, sir.

16 MR. NUTTER: Does anyone have anything they  
17 wish to offer in Case Number 6247, 6248, consolidated?

18 MR. KELLAHIN: Move the introduction of  
19 Pennzoil Exhibit One. I believe it's a duplicate of one  
20 of Mr. Sperling's exhibits.

21 MR. NUTTER: It's very close to it. Pennzoil  
22 Exhibit Number One will be admitted in evidence.

23 Does anyone have anything further to offer in  
24 either of these cases? We'll take the cases under advisement.

25 (Hearing concluded.)

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REPORTER'S CERTIFICATE

I, SALLY WALTON BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, knowledge, and skill from my notes taken at the time of the hearing.

Sally Walton Boyd, C.S.R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6247-48 heard by me on 6/7, 1978.  
[Signature] Examiner  
New Mexico Oil Conservation Commission

SALLY WALTON BOYD  
CERTIFIED SHORTHAND REPORTER  
730 Bishop's Lodge Road • Phone (505) 988-3404  
Santa Fe, New Mexico 87501

