STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF HANLEY PETROLEUM INC. FOR A DETERMINATION OF REASONABLE WELL COSTS, LEASE COUNTY, NEW MEXICO

CASE 10513

STIPULATION OF ADMISSIBILITY

Comes now Hanley Petroleum Company and Santa Fe Energy Operating Partners, L. P. by and through their respective attorneys and for purposes of this hearing stipulate to the admissibility of the following exhibits:

1. Hanley Exhibit _____:
   Letter dated June 20, 1991 from Santa FE to Hanley with order and AFE enclosed.

2. Hanley Exhibit_____:
   Letter dated June 21, 1991 from Hanley to Santa Fe concerning notice.

3. Hanley Exhibit_____:
   Letter dated June 25, 1991 from Santa Fe to Hanley advising Hanley notice election expires on July 21, 1991.

4. Santa Fe Exhibit _____:
   Letter dated July 1, 1991 from James W. Rogers of Hanley to Santa Fe requesting changes in AFE among other things.

5. Santa Fe Exhibit _____:
   Letter dated July 19, 1991 from James W. Rogers of Hanley electing to join well as a consent party per Order R-9480-B, and attaching a signed AFE.

6. Santa Fe Exhibit _____:
Letter dated August 21, 1991 from Larry Murphy of Santa Fe to Hanley rejecting Hanley's request and attaching an internal memo dated August 20, 1991.

7. Santa Fe Exhibit_____:
Letter dated November 25, 1991 from Jim Rogers of Hanley to Santa Fe.

8. Santa Fe Exhibit ____:
Letter dated December 23, 1991 from Santa Fe to Hanley with supplemental AFE and memos of 11/25/91 and 10/25/91 attached

9. Santa Fe Exhibit ____:
Letter dated December 26, 1991 from Hanley to Santa Fe with signed AFE attached.

This Stipulation was entered into this 23 day of September, 1993.

James Bruce, Esq.
Attorney for Santa Fe Operating Partners, L.P.
for and in its behalf

W. Thomas Kellahin, Esq.
Attorney for Hanley Petroleum Inc.
for and in its behalf

Santa Fe Energy Operating Partners, L.P.

Santa Fe Pacific Exploration Company
Managing General Partner

JUN 21 1991

CERTIFIED MAIL - RETURN RECEIPT

Hanley Petroleum Inc.

June 20, 1991

Hanley Petroleum, Inc.
415 West Wall, Suite 1500
Midland, Texas 79701-4473

ATTN: James W. Rogers

Re: SFEOP Cont. #NM-4257
Kachina "8" Fed Com #2
Wolfcamp test - 11,500'
W/2NW/4 Sec. 8,
T-18-S, R-33-E
Lea County, New Mexico

Dear Mr. Rogers:

Enclosed please find a copy of the Order No. R-9480-B in the matter of the De Novo Hearing for Compulsory Pooling the above described acreage.

In accordance with the order, please find enclosed Santa Fe Energy Operating Partners L.P.'s Well Cost Estimate (AFE) for the drilling of the above captioned well. Please note, Hanley has 30 days from receipt of this Well Cost Estimate to make its election to join or to be carried Non-Consent under the order.

7/21/91

If you have any questions, please do not hesitate to contact the undersigned.

Thank you in advance for your cooperation in this matter.

Sincerely yours,

SANTA FE ENERGY OPERATING PARTNERS, L.P.
By: Santa Fe Pacific Exploration Company
Managing General Partner

By: Larry Murphy
Larry Murphy, Senior Landman

LM/efw
Encls a/s

cc: Harvey E. Yates Company
P.O. Box 1933
Roswell, New Mexico 88202
ATTN: Melissa Randle

EFW2061

Permian Basin District
550 W. Texas, Suite 1330
Midland, Texas 79701
915/687-3551

HANLEY PETROLEUM INC.
ESTABLISHED 1963

415 WEST WALL, SUITE 1500/MIDLAND, TEXAS 79701-4473/915-684-6051 FAX: 915-685-1104

June 21, 1991

CERTIFIED MAIL - RETURN RECEIPT

Santa Fe Energy Operating Partners, L.P.
550 W. Texas, Suite 1330
Midland, Texas 79701

Attn: Larry Murphy
Senior Landman

RE: Purposed 11,500' Wolfcamp Test Well
W/2NW/4 Section 8, T-18-S, R-33-E,
Lea County, New Mexico

Gentlemen:

We are in receipt of your notice letter of June 20, 1991 bearing the above caption. We believe that the letter was sent prematurely inasmuch as Hanley's attorney has requested clarification from the Commission not later than 5:00 p.m. June 26, 1991 as to three matters contained in the Order. The clarification will possibly avoid having to file for a rehearing.

Therefore, we will not consider a notice letter until the Commission takes action, as requested, to clarify Order No. R-9480-B.

Yours very truly,

HANLEY PETROLEUM INC.

James W. Rogers
Vice President Land

/pjm

cc: Harvey E. Yates Company
P.O. Box 1933
Roswell, New Mexico 88202
Attn: Melissa Randle

Kellahin, Kellahin & Aubrey
P.O. Box 2265
Santa Fe, New Mexico 87504-2265
Attn: Tom Kellahin

Santa Fe Energy Operating Partners, L.P.
Santa Fe Pacific Exploration Company
Managing General Partner

RECEIVED
JUN 26 1991

Hanley Petroleum Inc.

CERTIFIED MAIL - RETURN RECEIPT

June 25, 1991

Hanley Petroleum Inc.
415 West Wall, Suite 1500
Midland, Texas 79701-4473

ATTN: James W. Rogers

Re: SFEOP Cont. #NM-4257
Kachina "8" Fed Com #2
Wolfcamp test - 11,500'
W/2NW/4 Sec. 8
T-18-S, R-33-E
Lea County, New Mexico

Dear Mr. Rogers:

Reference is made to your Letter of June 21, 1991 and my Letter of June 20, 1991.

Please be advised that my Letter of June 20, 1991 was not premature inasmuch as the Division Order No. R-9480-B affirmed and adopted the Order R-9480 dated March 29, 1991. The Commission's Order is not stayed just because of your request for rehearing.

My Letter of June 20, 1991 stands as notice that you have 30 days upon receipt to make your election. Please be advised that your election period expires on July 21, 1991.

Sincerely yours,

SANTA FE ENERGY OPERATING PARTNERS, L.P.
By: Santa Fe Pacific Exploration Company
Managing General Partner

By: Larry Murphy
Larry Murphy, Senior Landman

3

LM/efw

EFW2069

Permian Basin District
550 W. Texas, Suite 1330
Midland, Texas 79701
915/687-3551

HANLEY PETROLEUM INC.
ESTABLISHED 1983

415 WEST WALL, SUITE 1500/MIDLAND, TEXAS 79701-4473/915-684-8051 FAX: 915-685-1104

July 1, 1991

RECEIVED
JUL 1 - 1991
LAND DEPT.
MIDLAND, TX

Santa Fe Energy Operating Partners, L.P.
550 West Texas, Suite 1330
Midland, Texas 79701

Attn: Larry Murphy
Senior Landman

VD
LM LES
GG DB
LW DF
PR
File

RE: Proposed Operating Agreement
W/2NW/4 Section 8, T-18S, R-33-E
Lea County, New Mexico
SFEOP Cont. #NM-4257

Gentlemen:

Attached hereto please find a copy of a proposed form of Operating Agreement that would be acceptable to Hanley Petroleum Inc. as Non-Operator for the drilling of the 11,500' Strawn Test Well to be drilled in the SW/4NW/4 Section 8 pursuant to recent order or 9480-B of the New Mexico Oil Conservation Commission.

With regard to the AFE furnished by you, we believe it will be necessary to include production tankage thereto. We also would request that 32# 8-5/8" casing be used at depths below 2200'. Hanley would also like the option to furnish its share of tubulars in kind.

We would appreciate your review of the Operating Agreement and requested AFE changes and responding back to us no later than July 9, 1991 so that we have adequate time to make our election to either join or go non-consent under the pooling order. Inasmuch as the 30 day notice period expires on Sunday, July 21, 1991 we will assume, absent hearing from you to the contrary, that the election date will extend to Monday, July 22, 1991.

Your earliest attention to these matters would be appreciated. Should you have any questions about the Agreement or the requested changes in the AFE, please do not hesitate to call.

Yours very truly,

HANLEY PETROLEUM INC.

James W. Rogers
Vice President Land

NEW MEXICO
OIL CONSERVATION DIVISION
EXHIBIT
CASE NO.

pjm
Attachment
cc: Harvey E. Yates Company

HANLEY PETROLEUM INC.

415 WEST WALL, SUITE 1500/MIDLAND, TEXAS 79701-4473/915-684-8051 FAX: 915-685-1104

VL	TP
LM	LES
GG	DB
EW	DF
PR	DRFT
File	

July 19, 1991

RECEIVED
JUL 23 1991
LAND DEPT.
MIDLAND, TX

Santa Fe Energy Operating Partners, L.P.
Permian Basin District
550 W. Texas, Suite 1330
Midland, Texas 79701

Attn: Mr. Larry Murphy
Senior Landman

RE: SFEOP Cont. #NM-4257
Kachina "8" Fed. Com. #2
Wolfcamp Test - 11,500'
W½NW¼ Sec. 8, T-18-S, R-33-E
Lea County, New Mexico

Gentlemen:

Pursuant to your notice letter dated June 20, 1991, please find attached hereto your AFE for the captioned well which has been executed by an appropriate official of Hanley Petroleum Inc. This signifies our election to join in the drilling of the captioned well as a 50% paying participant under NMOCC Order No. R-9480-B dated June 12, 1991.

Yours very truly,

HANLEY PETROLEUM INC.

James W. Rogers
Vice President Land

/pjm

Attachment

cc: Harvey E. Yates Company
P.O. Box 1933
Roswell, New Mexico 88202
Attn: Melissa Randle

NEW MEXICO
OIL CONSERVATION DIVISION
Santa Fe EXHIBIT B

CASE NO. _____

9063

SANTA FE ENERGY RESOURCES, INC.

GENERALIZED WELL COST ESTIMATE

NAME: Kachina 8 Federal No.2
LOC: 1980' FNL & 660' FWL, Section 8-18S-33E, Lea County, New Mexico
DESC: Drill and complete a 11,500' Wolfcamp well

ACCOUNT	DESCRIPTION OF COSTS		DRY HOLE	PRODUCER
501-000	TANGIBLE WELL COSTS			
-41	CONDUCTOR CSG		3,000	3,000
-41	SURFACE CSG	13-3/8" 48.0 ppf H-40 @ 400'	9,200	9,200
-41	PROTECTION CSG	8-5/8" 24.0 ppf K-55 @ 3100'	36,804	36,804
-41	DRILLING LINER			
-41	PROD CSG	5-1/2"15.5 &17 ppf K-55 & N-80 @ 11,500'		95,763
-41	PROD LINER			
-42	TUBING	2-7/8" 6.5 ppf N-80 EUE @ 11,500'		52,000
-43	WELLHEAD		2,000	12,000
-44	PMPG UNIT			
-45	PRIME MOVER			
-50	OTHER DWN HOLE EQUIP	Packer		3,500
-50	RODS			
-50	SUBSURFACE PMPS			
-55	CSG EQUIP		640	940
-55	ELECTRICAL			
-55	MISC. TANGIBLES			1,000
-55	ROD EQUIP			
-55	TUBING EQUIP			2,000
	TOTAL TANGIBLE COSTS		51,644	216,207
541-000	LEASE FACILITY COSTS			
-50	FLOW LINES			3,000
-50	LABOR			15,000
-50	OTHER PROD EQUIP			5,000
-50	TANK FACILITIES			
	TOTAL LEASE FACILITY COSTS		0	23,000
511-000	INTANGIBLE WELL COSTS			
-21	LOCATION		16,000	16,000
-22	FENCING		1,000	4,200
-26	WTR & FUEL FOR RIG		10,000	10,000
-31	CONTRACTOR MOVING EXP			
-32	CONT FOOTAGE OR TURNKEY	$16.80/ft	193,200	193,200
-32	CONTRACTOR DAY WORK	3 @ $4500	13,500	13,500
-33	DRLG FLUID & ADDITIVES		10,000	10,000
-34	BITS & REAMERS			
-36	CORING & CORE ANALYSES			
-37	CEMENT		21,000	43,000
-39	INSPECTION & TSTG OF TANG		1,000	5,000
-41	DIRECTIONAL DRLG SURVEYS			
-42	DRILLING EQUIP RENTAL		3,000	3,000
-43	OPEN HOLE LOGGING		33,500	33,500
-44	DRILL STEM TSTG		22,000	22,000
-45	MUD LOGGING		11,000	11,000
-51	TRANSPORTATION		3,000	7,000
-52	COMPLETION UNIT			15,000
-53	COMPLETION TOOL RENTAL			4,000
-54	CASED HOLE LOGS & PERFING			6,000
-55	STIMULATION			10,000
-56	RIG SITE SUPERVISION		12,250	18,250
-72	ADMINISTRATIVE OVERHEAD		4,600	9,200
-99	FSHG TOOLS & EXPENSES			
-99	TESTING: BHP,GOR,4 PT.POT			5,000
	ABANDONMENT COST		10,000	
	OTHER INTANGIBLES			
0	CONTINGENCY (10%)		36,505	43,885
	TOTAL INTANGIBLES		401,555	482,735
	TOTAL COSTS		453,199	721,942

Drilling Dept: Darrell Roberts Date: 11/8/90

Operations Dept: [signature] Date: 11-8-90

SFER Approval By: [signature] Date: 11-8-90

Non Operator Approval By: L. D. Robbins Date: 7-19-91

L. D. Robbins, President
HANLEY PETROLEUM INC.

RETURN THIS COPY TO
SANTA FE ENERGY OPERATING PARTNERS, L.P.

Santa Fe Energy Operating Partners, L.P.

Santa Fe Pacific Exploration Company
Managing General Partner

CERTIFIED MAIL - RETURN RECEIPT

August 21, 1991

NEW MEXICO
OIL CONSERVATION DIVISION

EXHIBIT _____

CASE NO. _____

Hanley Petroleum, Inc.
415 West Wall, Suite 1500
Midland, Texas 79701

ATTN: Jim Rogers

Re: SFEOP Cont. #NM-4257
Hanley Petroleum Response
Kachina 8 Fed No. 2
Sec. 8, T-18-S, R-33-E
11,500' Wolfcamp Well
Lea County, New Mexico

Gentlemen:

In response to Hanley Petroleum's Letter dated July 1, 1991, in which three separate concerns about the drilling of the captioned well were addressed, we offer the following:

1. AFE furnished by Santa Fe dated October 8, 1990, does not include production tankage and should be included in the AFE.

   The cost estimate was prepared with the idea that the production facilities for the Kachina 8 Federal No. 1 would be utilized. This is not possible due to the different interests in the leases. In comparing the costs of today versus the original cost estimate, we find that with the reduced drilling costs of today's environment and the addition of the required production facilities, the costs are essentially the same. We still stand by the bottom-line costs for a producing well; therefore we will not submit a revised cost estimate.

2. Hanley requests that 8-5/8" 32.0 ppf K-55 casing be utilized below a depth of 2200' on the intermediate casing string.

   We propose to set 8-5/8" 24.0 ppf K-55 casing to a depth of 3100' as included in our cost estimate. Our casing design utilizes an accepted practice of designing for a collapse safety factor less than 1.0 in certain cases. We have included documentation supporting this method of casing design. The most significant argument we offer is that all of our wells and all of Meridian's wells drilled in this area since 1985, have used this identical 8-5/8" casing string and no problems have been experienced.

Permian Basin District
550 W. Texas, Suite 1330
Midland, Texas 79701
915/687-3551

3. Hanley would like the option to furnish its share of tubulars in kind.

Hanley certainly has that option, with the following provisions:

A. Payment in kind will take place after the well has been completed and total working interest charges have been calculated.

B. Payment in kind will be made in tubulars that are compatible with Santa Fe's current use requirement.

C. The pipe supplied must be new.

D. The pipe must have been fully inspected within six months of receipt, and we require copies of the documentation.

We have requisitioned the following:

450' - 13-3/8" 48.0 ppf H-40 ST&C casing
3,100' - 8-5/8" 24.0 ppf K-55 ST&C casing
5,500' - 5-1/2" 15.5 ppf K-55 LT&C casing
6,000' - 5-1/2" 17.0 ppf N-80 LT&C casing
11,500' - 2-7/8" 6.5 ppf N-80 8rd EUE tubing

Any questions should be directed to myself or Darrell Roberts. We plan to spud the subject well on approximately September 6, 1991.

Sincerely yours,

SANTA FE ENERGY OPERATING PARTNERS, L.P.
By: Santa Fe Pacific Exploration Company
Managing General Partner

By: Larry Murphy
Larry Murphy, Senior Landman

LM/efw

cc: Harvey E. Yates Company
P.O. Box 1933
Roswell, New Mexico 88202
ATTN: Melissa Randle

EFW2214

SANTA FE ENERGY RESOURCES, INC.

Midland - August 20, 1991

File: Kachina 8 Federal No. 2

Re: Hanley Petroleum Response
Kachina 8 Federal No. 2
Sec. 8, T-18S, R-33E
11,500' Wolfcamp Well
Lea County, New Mexico

Larry Murphy:

In response to Hanley Petroleum's letter dated July 1, 1991, in which three separate concerns about the drilling of the captioned well were addressed, we offer the following:

1. AFE furnished by Santa Fe dated October 8, 1990, does not include production tankage and should be included in the AFE.

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6,000'	-	5-1/2"	17.0 ppf	N-80 LT&C casing
11,500'	-	2-7/8"	6.5 ppf	N-80 8rd EUE tubing

Any questions should be directed to myself or Mike Burton. We plan to spud the subject well on approximately September 6, 1991.

Darrell Roberts

Darrell Roberts

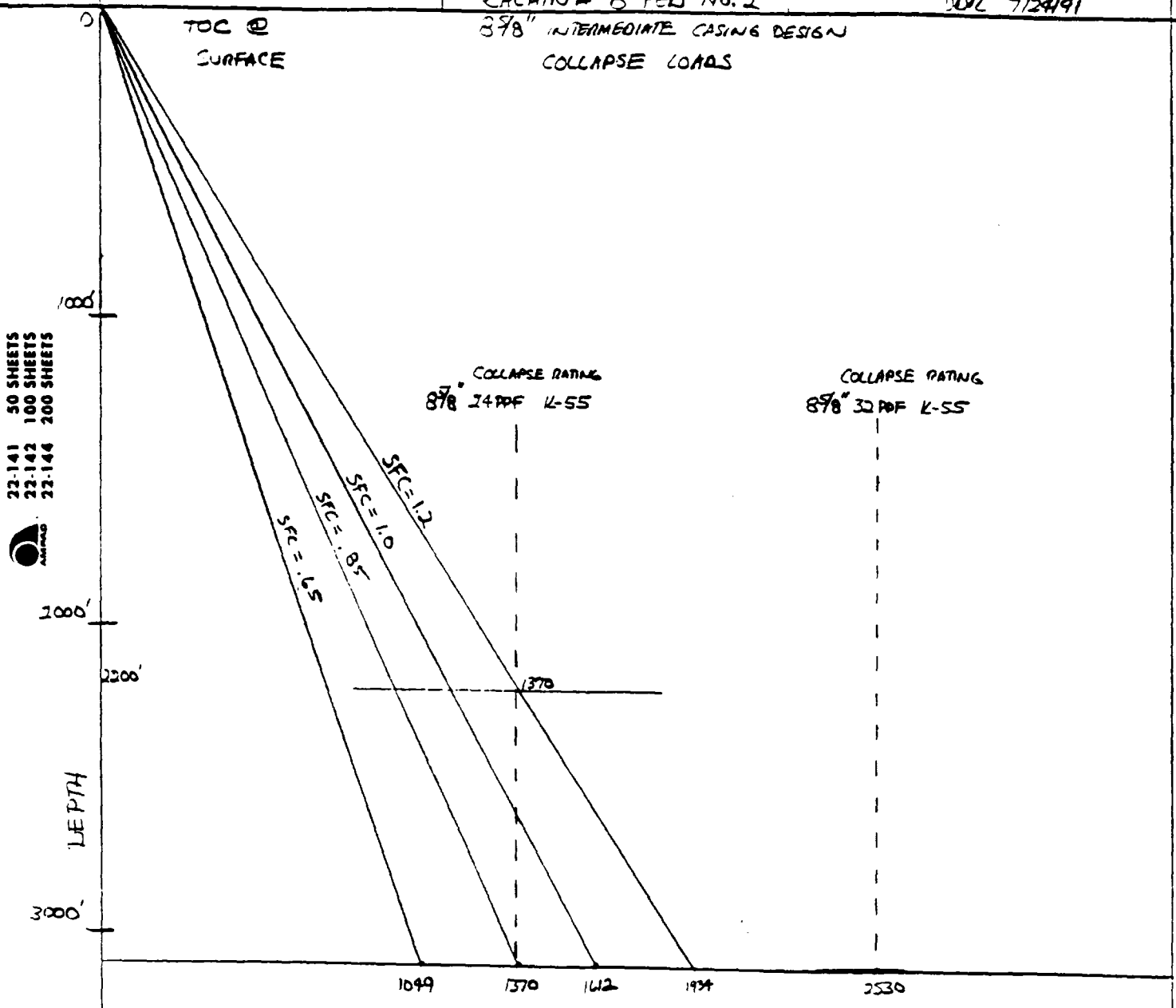
DDR:dw-2595

cc: Mike Burton
Andrew Lauden

ZACHINA 8" FED No. 2 DOR 7/24/91

8⅝" INTERMEDIATE CASING DESIGN

COLLAPSE LOADS



22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS
AMPAD

.052 X 10.0 ppg X 3100' = 1612 psi

0.85 X 1612 = 1370 psi

0.65 X 1612 = 1049 psi

24# K-55 2200' x $9.10/FT = $20,020
32# K-55 900' x $12.00/FT = $10,800
$30,820

24# K-55 3100' x $9.10/FT = $28,210

$2610 Δ

1/500 1/1000 1/1500 1/2000 1/2500 1/3000

O'BRIEN-GOINS ENGINEERING, INC.

CASING DESIGN RULES

The following outline summarizes the recommended casing and tubing design practices. The safety factors specified for collapse, burst, and tension are minimum. Formation breakdown gradients and fluid gradients, if known, should be used rather than estimated gradients. Pipe sections of less than 500 ft are not normally used in designs.

I. Surface and Intermediate Casing

A. Collapse - Based on external pressure exerted by the drilling fluid with the inside of the casing empty.

$$P_C = (0.052)\ (W_O)(D_X)$$

1. The effect of tension on collapse rating should be used when the pipe is in tension. No adjustment to collapse ratings are necessary for the pipe in axial compression which occurs from the effect of buoyancy on the lower portion of the string. Calculate the axial tension stress using equations in attached "Corrections for the Effect of Tension on Collapse" and the collapse reduction factor (K) is determined from Fig. I.

2. Collapse ratings used for 95,000 psi yield casing are equal to grade C95 in API 5C2. The collapse ratings for S95 and SS95 and S105 are an exception to this rule.

3. With the possibility of the casing being emptied, the following collapse design factors are used:

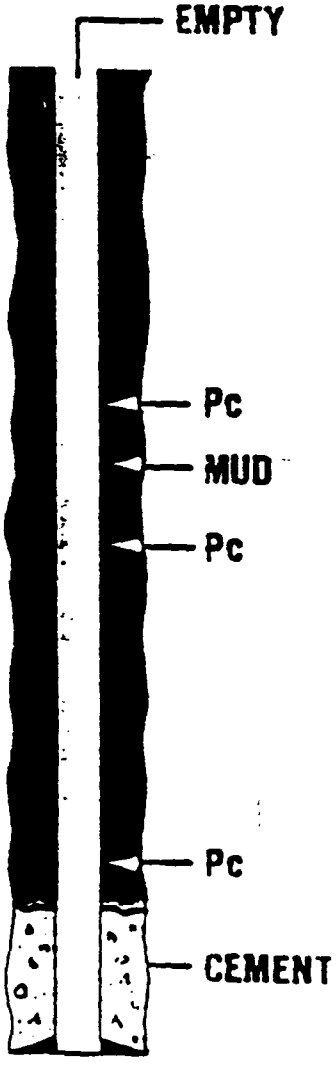
   a. SFC of 0.85 for the bottom section of pipe provided a SFC of 1.00 occurs below the cement top.

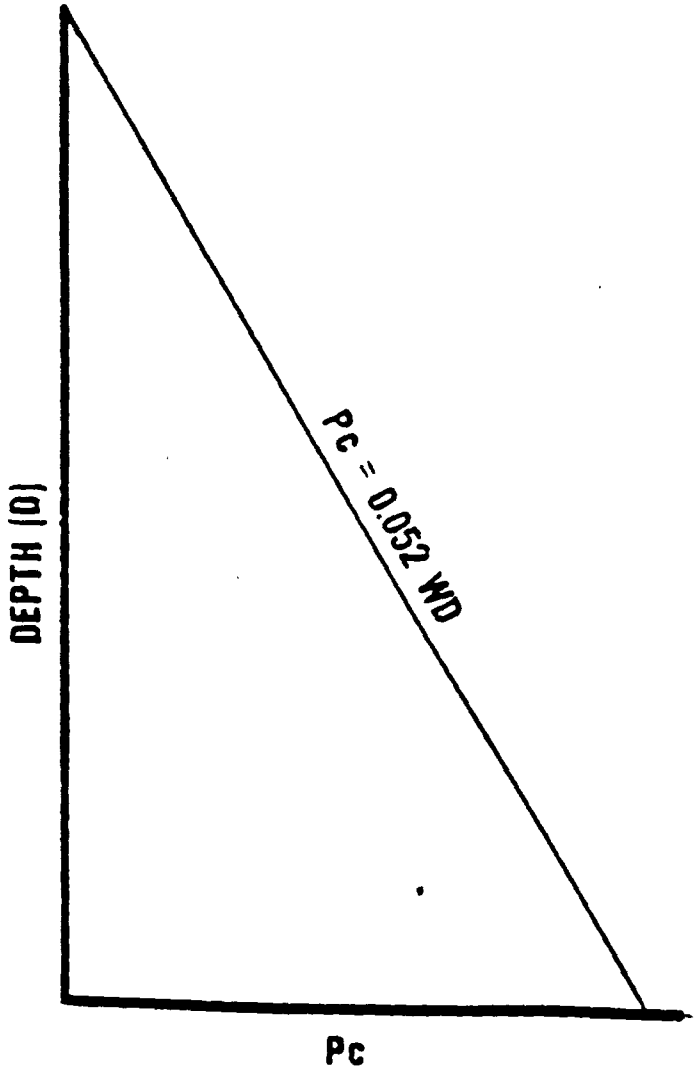
   b. SFC of 1.00 for all remaining sections above the bottom section.

4. If the casing will not be emptied, the following collapse design factors are used:

   a. SFC of 0.65 - for the lowermost section provided at least two sections of casing are below the cement top. If only one section is below the cement top a SFC of 0.85 is used.

COLLAPSE LOADS Pc





COLLAPSE

SFC

1.0 EXCEPT:

IF STRING IS INTERMEDIATE

OR SURFACE OR ~~PRODUCTION~~ HARDEN

~~STRING NEVER EMPTIED~~

THEN

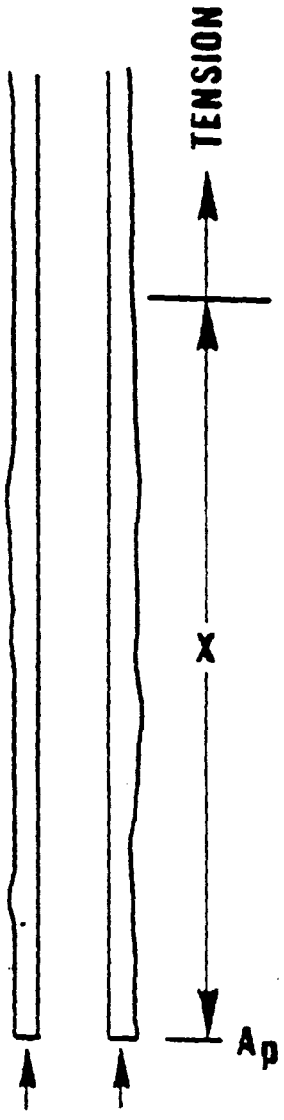
0.65 - BOTTOM SEGMENT

0.85 - NEXT SEGMENT

BUT

BOTH MUST BE <u>BELOW</u> CEMENT TOP

1.1 FOR AIR DRILLING



$P = .052\ WD$

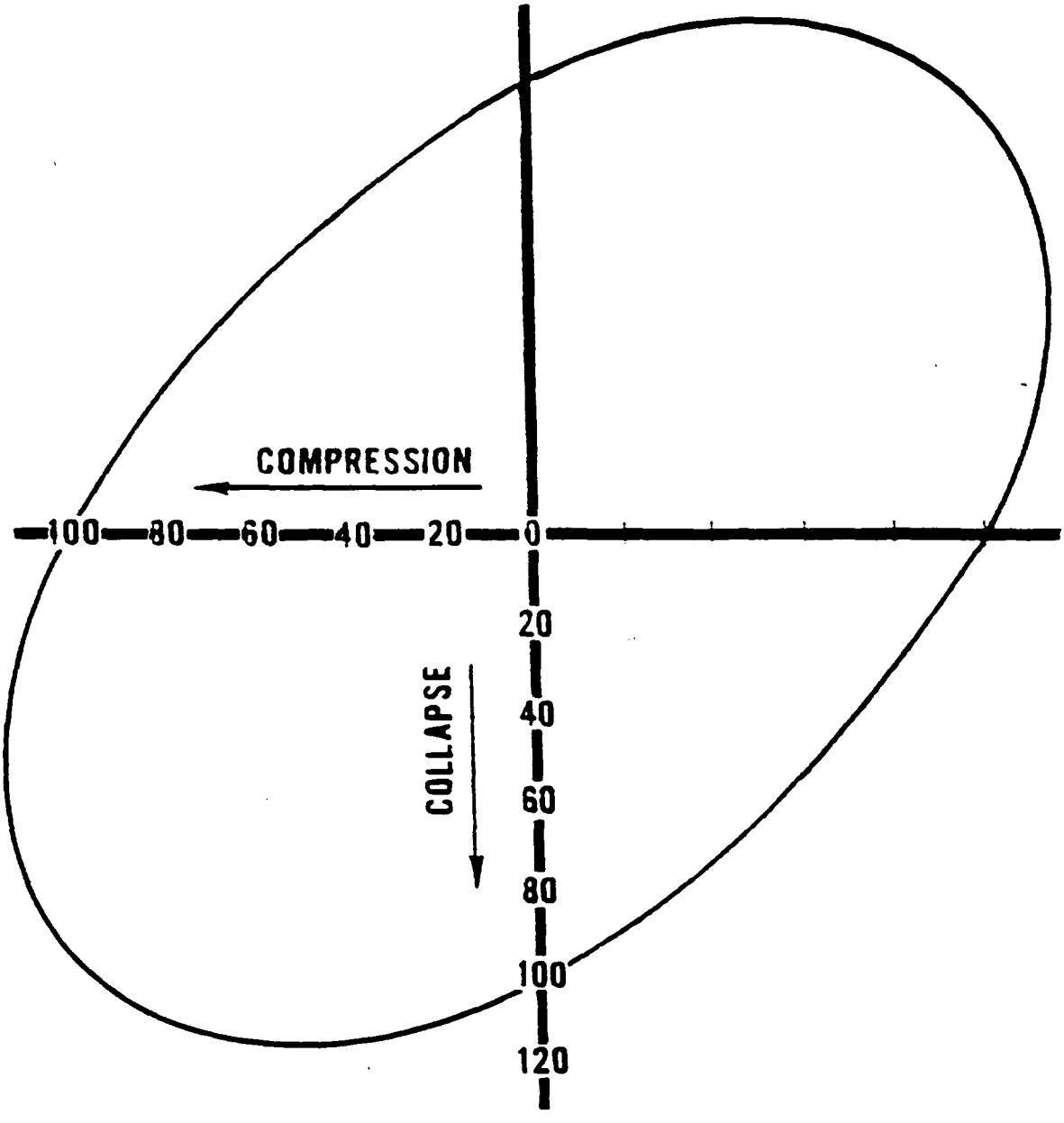
$F = .052\ WD\ A_p$

$$X = \frac{.052WDA_p}{W_s}$$

W_s = #/FT OF CASING

EFFECT OF COMPRESSION ON COLLAPSE

REASON WHY YOU CAN CHEAT ON COLLAPSE IN BOTTOM OF STRING



LUBINSKY, A: "INFLUENCE OF TENSION AND COMPRESSION ON STRAIGHTNESS AND BUCKLING OF TUBULAR GOODS IN OIL WELLS" PROC. API, SECT. IV, p 31, 1951

$$e = \frac{-2V}{E} \cdot \frac{p - R^2 P}{R - 1}$$

e = AXIAL STRAIN

V = POISSON'S RATIO

E = ELASTIC MODULUS

p = INTERNAL PRESSURE

P = EXTERNAL PRESSURE

R = OD/ID

$$Fc = \frac{(.052)(0.3)(D_2 + D_1)W}{(R^2 - 1)}$$

Fc = COMPRESSIVE FORCE

D2,D1 = STUCK POINT (CEMENT TOP), WELL TOP

W = DENSITY, PPG

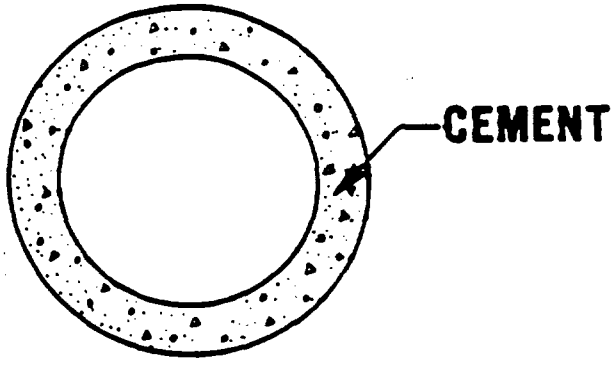
CEMENT ALSO AIDS IN
COLLAPSE STRENGTH

SAYE, J. E. & RICHARDSON, TWG

"FIELD TESTING OF CASING-STRING DESIGN FACTORS"

API DRILLING AND PRODUCTION PRACTICE.

1954 PAGE 3

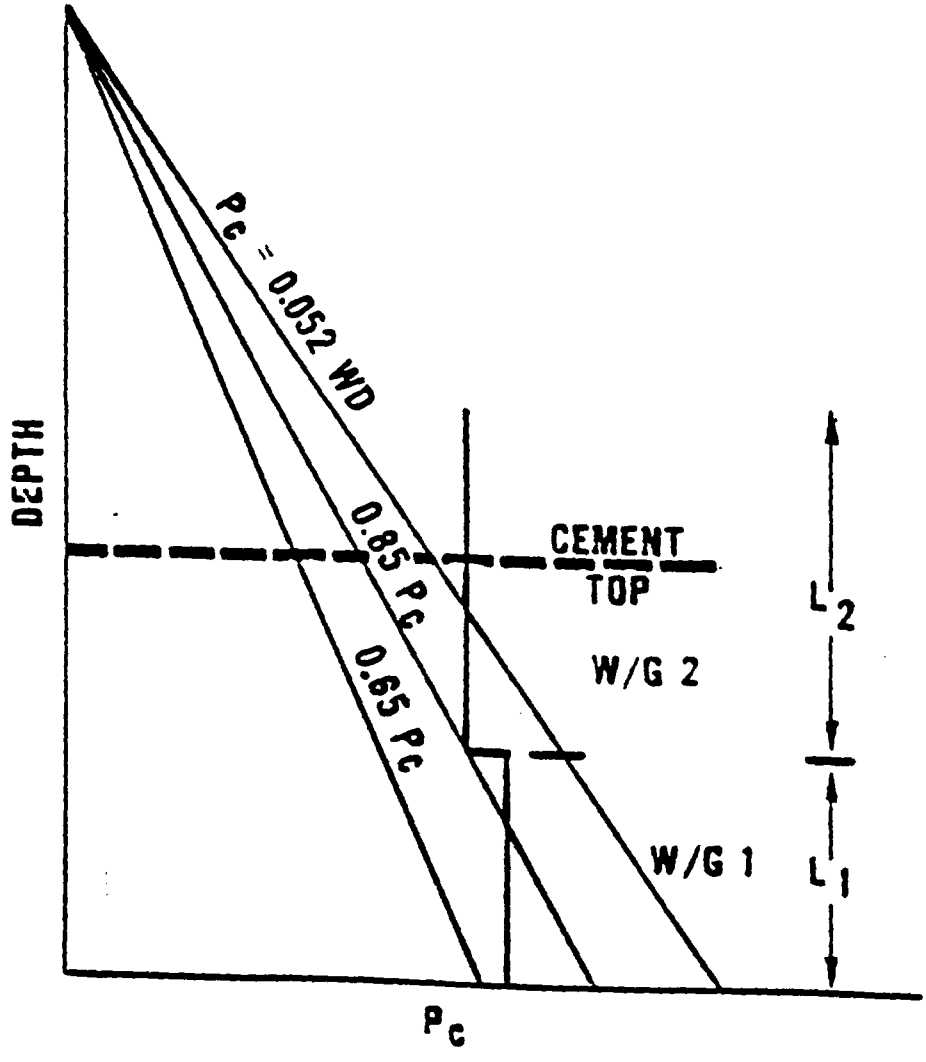


SOLES RECOMMENDATION

COLLAPSE DESIGN

(STRING NEVER EMPTIED)

NO PRODUCTION SERVICE



SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:

Hanley Petroleum, Inc.
415 West Wall, Suite 1500
Midland, Texas 79701
ATTN: Jim Rogers

4. Article Number

P 764 684 102

Type of Service:

- ☐ Registered
- ☒ Certified
- ☐ Express Mail
- ☐ Insured
- ☐ COD
- ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee

K. McDennis

6. Signature — Agent

X

7. Date of Delivery

8-23

8. Addressee's Address *(ONLY if requested and fee paid)*

415 W Wall
1500

PS Form 3811, Apr. 1989 ★U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECEIPT

HANLEY PETROLEUM INC.
ESTABLISHED 1965

415 WEST WALL, SUITE 1500/MIDLAND, TEXAS 79701-4473/915-684-8051 FAX: 915-685-1104

VD	TP
LM	LES
GG	CB
EW	FF
PR	BRFT
File	

November 25, 1991

RECEIVED
NOV 25 1991
LAND DEPT.
MIDLAND, TX

Santa Fe Energy Operating
Partners, LP
550 W. Texas, Suite 1330
Midland, Texas 79701

Attn: Larry Murphy
Senior Landman

NEW MEXICO
OIL CONSERVATION DIVISION

EXHIBIT

CASE NO.

RE: Kachina "8" Federal Com #2
11,500' Wolfcamp Test Well
W/2 NW/4, Sec. 8, T-18-S R-33-E
Lea County, New Mexico

Gentlemen:

The captioned well reached total depth on October 14, 1991. Some 42 days later, the well is presently shut in awaiting stimulation evaluation of the Wolfcamp zone in the perforated interval 11,315' - 11,343'. The drilling report indicates that the perforated zone has previously been given a breakdown treatment of 500 gallons 15% acid, plus flush, and an additional treatment of 4,500 gallons of 15% acid.

Upon further analysis, although this Wolfcamp zone in the captioned well looks similar to the equivalent zone in the Kachina "5" #1 on the porosity logs, the Kachina "8" #2 treated at even higher pressures than the Kachina "5" #1. Neither well recovered its load before swabbing dry. Apparently, the formation is closing up as is any fracture that may have been started. Any further treatment will most likely encounter the same results, unless you expect to extend a fracture into some reservoir rock, and you include some proppant to hold the fracture open. At this depth, only a super high strength proppant would work. Our estimate of treatment costs would be in the range of $22,000.00 for a 20,000 gallon gelled acid treatment, and in the range of $35,000.00 - $40,000.00 for a bauxite frac. Further stimulation would also require ten (10) days to two (2) weeks of additional rig time. The lack of response to the above treatment, the fact that the drilling samples through this interval were almost 100% chert with no visible porosity, and the CNL-LDT, DIL-MSFL logs, ELAN log and EPT-MSFL variable M log alayses indicate, without the need for additional expense and time, that this zone is tight and, therefore, has no potential to produce oil. Therefore, we would recommend against further stimulation of this zone.

In the alternative, we would recommend that you proceed to the next Wolfcamp zone and attempt a completion therein inasmuch as there has been a considerable delay for the completion of this well to this point in time.

Very truly yours,

HANLEY PETROLEUM INC.

James W. Rogers
Vice President Land

JWR/ldl

xc: Harvey E. Yates Company
Post Office Box 1933
Roswell, New Mexico 88202
Attn: Melissa Randle

Santa Fe Energy Operating Partners, L.P.

Santa Fe Pacific Exploration Company
Managing General Partner

CERTIFIED MAIL - RETURN RECEIPT

December 23, 1991

TO: WI Owners
(See Attached List)

Re: SFEOP Cont. #NM-4257
Kachina "8" Fed Com #2
W/2NW/4 Sec. 8
T-13-S, R-33-E
Lea County, New Mexico

Gentlemen:

Santa Fe Energy Operating Partners, L.P. herein proposes that the Wolfcamp "AG" Zone (11,315-343') be stimulated with across-linked 13% HCL acid.

Please find attached Santa Fe's procedure breakdown and Well Cost Estimates (AFE) for this work.

Please acknowledge your approval by signing the attached Well Cost Estimate and return one fully executed original to the undersigned.

Your prompt attention and reply is most appreciated, since the work must begin on or before December 30, 1991.

Sincerely yours,

SANTA FE ENERGY OPERATING PARTNERS, L.P.
By: Santa Fe Pacific Exploration Company
Managing General Partner

By: _____
Larry Murphy, Senior Landman

LM/efw
Encls a/s

cc: Robert Winkler
(Eng. Dept.)

NEW MEXICO
OIL CONSERVATION DIVISION
Santa Fe EXHIBIT C

CASE NO. _____

EFW2511

Permian Basin District
550 W. Texas, Suite 1330
Midland, Texas 79701
915/687-3551

WI OWNERS LIST

KACHINA "8" FEDERAL COM #2 WELL

Hanley Petroleum, Inc.
L. D. Robbins
W. L. Hanby, Jr.
James W. Rogers
Troy V. Compton
Stephen N. Castle
Joe G. Loftin
415 West Wall, Suite 1500
Midland, Texas 79701
ATTN: James W. Rogers

HEYCO Development Corporation
Explorers Petroleum Corporation
HEYCO Employees, Ltd.
Spiral, Inc.
P.O. Box 1933
Roswell, New Mexico
ATTN: Melissa Randle

James H. Yates, Inc.
Colkelan Corporation
906 S. St. Francis Drive
Suite C
Santa Fe, New Mexico 87501
ATTN: James H. Yates

EFW2512

SANTA FE ENERGY RESOURCES, INC.

SUPPLEMENT WELL COST COMPARISON

NAME: Kachina "8" Federal Com. No.2

LOC: 1830' FNL & 660' FWL, Sec 8-18S-33E, Lea County, New Mexico

DESC: Drill and Complete A 11,500' Wolfcamp well

ACCOUNT	DESCRIPTION OF COSTS	ORIGINAL	REVISED	VARIANCE $	VARIANCE %
501-000	TANGIBLE WELL COSTS				
-41	CONDUCTOR CSG	3,000		(3,000)	(100)
-41	SURFACE CSG	9,200	9,784	584	6
-41	PROTECTION CSG			0	NA
-41	INTERMEDIATE CSG	36,804	31,250	(5,554)	(15)
-41	PROD CSG	95,763	71,500	(24,263)	(25)
-41	PROD LINER			0	NA
-42	TUBING	52,000	39,100	(12,900)	(25)
-43	WELLHEAD	12,000	10,000	(2,000)	(17)
-44	PMPG UNIT			0	NA
-45	PRIME MOVER			0	NA
-50	OTHER DWN HOLE EQUIP	3,500	3,500	0	0
-50	RODS			0	NA
-50	SUBSURFACE PMPS			0	NA
-55	CSG EQUIP	940	1,250	310	33
-55	ELECTRICAL			0	NA
-55	MISC. TANGIBLES	1,000	1,000	0	0
-55	ROD EQUIP			0	NA
-55	TUBING EQUIP	2,000		(2,000)	(100)
	TOTAL TANGIBLE COSTS	216,207	167,384	(48,823)	(23)
541-000	LEASE FACILITY COSTS				
-50	FLOW LINES	3,000	3,000	0	0
-50	LABOR	15,000	15,000	0	0
-50	OTHER PROD EQUIP	5,000	20,000	15,000	300
-50	TANK FACILITIES		37,000	37,000	NA
	TOTAL LEASE FACILITY COSTS	23,000	75,000	52,000	226
511-000	INTANGIBLE WELL COSTS				
-21	LOCATION	16,000	18,415	2,415	15
-22	FENCING	4,200		(4,200)	(100)
-26	WTR & FUEL FOR RIG	10,000	14,409	4,409	44
-31	CONTRACTOR MOVING EXP			0	NA
-32	CONT FOOTAGE OR TURNKEY	193,200	160,877	(32,323)	(17)
-32	CONTRACTOR DAY WORK	13,500	31,390	17,890	133
-33	DRLG FLUID & ADDITIVES	10,000	14,366	4,366	44
-34	BITS & REAMERS		2,600	2,600	NA
-36	CORING & CORE ANALYSES			0	NA
-37	CEMENT	43,000	70,611	27,611	64
-39	INSPECTION & TSTG OF TANG	5,000	2,441	(2,559)	(51)
-41	DIRECTIONAL DRLG SURVEYS			0	NA
-42	DRILLING EQUIP RENTAL	3,000	29,992	26,992	900
-43	OPEN HOLE LOGGING	33,500	41,214	7,714	23
-44	DRILL STEM TSTG	22,000		(22,000)	(100)
-45	MUD LOGGING	11,000	8,359	(2,641)	(24)
-51	TRANSPORTATION	7,000	10,000	3,000	43
-52	COMPLETION UNIT	15,000	22,000	7,000	47
-53	COMPLETION TOOL RENTAL	4,000	8,000	4,000	100
-54	CASED HOLE LOGS & PERFING	6,000	10,000	4,000	67
-55	STIMULATION	10,000	50,000	40,000	400
-56	RIG SITE SUPERVISION	18,250	21,000	2,750	15
-72	ADMINISTRATIVE OVERHEAD	9,200	9,200	0	0
-99	FSHG TOOLS & EXPENSES			0	NA
-99	TESTING: BHP,GOR,4 PT.POT	5,000	5,000	0	0
	ABANDONMENT COST			0	NA
	OTHER INTANGIBLES			0	NA
0	CONTINGENCY (10%)	43,885	75,325	31,440	72
	TOTAL INTANGIBLES	482,735	605,199	122,464	25
	TOTAL COSTS	721,942	847,583	125,641	17

Drilling Dept: Darrell Roberts Date: 12/2/91

CAW 12-9-91

Operations Dept: _____ Date: _____

SFER Approval By: Tom E. Shelton Date: 12/2/91

Partner Approval: _____ Date: _____

Supplement is due to change in W.I. 50% to 25% for SFEOP,LP

Change in costs due to:

1. 8 5/8" casing collapse.
2. Additional stimulation of pay.
3. Addition of Battery Facilities.
   Due to lease difference with Kachina 8 #1

SANTA FE ENERGY OPERATING PARTNERS, LP
Stimulation Procedure
Wolfcamp "AG" Zone
Kachina "8" Fed Com No. 2
November 25, 1991

OBJECTIVE:

Stimulate the Wolfcamp "AG" zone (11,315-343') with cross-linked 15% HCL acid.

WELL DATA:

Reference Elevation:	KB @ 3920.5', 16.2' above GL
Correlative Log:	Schlumberger CNL-LDT dated 10-14-91
Casing:	13-3/8" 48.0 ppf @ 422', circ cmt. 8-5/8" 24.0 ppf @ 3080', circ cmt. 5-1/2" 15.5 ppf & 17.0 ppf K-55, L-80 & N-80 @ 11,480'. TOC @ 3060', good bond. 2-7/8" 6.50 ppf N-80 tbg with UNI-V packer @ 11,206'.
Stage Collar:	7,974'
PBTD:	11,392'
TD:	11,480'

CURRENT STATUS:

Well is shut-in, zone has been treated with 500 gal 15% spot acid and 4500 gal 15% NEFe HCL. Swabbing dry with 102 bbls of load left to recover. Rigged down pulling unit pending additional stimulation. See attached sequence of events.

PROCEDURE:

1. RU pulling unit, make a swab run and have water tested. Load tubing with packer fluid, release packer and POOH. RU wireline truck and perforate the Wolfcamp "AG" zone (11,315-343') 58 shots 2 JSPF with 4" casing guns, premium charges (at 90 deg - 120 deg phasing).

2. TIH with mule shoe, 1 jt 2-7/8" tailpipe, Guiberson 5-1/2" x 2-7/8" UNI V pkr and 2.3 SN on 2-7/8 6.5 ppf N-80 8rd tubing to ±11,200'. Set packer, ND BOP & RU WH. Swab the fluid level down to the SN.

3. RU BJ Services and install tree saver. Maintain 1500-2000 psi on the backside, test lines to 8000 psi. Treat with 37,000 gal 15% XL acid II-5 (cross-linked acid with 2 hr break time). Expect treatment to be 8 BPM @ 7500 psi. Flush to perfs with 68 bbls of slick KCL water.

4. Shut-in well in for 2 hours and flow and swab to test. If well flows, stabilize rate (max of 18 BOPH), run flowing gradient, shut-in for 72 hour BHP build-up.

5. Continue with Step No. 9 of the original completion procedure.

SANTA FE ENERGY OPERATING PARTNERS, LP
Kachina "8" Fed. Com No. 2
Sequence of Events

1. Spotted 500 gal 15% NEFe.

2. Perf Wolfcamp "AF" zone 11,315-343' (28') 2 JSPF (58 shots), no response.

3. Pump away acid at 1/2 BPM at 5950 psi, broke back to 5850 psi at 1/2 BPM. ISIP 5750 psi, 5 min 5550 psi, 10 min 5500 psi, 15 min 5500 psi. Shut well in, 84 BLTR.

4. SITP 4000 psi (trapped pressure). Flowed tubing down, swab 15 runs; rec 75 bbls no entry. IFL at surface. FFL at 11,000', had trace of oil on 15th run. 9 BLWTR.

5. Shut down two days.

6. 63 hr SITP 0 psi. Tag fluid at 3500'. Sand line parted. Release packer and pulled tubing. Casing on vacuum. Packer rubber cut.

7. TIH, spot acid to packer, set at 11,206'; 2-7/8" 6.5 ppf N-80 tubing. Pressure backside to 1500 psi.

8. Acidize with 4500 gal 15% NEFe HCL with 87 1.3 SG BS. Pump in at 5450 psi 1 BPM; max rate 2.5 BPM, max pressure 6500 psi. No ball action - had small breaks. ISIP 6000 psi, 5 min 5825, 10 min 5750, 15 min 5700. 183 BLWTR.

9. Made 12 swab runs, rec 64 BW. IFL at surface, FFL at 7700', 119 BLWTR. BHT 144 deg F.

cyc3239

Completion Procedure
Kachina 8" Federal Com No. 2
AFE No. J91009
October 25, 1991

OBJECTIVE:

Initial completion in the Wolfcamp "AG" zone 11,316-343'.

DIRECTIONS TO LOCATION:

Go west out of Hobbs 14 miles on Hwy 62/180, turn right onto Hwy 529. Travel west on Hwy 529, go 0.4 mile past mile marker No. 13. Turn south and go past Oxy's Field Office 0.8 miles. Turn left and go 0.3 mile east. Turn right and go 0.3 mile south through cattleguard to a large tank battery (Oxy). Turn right in the middle of the battery and travel west 1/2 mile past dry hole marker (Oxy AG No. 1). Continue west 1/2 mile to Kachina "8" Federal No. 1 battery, go southwest 1700' to location.

WELL DATA:

Reference Elevation:	KB @ 3920.5', 16.2' above GL
Correlation Log:	Schlumberger CNL-LDT dated 10-14-91
Casing:	13-3/8" 48.0 ppf @ 422', circ cmt
	8-5/8" 24.0 ppf @ 3080', circ cmt
	5-1/2" 15.5 ppg & 17.0 ppf K-55, L-80 & N-80 @ 11,480'
	Calculated TOC @ ±2000'
Stage Collar:	7974'
Float Collar:	11,395'
Total Depth:	11,480'

EQUIPMENT STATUS:

Delivery to be arranged by completion foreman.

CURRENT STATUS:

Production casing run and cemented. 1st stage cement was circulated off the stage collar at 7974'. Sufficient cement was pumped on the 2nd stage to bring cement to 2000' (to cover the 8-5/8" area of trouble at 2501'). Both displacement plugs were bumped with fresh water. 11" 3M x 7-1/16" 5M tubing head installed with 165,000 lbs on slips and seals tested to 5000 psi.

PROCEDURE:

1. MIRU PU. NU BOP. RIH with 4-3/4" tooth bit, 8 - 3-1/2" DC's, and 2-7/8" 6.4 ppf, N-80, 8rd, EUE tbg and drill out cement and stage collar at ±7974'. Test stage collar and casing to 1500 psi. POH w/tbg & BHA.

2. Install a 5-1/2" csg scraper and 4-3/4" string mill in same BHA & TIH and work through stage collar. Clean to float collar at 11,395'. Test FC and casing to 1500 psi. Acid wash tbg & 2000' of csg w/500 gal 15% acid. Reverse out. Circ hole clean and displace hole with 2% KCl water containing packer fluid additives.

3. Pull up to 11,350' and spot 500 gal double inhibited 15% HCl. POH w/tbg.

4. RU WL truck and run bond log from PBTD to TOC (est 2000') in a single run with 1000 psi on csg. Correlate to Schlumberger CNL/LDT.

5. RU and perforate the Wolfcamp "AG" zone with 4" casing guns, 2 JSPF, premium charges (at 90 or 120 deg phasing), over an interval of 11,315-11,343' (58 shots).

6. TIH w/mule shoe, 1 jt 2-7/8" tailpipe, Guiberson 5-1/2" x 2-7/8" Uni V pkr and 2.3" SN on 2-7/8" 6.5 ppf N-80 8rd tbg to ±11,200' (testing to 8000 psi above slips). Reverse acid into tbg and set pkr. ND BOP and NU WH. Pressure backside to 1500 psi. Break down perfs w/spot acid, swab back load and test (offset broke @ 3400 psi @ 1/4 BPM).

7. If required, acidize zone w/4500 gal 15% NEFe HCl, dropping 87 - 7/8", 1.3 s.g. RCNBS throughout job. Acid to contain 2 GPT I-17A, 3 GPT Acigel, 1 GPT Nine-40, 1 GPT LT-21, and 5 GPT citric acid (Western additives). (Kachina "8" Federal No. 1 was not acidized.)

8. Swab back load and test. If well flows, stabilize rate (max of 18 BOPH), run flowing gradient, shut-in for 72 hr BHP buildup.

9. A. If the zone is commercial, end procedure here.
   B. If the zone is not commercial, proceed pending go ahead from office.

<u>Wolfcamp "AF" Zone Completion (11,140-96')</u>

10. Load tbg w/2% KCl water. ND WH & NU BOP. Release pkr. Circulate hole with 2% KCl water and POH w/tbg.

11. RU WL truck and set CIBP @ ±11,300' and cap w/30' of cement.

12. TIH w/tbg open ended to ±11,200'. Circulate hole w/2% KCl water containing packer fluid additives. Spot 500 gal double inhibited 15% HCl. POH w/tbg.

13. RU WL truck and perforate the Wolfcamp "AF" zone with 4" casing guns, 1 JSPF, premium charges (at 90 deg or 120 deg phasing), 11,140-180' (41 holes), and 2 JSPF from 11,190-94' (6 holes).

14. TIH w/mule shoe, 1 jt 2-7/8" tailpipe, Guiberson 5-1/2" x 2-7/8" Uni-V pkr and 2.3" SN on 2-7/8" 6.5 ppf N-80 8rd tbg to ±11,000'. Reverse acid into tbg and set pkr. ND BOP and NU WH. Pressure backside to 1500 psi. Break down perfs w/spot acid. Swab back and test.

15. If required, acidize zone w/6500 gal NEFe HCl, dropping 70 - 7/8" 1.3 s.g. RCNBS throughout job. Acid to contain 2 GPT I-17A, 3 GPT Acigel, 1 GPT Nine-40, 1 GPT LT-21, and 5 GPT Citric Acid (Western additives).

16. Swab back load and test. If well flows, stabilize rate (m.. of 18 BPH), run flowing gradient, shut-in for 72 hr BHP buildup.

17. If the zone is commercial, we are finished. If not, there are more zones to shoot.

DDR

DDR:dw-2639

Santa Fe Energy Operating Partners, L.P.

Santa Fe Pacific Exploration Company
Managing General Partner

CERTIFIED MAIL - RETURN RECEIPT

December 23, 1991

TO: WI Owners
(See Attached List)

Re: SFEOP Cont. ~~#NM~~-4257
Kachina "8" Fed Com #2
W/2NW/4 Sec. 8
T-13-S, R-33-E
Lea County, New Mexico

Gentlemen:

Santa Fe Energy Operating Partners, L.P. herein proposes that the Wolfcamp "AG" Zone (11,315-343') be stimulated with across-linked 13% HCL acid.

Please find attached Santa Fe's procedure breakdown and Well Cost Estimates (AFE) for this work.

Please acknowledge your approval by signing the attached Well Cost Estimate and return one fully executed original to the undersigned.

Your prompt attention and reply is most appreciated, since the work must begin on or before December 30, 1991.

Sincerely yours,

SANTA FE ENERGY OPERATING PARTNERS, L.P.
By: Santa Fe Pacific Exploration Company
Managing General Partner

By: _____
Larry Murphy, Senior Landman

LM/efw
Encls a/s

cc: Robert Winkler
(Eng. Dept.)

NEW MEXICO
OIL CONSERVATION DIVISION
Santa Fe EXHIBIT C

CASE NO. _____

EFW2511

Permian Basin District
550 W. Texas, Suite 1330
Midland, Texas 79701
915/687-3551

WI OWNERS LIST

KACHINA "8" FEDERAL COM #2 WELL

Hanley Petroleum, Inc.
L. D. Robbins
W. L. Hanby, Jr.
James W. Rogers
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Joe G. Loftin
415 West Wall, Suite 1500
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ATTN: Melissa Randle

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Colkelan Corporation
906 S. St. Francis Drive
Suite C
Santa Fe, New Mexico 87501
ATTN: James H. Yates

EFW2512

SANTA FE ENERGY RESOURCES, INC.

SUPPLEMENT WELL COST COMPARISON

NAME: Kachina "8" Federal Com. No.2

LOC: 1830' FNL & 660' FWL, Sec 8-18S-33E,Lea County, New Mexico

DESC: Drill and Complete A 11,500' Wolfcamp well

ACCOUNT	DESCRIPTION OF COSTS	ORIGINAL	REVISED	VARIANCE $	VARIANCE %
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-43	WELLHEAD	12,000	10,000	(2,000)	(17)
-44	PMPG UNIT			0	NA
-45	PRIME MOVER			0	NA
-50	OTHER DWN HOLE EQUIP	3,500	3,500	0	0
-50	RODS			0	NA
-50	SUBSURFACE PMPS			0	NA
-55	CSG EQUIP	940	1,250	310	33
-55	ELECTRICAL			0	NA
-55	MISC. TANGIBLES	1,000	1,000	0	0
-55	ROD EQUIP			0	NA
-55	TUBING EQUIP	2,000		(2,000)	(100)
	TOTAL TANGIBLE COSTS	216,207	167,384	(48,823)	(23)
541-000	LEASE FACILITY COSTS				
-50	FLOW LINES	3,000	3,000	0	0
-50	LABOR	15,000	15,000	0	0
-50	OTHER PROD EQUIP	5,000	20,000	15,000	300
-50	TANK FACILITIES		37,000	37,000	NA
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-54	CASED HOLE LOGS & PERFING	6,000	10,000	4,000	67
-55	STIMULATION	10,000	50,000	40,000	400
-56	RIG SITE SUPERVISION	18,250	21,000	2,750	15
-72	ADMINISTRATIVE OVERHEAD	9,200	9,200	0	0
-99	FSNG TOOLS & EXPENSES			0	NA
-99	TESTING: BHP,GOR,4 PT.POT	5,000	5,000	0	0
	ABANDONMENT COST			0	NA
	OTHER INTANGIBLES			0	NA
0	CONTINGENCY (10%)	43,885	75,325	31,440	72
	TOTAL INTANGIBLES	482,735	605,199	122,464	25
	TOTAL COSTS	721,942	847,583	125,641	17

Drilling Dept: Darrell Roberts Date: 12/2/91

CAW 12-9-91

Operations Dept: _____ Date: _____

SFER Approval By: Don E. Stephens Date: 12/2/91

Partner Approval: _____ Date: _____

Supplement is due to change in W.I. 50% to 25% for SFEOP,LP

Change in costs due to:

1. 8 5/8" casing collapse.
2. Additional stimulation of pay.
3. Addition of Battery Facilities.
   Due to lease difference with Kachina 8 #1

SANTA FE ENERGY OPERATING PARTNERS, LP
Stimulation Procedure
Wolfcamp "AG" Zone
Kachina "8" Fed Com No. 2
November 25, 1991

OBJECTIVE:

Stimulate the Wolfcamp "AG" zone (11,315-343') with cross-linked 15% HCL acid.

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	8-5/8" 24.0 ppf @ 3080', circ cmt.
	5-1/2" 15.5 ppf & 17.0 ppf K-55, L-80 & N-80 @ 11,480'. TOC @ 3060', good bond.
	2-7/8" 6.50 ppf N-80 tbg with UNI-V packer @ 11,206'.
Stage Collar:	7,974'
PBTD:	11,392'
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CURRENT STATUS:

Well is shut-in, zone has been treated with 500 gal 15% spot acid and 4500 gal 15% NEFe HCL. Swabbing dry with 102 bbls of load left to recover. Rigged down pulling unit pending additional stimulation. See attached sequence of events.

PROCEDURE:

1. RU pulling unit, make a swab run and have water tested. Load tubing with packer fluid, release packer and POOH. RU wireline truck and perforate the Wolfcamp "AG" zone (11,315-343') 58 shots 2 JSPF with 4" casing guns, premium charges (at 90 deg - 120 deg phasing).

2. TIH with mule shoe, 1 jt 2-7/8" tailpipe, Guiberson 5-1/2" x 2-7/8" UNI V pkr and 2.3 SN on 2-7/8 6.5 ppf N-80 8rd tubing to ±11,200'. Set packer, ND BOP & RU WH. Swab the fluid level down to the SN.

3. RU BJ Services and install tree saver. Maintain 1500-2000 psi on the backside, test lines to 8000 psi. Treat with 37,000 gal 15% XL acid II-5 (cross-linked acid with 2 hr break time). Expect treatment to be 8 BPM @ 7500 psi. Flush to perfs with 68 bbls of slick KCL water.

4. Shut-in well in for 2 hours and flow and swab to test. If well flows, stabilize rate (max of 18 BOPH), run flowing gradient, shut-in for 72 hour BHP build-up.

5. Continue with Step No. 9 of the original completion procedure.

SANTA FE ENERGY OPERATING PARTNERS, LP
Kachina "8" Fed. Com No. 2
Sequence of Events

1. Spotted 500 gal 15% NEFe.

2. Perf Wolfcamp "AF" zone 11,315-343' (28') 2 JSPF (58 shots), no response.

3. Pump away acid at 1/2 BPM at 5950 psi, broke back to 5850 psi at 1/2 BPM. ISIP 5750 psi, 5 min 5550 psi, 10 min 5500 psi, 15 min 5500 psi. Shut well in, 84 BLTR.

4. SITP 4000 psi (trapped pressure). Flowed tubing down, swab 15 runs; rec 75 bbls no entry. IFL at surface. FFL at 11,000', had trace of oil on 15th run. 9 BLWTR.

5. Shut down two days.

6. 63 hr SITP 0 psi. Tag fluid at 3500'. Sand line parted. Release packer and pulled tubing. Casing on vacuum. Packer rubber cut.

7. TIH, spot acid to packer, set at 11,206'; 2-7/8" 6.5 ppf N-80 tubing. Pressure backside to 1500 psi.

8. Acidize with 4500 gal 15% NEFe HCL with 87 1.3 SG BS. Pump in at 5450 psi 1 BPM; max rate 2.5 BPM, max pressure 6500 psi. No ball action - had small breaks. ISIP 6000 psi, 5 min 5825, 10 min 5750, 15 min 5700. 183 BLWTR.

9. Made 12 swab runs, rec 64 BW. IFL at surface, FFL at 7700', 119 BLWTR. BHT 144 deg F.

cyc3239

Completion Procedure
Kachina 8" Federal Com No. 2
AFE No. 391009
October 25, 1991

OBJECTIVE:

Initial completion in the Wolfcamp "AG" zone 11,316-343'.

DIRECTIONS TO LOCATION:

Go west out of Hobbs 14 miles on Hwy 62/180, turn right onto Hwy 529. Travel west on Hwy 529, go 0.4 mile past mile marker No. 13. Turn south and go past Oxy's Field Office 0.8 miles. Turn left and go 0.3 mile east. Turn right and go 0.3 mile south through cattleguard to a large tank battery (Oxy). Turn right in the middle of the battery and travel west 1/2 mile past dry hole marker (Oxy AG No. 1). Continue west 1/2 mile to Kachina "8" Federal No. 1 battery, go southwest 1700' to location.

WELL DATA:

Reference Elevation:	KB @ 3920.5', 16.2' above GL
Correlation Log:	Schlumberger CNL-LDT dated 10-14-91
Casing:	13-3/8" 48.0 ppf @ 422', circ cmt
	8-5/8" 24.0 ppf @ 3080', circ cmt
	5-1/2" 15.5 ppg & 17.0 ppf K-55, L-80 & N-80 @ 11,480'
	Calculated TOC @ ±2000'
Stage Collar:	7974'
Float Collar:	11,395'
Total Depth:	11,480'

EQUIPMENT STATUS:

Delivery to be arranged by completion foreman.

CURRENT STATUS:

Production casing run and cemented. 1st stage cement was circulated off the stage collar at 7974'. Sufficient cement was pumped on the 2nd stage to bring cement to 2000' (to cover the 8-5/8" area of trouble at 2501'). Both displacement plugs were bumped with fresh water. 11" 3M x 7-1/16" 5M tubing head installed with 165,000 lbs on slips and seals tested to 5000 psi.

PROCEDURE:

1. MIRU PU. NU BOP. RIH with 4-3/4" tooth bit, 8 - 3-1/2" DC's, and 2-7/8" 6.4 ppf, N-80, 8rd, EUE tbg and drill out cement and stage collar at ±7974'. Test stage collar and casing to 1500 psi. POH w/tbg & BHA.

2. Install a 5-1/2" csg scraper and 4-3/4" string mill in same BHA & TIH and work through stage collar. Clean to float collar at 11,395'. Test FC and casing to 1500 psi. Acid wash tbg & 2000' of csg w/500 gal 15% acid. Reverse out. Circ hole clean and displace hole with 2% KCl water containing packer fluid additives.

3. Pull up to 11,350' and spot 500 gal double inhibited 15% HCl. POH w/tbg.

4. RU WL truck and run bond log from PBTD to TOC (est 2000') in a single run with 1000 psi on csg. Correlate to Schlumberger CNL/LDT.

5. RU and perforate the Wolfcamp "AG" zone with 4" casing guns, 2 JSPF, premium charges (at 90 or 120 deg phasing), over an interval of 11,315-11,343' (58 shots).

6. TIH w/mule shoe, 1 jt 2-7/8" tailpipe, Guiberson 5-1/2" x 2-7/8" Uni V pkr and 2.3" SN on 2-7/8" 6.5 ppf N-80 8rd tbg to ±11,200' (testing to 8000 psi above slips). Reverse acid into tbg and set pkr. ND BOP and NU WH. Pressure backside to 1500 psi. Break down perfs w/spot acid, swab back load and test (offset broke @ 3400 psi @ 1/4 BPM).

7. If required, acidize zone w/4500 gal 15% NEFe HCl, dropping 87 - 7/8", 1.3 s.g. RCNBS throughout job. Acid to contain 2 GPT I-17A, 3 GPT Acigel, 1 GPT Nine-40, 1 GPT LT-21, and 5 GPT citric acid (Western additives). (Kachina "8" Federal No. 1 was not acidized.)

8. Swab back load and test. If well flows, stabilize rate (max of 18 BOPH), run flowing gradient, shut-in for 72 hr BHP buildup.

9. A. If the zone is commercial, end procedure here.
   B. If the zone is not commercial, proceed pending go ahead from office.

<u>Wolfcamp "AF" Zone Completion (11,140-96')</u>

10. Load tbg w/2% KCl water. ND WH & NU BOP. Release pkr. Circulate hole with 2% KCl water and POH w/tbg.

11. RU WL truck and set CIBP @ ±11,300' and cap w/30' of cement.

12. TIH w/tbg open ended to ±11,200'. Circulate hole w/2% KCl water containing packer fluid additives. Spot 500 gal double inhibited 15% HCl. POH w/tbg.

13. RU WL truck and perforate the Wolfcamp "AF" zone with 4" casing guns, 1 JSPF, premium charges (at 90 deg or 120 deg phasing), 11,140-180' (41 holes), and 2 JSPF from 11,190-94' (6 holes).

14. TIH w/mule shoe, 1 jt 2-7/8" tailpipe, Guiberson 5-1/2" x 2-7/8" Uni-V pkr and 2.3" SN on 2-7/8" 6.5 ppf N-80 8rd tbg to ±11,000'. Reverse acid into tbg and set pkr. ND BOP and NU WH. Pressure backside to 1500 psi. Break down perfs w/spot acid. Swab back and test.

15. If required, acidize zone w/6500 gal NEFe HCl, dropping 70 - 7/8" 1.3 s.g. RCNBS throughout job. Acid to contain 2 GPT I-17A, 3 GPT Acigel, 1 GPT Nine-40, 1 GPT LT-21, and 5 GPT Citric Acid (Western additives).

16. Swab back load and test. If well flows, stabilize rate (max of 18 BPH), run flowing gradient, shut-in for 72 hr BHP buildup.

17. If the zone is commercial, we are finished. If not, there are more zones to shoot.

DDR

DDR:dw-2639

HANLEY PETROLEUM INC.
ESTABLISHED 1983
415 WEST WALL, SUITE 1500/MIDLAND, TEXAS 79701-4473/915-684-8051 FAX: 915-685-1104

VD TP
LM LES
GG
EV
PR
File

December 26, 1991
VIA TELEFAX

RECEIVED
DEC 27 1991
LAND DEPT.
MIDLAND, TX

Santa Fe Energy Operating Partners, L.P.
550 W. Texas, Suite 1330
Midland, Texas 79701

Attn: Mr. Larry Murphy
Senior Landman

SFEOP Cont. #NM-4257
Kachina "8" Com. #2
W½ NW¼ Sec. 8, T-18-S
R-33-E, Lea County,
New Mexico (HPI NM-43)

Gentlemen:

Enclosed is executed copy of Supplemental AFE for the captioned well in the amount of $125,641. The AFE has been executed this date by L. D. Robbins as President of Hanley Petroleum Inc. et al and includes authorization for L. D. Robbins, W. L. Hanley, Jr., Jim W. Rogers, Troy V. Compton, Stephen N. Castle and Joe G. Loftin.

It is our understanding that this work will commence on or before December 30, 1991 and continue in a continuous manner until the well is completed.

Should you need anything further with regard to this matter, please advise.

Yours very truly,

James W. Rogers
Vice President Land

JWR:elr
Encl.

NEW MEXICO
OIL CONSERVATION DIVISION
Santa Fe EXHIBIT D
CASE NO. _____

SANTA FE ENERGY RESOURCES, INC.

SUPPLEMENT WELL COST COMPARISON

NAME: Kachina "8" Federal Com. No.2

LOC: 1830' FNL & 660' FWL, Sec 8-18S-33E,Lea County, New Mexico

DESC: Drill and Complete A 11,500' Wolfcamp well

ACCOUNT	DESCRIPTION OF COSTS	ORIGINAL	REVISED	VARIANCE $	VARIANCE %
501-000	TANGIBLE WELL COSTS				
-41	CONDUCTOR CSG	3,000		(3,000)	(100)
-41	SURFACE CSG	9,200	9,784	584	6
-41	PROTECTION CSG			0	NA
-41	INTERMEDIATE CSG	36,804	31,250	(5,554)	(15)
-41	PROD CSG	95,763	71,500	(24,263)	(25)
-41	PROD LINER			0	NA
-42	TUBING	52,000	39,100	(12,900)	(25)
-43	WELLHEAD	12,000	10,000	(2,000)	(17)
-44	PMPG UNIT			0	NA
-45	PRIME MOVER			0	NA
-50	OTHER DWN HOLE EQUIP	3,500	3,500	0	0
-50	RODS			0	NA
-50	SUBSURFACE PMPS			0	NA
-55	CSG EQUIP	940	1,250	310	33
-55	ELECTRICAL			0	NA
-55	MISC. TANGIBLES	1,000	1,000	0	0
-55	ROD EQUIP			0	NA
-55	TUBING EQUIP	2,000		(2,000)	(100)
	TOTAL TANGIBLE COSTS	216,207	167,384	(48,823)	(23)
541-000	LEASE FACILITY COSTS				
-50	FLOW LINES	3,000	3,000	0	0
-50	LABOR	15,000	15,000	0	0
-50	OTHER PROD EQUIP	5,000	20,000	15,000	300
-50	TANK FACILITIES		37,000	37,000	NA
	TOTAL LEASE FACILITY COSTS	23,000	75,000	52,000	226
511-000	INTANGIBLE WELL COSTS				
-21	LOCATION	16,000	18,415	2,415	15
-22	FENCING	4,200		(4,200)	(100)
-26	WTR & FUEL FOR RIG	10,000	14,409	4,409	44
-31	CONTRACTOR MOVING EXP			0	NA
-32	CONT FOOTAGE OR TURNKEY	193,200	160,877	(32,323)	(17)
-32	CONTRACTOR DAY WORK	13,500	31,390	17,890	133
-33	DRLG FLUID & ADDITIVES	10,000	14,366	4,366	44
-34	BITS & REAMERS		2,600	2,600	NA
-36	CORING & CORE ANALYSES			0	NA
-37	CEMENT	43,000	70,611	27,611	64
-39	INSPECTION & TSTG OF TANG	5,000	2,441	(2,559)	(51)
-41	DIRECTIONAL DRLG SURVEYS			0	NA
-42	DRILLING EQUIP RENTAL	3,000	29,992	26,992	900
-43	OPEN HOLE LOGGING	33,500	41,214	7,714	23
-44	DRILL STEM TSTG	22,000		(22,000)	(100)
-45	MUD LOGGING	11,000	8,359	(2,641)	(24)
-51	TRANSPORTATION	7,000	10,000	3,000	43
-52	COMPLETION UNIT	15,000	22,000	7,000	47
-53	COMPLETION TOOL RENTAL	4,000	8,000	4,000	100
-54	CASED HOLE LOGS & PERFING	6,000	10,000	4,000	67
-55	STIMULATION	10,000	50,000	40,000	400
-56	RIG SITE SUPERVISION	18,250	21,000	2,750	15
-72	ADMINISTRATIVE OVERHEAD	9,200	9,200	0	0
-99	FSHG TOOLS & EXPENSES			0	NA
-99	TESTING: BHP,GOR,4 PT.POT	5,000	5,000	0	0
	ABANDONMENT COST			0	NA
	OTHER INTANGIBLES			0	NA
0	CONTINGENCY (10%)	43,885	75,325	31,440	72
	TOTAL INTANGIBLES	482,735	605,199	122,464	25
	TOTAL COSTS	721,942	847,583	125,641	17

Drilling Dept: Darrell Roberts Date: 12/2/91

CAA 12-9-91

Operations Dept: _____ Date: _____

SFER Approval By: Don E. Schlie Date: 12/2/91

Partner Approval: Hanley Petroleum Inc ET AL* By: L. D. Robbins Date: 12-26-91

L. D. Robbins, President

Supplement is due to change in W.I. 50% to 25% for SFEOP,LP

Change in costs due to:
1. 8 5/8" casing collapse.
2. Additional stimulation of pay.
3. Addition of Battery Facilities.
Due to lease difference with Kachina 8 #1

*Includes Authorization For
L. D. Robbins
W. L. Hanley, Jr.
James W. Rogers
Troy V. Compton
Stephen N. Castle
Joe G. Loftin