Case No.

7281

Application

Transcripts

Small Exhibits

ETC

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5434

July 2, 1981

Mr. Tommy Roberts, Attorney
Dugan Production Company
P. O. Box 208
Farmington, New Mexico 87401

Re: CASE NO. ~~7281~~
ORDER NO. ~~R-6720~~

Applicant:

~~Dugan Production Corporation~~

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD ___x___
Artesia OCD ___x___
Aztec OCD ___x___

Other _____

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7281
Order No. R-6720

APPLICATION OF DUGAN PRODUCTION
CORPORATION FOR DOWNHOLE COMMINGLING,
SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 17, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 1st day of July, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Dugan Production Corporation, is the owner and operator of the Windfall Well No. 10, located in Unit F of Section 31, Township 26 North, Range 11 West, NMPM, San Juan County, New Mexico.

(3) That the applicant seeks authority to commingle Undesignated Gallup and Basin-Dakota production within the wellbore of the above-described well.

(4) That from the Undesignated Gallup zone, the subject well is capable of low marginal oil production only.

(5) That from the Basin-Dakota zone, the subject well is capable of low marginal gas production only.

(6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, all of the commingled oil production should be allocated to the Undesignated Gallup zone, and all of the commingled gas production to the Basin-Dakota zone.

IT IS THEREFORE ORDERED:

(1) That the applicant, Dugan Production Corporation, is hereby authorized to commingle Undesignated Gallup and Basin-Dakota production within the wellbore of the Windfall Well No. 10, located in Unit F of Section 31, Township 26 North, Range 11 West, NMPM, San Juan County, New Mexico.

(2) That all of the commingled oil production shall be allocated to the Undesignated Gallup zone and all of the commingled gas production shall be allocated to the Basin-Dakota zone.

(3) That the operator of the subject well shall immediately notify the Division's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S
fd/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
17 June 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Dugan Production Corporation for downhole commingling, San Juan County, New Mexico. CASE 7281

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: Tommy Roberts, Esq.
Dugan Production Company
P. O. Box 208
Farmington, New Mexico 87401

I N D E X

E X H I B I T S

MR. NUTTER: We'll call next Case Number 7281.

MR. PADILLA: Application of Dugan Production Corporation for downhole commingling, San Juan County, New Mexico.

MR. ROBERTS: Mr. Examiner my name is Tommy Roberts, general counsel for Dugan Production Corp., P. O. Box 208, Farmington.

I have one witness.

(Witness sworn.)

TOM DUGAN

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

DIRECT EXAMINATION

BY MR. ROBERTS:

Q. Would you state your name, your address, and your occupation for the record, please?

A. Thomas A. Dugan, 907 Hallett Circle, Farmington, New Mexico.

Q. Are you familiar with the application?

A. Yes.

Q. Mr. Dugan, have you testified before the NMOCC on previous occasions?

A. Yes.

Q. In what capacity?

A. As a petroleum engineer.

MR. ROBERTS: Are the witness' qualifications as a petroleum engineer acceptable and a matter of record?

MR. NUTTER: They are.

Q. Mr. Dugan, would you briefly explain the purpose of this application?

A. The purpose of the application is to seek downhole commingling on the Windfall No. 10 Well in the Gallup-Mancos horizon and also the Dakota horizon.

Q. Mr. Dugan, when was this well originally drilled and completed?

A. The well was originally drilled by Tenneco in 1973.

Q. And what is the interest of Dugan Production Corporation in this well?

A. Tenneco sold the well for salvage to Dugan Production Corporation and we have farmed out the oil and gas rights from them.

Q. And what rights have been farmed out?

A. The rights from the surface to the base of the Dakota.

Q. Mr. Dugan, would you refer to what's been marked as Exhibit One and identify it and explain its significance to this application?

A. It's a map showing the location of the Windfall No. 10 Well. That's in the northwest quarter of Section 31, Township 26 North, Range 11 West.

It also shows the location of other wells in the immediate area and it shows the Dakota wells to the east of the Windfall No. 10 Well.

It also has tabulated on the lefthand side the cumulative production for the adjacent Dakota wells in the area, and also for the adjacent Gallup wells in the area.

Q. What conclusions can be drawn from the information provided in this exhibit?

A. You can see that the Windfall 10 is east of most of the producing Dakota wells. Let me rephrase that.

The Windfall 10 is west of most of the producing wells and it's quite a distance from other Gallup producing wells and the old Bisti Field is shown in the southeast corner -- southwest corner of the map. The Shell

well in Section 11 are in the old Bisti Field.

Q. Now would you refer to what's been marked as Exhibit Number Two and identify that exhibit and explain its significance?

A. It shows who the offset operators are surrounding the Windfall 10 lease.

Q. Please identify what's been marked as Exhibit Number Three and identify that exhibit.

A. It's a Xeroxed copy of the log on the Windfall 10 Well, when it was drilled and operated by Tenneco Oil Company. It was known as the Gallegos No. 10.

The -- we have Xeroxed the heading of the log; also, the Mancos-Gallup area on the first page and the second page, and the Dakota on the third page.

MR. NUTTER: Okay, now the first page at 4700 feet, that's what?

A. That's -- well, it's Mancos and the Gallup horizon in the Mancos Shale.

MR. NUTTER: And the second page there is --

A. Is also Gallup.

Q. -- 48 and 49, that would also be Gallup.

A. Yes.

MR. NUTTER: And on page three, down to 5700, that's the Dakota?

A. Yes, sir.

MR. NUTTER: Okay.

Q. Mr. Dugan, what conclusions do you draw, if any, from this log?

A. That there's very little sand showing up in the Gallup horizon. It's a poor area. Production would be derived from fractures in the shale and siltstone, and also that the Dakota is a fairly decent sand, but with only one lens of sand in the Dakota.

Q. Mr. Dugan, would you briefly summarize Tenneco's operations on this well prior to the acquisition by Dugan Production Corp.?

A. Yes. Tenneco spudded the well in 1973 and it was completed in the Dakota horizon. The -- they fracd the Dakota and the well made gas but it also made considerable water.

They worked with the well through November and December of 1973, and through January of 1974. They failed to make what they considered a commercial discovery, or commercial well from the Dakota formation, and they have worked with the well periodically since that time and finally decided to sell the well for salvage in 1980.

MR. NUTTER: Do you have any idea what the cumulative production from the Dakota has been on the well?

A. The well has never produced into a pipeline.

MR. NUTTER: Never did get connected?

A. No, sir.

Q. Okay, Mr. Dugan, would you refer to what's been marked as Exhibit Number Four?

A. Yeah, this is a daily report showing the work that Dugan Production Corporation has done on the well.

Q. Would you briefly summarize what operations Dugan Production has taken in this well?

A. When we purchased the well for salvage from Tenneco, we secured a farmout from them to complete the well in the Gallup horizon, and went out to plug the Dakota horizon.

When we started working on the well, we found that the Dakota horizon made a considerable amount of gas that impressed us. Of course, you've got to understand that it doesn't take as much gas to impress us as it does Tenneco.

So we found it difficult to plug the

Dakota horizon with the amount of gas it seemed to be making.

MR. NUTTER: That hurt, huh?

A. Yeah, believe it. So --

MR. NUTTER: So you went back to Tenneco.

A. So we set a bridge plug and -- above the Dakota and proceeded to complete the well in the Gallup horizon, which we did complete following a sand/water frac. The Gallup made a small oil well. We then went back to Tenneco and after a lot of negotiations, succeeded in farming out the Dakota horizon.

Then in May of 1981 we moved back in and our initial intention was to sting into Baker Model K cement retainer that we had set prior to the Gallup completion, we had difficulties in stinging into that to dual complete the well. So we drilled it up and have completed the well with both horizons open in the wellbore.

Q. Refer to Exhibit Number Five and identify that exhibit and explain its significance.

A. Exhibit Five is a multipoint -- or I mean a one point back pressure test that was taken on June the 4th, 1981, of both horizons commingled in -- and it shows that the well is making 2.1 million after three hours through a 3/4 inch choke.

Q. In your opinion are these pressures

compatible with one another?

A. Yes. The Dakota shutin pressure is high for the area, at least the shutin pressure we recorded on the well on July the 4th was 2510 pounds.

The bottom hole pressure for the Gallup horizon calculated from a shutin pressure and a fluid level determination, would be 1316 pounds per square inch, So -- which is about what the -- a little bit lower than the Bisti was on its original completion.

But I really don't believe that the difference in the bottom hole pressure will be significant.

Q. Would you characterize or attempt to characterize and describe the volume of liquid production which can be expected from each zone?

A. The Gallup horizon will make principally oil. The Dakota horizon will produce gas with some water. I don't believe that there will be any significant oil production from the Dakota horizon, or any significant gas production from the Gallup horizon.

Q. Is the ownership of each zone common?

A. Yes.

Q. From an economical standpoint, is it necessary to commingle production in this well?

A. I believe it is, yes. I know that it

wouldn't be economical to pump the Gallup horizon.

MR. NUTTER: What was that statement you made there?

A. I don't -- to set a pumping unit and pump the Gallup horizon might not be economical.

MR. NUTTER: Well, now, your swab test there, the last test that you had in June of -- 27th of 1980, indicated that it was swabbing at the rate of 15 barrels of oil a day.

A. Yeah, but of course that was following a rather long shutin period and I'm -- it's my experience with the fractured shale wells out there that they decline rather rapidly.

MR. NUTTER: And you never had a pumping unit on a well --

A. No, sir.

MR. NUTTER: -- and produced it from the Gallup then?

A. No, sir, we haven't.

MR. NUTTER: I see.

A. Well, I wouldn't -- I'd say, you know, at the price of pumping unit and rods nowadays it would be pretty -- pretty marginal to put it on. We probably would if that was the only horizon available, but --

MR. NUTTER: But you think that by opening up the Dakota that the well will flow, --

A. Yes,

MR. NUTTER: -- and you can get that Gallup oil without having to put that pumping unit on.

A. Yes, sir, I know it will for awhile, I don't know how long it will.

MR. NUTTER: And you stated there that on your test, Exhibit Five, that it made a heavy mist at 60 percent water and 40 percent oil, so you would attribute all of that oil that it's making to the Gallup zone, would you?

A. Yes, sir.

MR. NUTTER: And the gas that it made on the swab test, or whatever, was insignificant, I think --

A. From the Gallup.

MR. NUTTER: -- from the Gallup?

A. Yes uh-huh.

MR. NUTTER: So what are you recommending here, that we make an allocation formula of 100 percent oil to the Gallup and 100 percent gas to the Dakota?

A. Yes, sir.

Q. Were Exhibits Number One through Number Five either prepared by you or at your direction and under

your supervision?

A. Yes.

MR. ROBERTS We move that Exhibits One through Five be admitted.

MR. NUTTER: Exhibits One through Five will be admitted in evidence.

Q. In your professional opinion, will the commingling of production in the wellbore of this well result in the recovery of additional hydrocarbons and the prevention of waste, and the protection of correlative rights?

A. Yes.

MR. ROBERTS: We have no other questions.

MR. NUTTER: And the ownership of both zones is common now?

A. Yes.

MR. NUTTER: Are there any further questions of Mr. Dugan? He may be excused.

Do you have anything further, Mr. Roberts?

MR. ROBERTS: No, sir, we do not.

MR. NUTTER: Does anyone have anything they wish to offer in Case Number 7281?

We'll take the case under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7281, heard by me on 6/17 1981.

Oil Conservation Division, Examiner

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
17 June 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Dugan Production Corporation for downhole commingling, San Juan County, New Mexico. CASE 7281

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

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MR. NUTTER: But you think that by opening up the Dakota that the well will flow, --

A. Yes,

MR. NUTTER: -- and you can get that Gallup oil without having to put that pumping unit on.

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MR. NUTTER: -- from the Gallup?

A. Yes uh-huh.

MR. NUTTER: So what are you recommending here, that we make an allocation formula of 100 percent oil to the Gallup and 100 percent gas to the Dakota?

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Q. Were Exhibits Number One through Number Five either prepared by you or at your direction and under

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A. Yes.

MR. ROBERTS: We have no other questions.

MR. NUTTER: And the ownership of both zones is common now?

A. Yes.

MR. NUTTER: Are there any further questions of Mr. Dugan? He may be excused.

Do you have anything further, Mr. Roberts?

MR. ROBERTS: No, sir, we do not.

MR. NUTTER: Does anyone have anything they wish to offer in Case Number 7281?

We'll take the case under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7281, heard by me on 6/17, 1981.

Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

CASE 7279: Application of BCO, Inc. for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Basin-Dakota and Lybrook-Gallup production in the wellbores of the following wells located in Township 23 North, Range 7 West: Dunn Well No. 3 located in Unit I of Section 3 and State H Wells Nos. 3 and 4, located in Units M and D, respectively, of Section 2.

CASE 7280: Application of Northwest Pipeline Corporation for a dual completion and downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Rosa Unit Well No. 77 located in Unit L of Section 33, Township 31 North, Range 5 West, to produce gas from the Mesaverde formation and commingled Gallup and Dakota production through separate strings of tubing.

CASE 7281: Application of Dugan Production Corporation for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of undesignated Gallup and Basin-Dakota production in the wellbore of its Windfall Well No. 10 located in Unit F of Section 31, Township 26 North, Range 11 West.

CASE 7282: Application of Jerome P. McHugh for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Wildhorse-Gallup and Basin-Dakota production in the wellbore of his Apache Well No. 3-E located in Unit H of Section 19, Township 26 North, Range 3 West.

CASE 7254: (Continued from May 20, 1981, Examiner Hearing)

Application of Mesa Petroleum Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Mesaverde formation underlying the W/2 of Section 15, Township 30 North, Range 11 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7270: (Continued from June 3, 1981, Examiner Hearing)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the N/2 of Section 21, Township 19 South, Range 27 East, to be dedicated to its Pecos River Federal 21-A Com Well No. 1 drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7250: (Continued from June 3, 1981, Examiner Hearing)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the N/2 of Section 22, Township 18 South, Range 29 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

Dockets Nos. 20-81 and 21-81 are tentatively set for July 2 and 15, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 17, 1981

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

ALLOWABLE: (1) Consideration of the allowable production of gas for July, 1981, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.

(2) Consideration of the allowable production of gas for July, 1981, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 7273: Application of Blanks Energy Corporation for an unorthodox oil well location and possible directional drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a well to be drilled 330 feet from the South line and 900 feet from the East line of Section 16, Township 18 South, Range 35 East, South Vacuum-Devonian Pool, the S/2 SE/4 of said Section 16 to be dedicated to the well. If commercial production is not obtained at said location, applicant proposes to come back up the hole and directionally drill in a westerly direction and bottom the well in the Devonian formation at a standard location in the SW/4 SE/4 of said Section 16.

CASE 7274: Application of Bass Enterprises Production Company for directional drilling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill its James Ranch Unit Well No. 13 from an unorthodox surface location 660 feet from the South line and 1340 feet from the East line of Section 36, Township 22 South, Range 30 East, in such a manner as to bottom said well in the Morrow formation at a standard location at least 660 feet from the South line and 1980 feet from the West line of Section 31, Township 22 South, Range 31 East, the S/2 of said Section 31 to be dedicated to the well.

CASE 7275: Application of S. P. Yates for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Pennsylvanian formations underlying the N/2 of Section 21, Township 19 South, Range 27 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7263: (Continued from June 3, 1981, Examiner Hearing)

Application of Yates Petroleum Corporation for amendment of Order No. R-5527, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Division Order No. R-5527, which approved an unorthodox Morrow location, to permit the recompletion of its Blevins "IK" Well No. 1 in Unit D of Section 35, Township 17 South, Range 26 East, as an unorthodox gas well location in all Wolfcamp and Pennsylvanian formations.

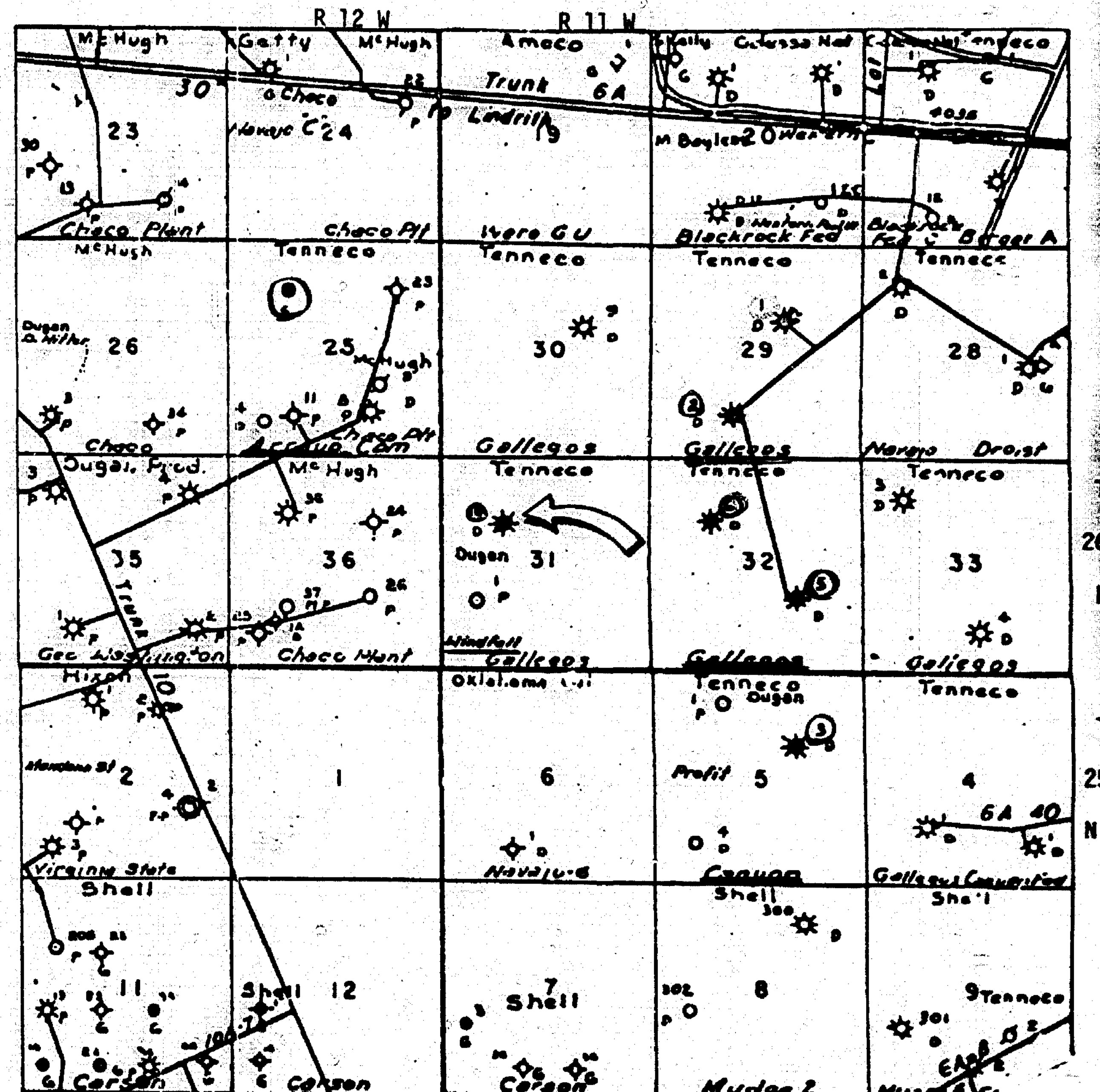
CASE 7276: Application of Mobil Producing Texas & New Mexico Inc. for the extension of the vertical limits of the Langlie Mattix Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the vertical limits of the Jalmat Pool and the upward extension of the vertical limits of the Langlie Mattix Pool to the following depths underlying the following 40-acre tracts in Township 25 South, Range 37 East: NE/4 SE/4 of Section 4: 3327 feet; NE/4 SW/4 of Section 3: 3215 feet; and NE/4 NW/4 of Section 15: 3206 feet.

CASE 7277: Application of Holly Energy, Inc. for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Beeson Well No. 2 to be drilled 1100 feet from the North line and 2300 feet from the West line of Section 29, Township 17 South, Range 30 East, Grayburg-Jackson Pool, the NE/4 NW/4 of said Section 29 to be dedicated to the well.

CASE 7278: Application of Pollution Control, Inc. for an oil treating plant permit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority for the construction and operation of an oil treating plant for the purpose of treating and reclaiming sediment oil at a site in the E/2 NW/4 of Section 18, Township 20 South, Range 33 East.

DUGAN PRODUCTION CORP. - Windfall #10 SURROUNDING PRODUCTION

			Cumulative	1980
BASIN DAKOTA				
T 25 N, R 11 W				
Tenneco Oil Company				
Sec. 5 (G) Canyon #3	gas		548441	111699
	oil		4657	974
T 26 N, R 11 W				
Sec 29 (G) Gallegos #1	gas		1526233	92402
	oil		7237	276
Sec 29 (N) Gallegos #2	gas		2561189	261289
	oil		19070	1577
Sec 32 (F) Gallegos Com #6	gas		1609036	487431
	oil		12990	3664
Sec 32 (J) Gallegos Com #5	gas		654436	117372
	oil		5692	933
GALLEGOS GALLUP				
T 26 N, R 12 W				
Tenneco Oil Company				
Sec. 25 (C) Arroyo #1	oil		5782	606 (pumping)



Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 1

OFF-SET OPERATORS AND LEASES

T26N R12W

Sec 25, SE/4
Tenneco Oil Co.
NM 0553884-A

Sec 36 E/2
Tenneco Oil Co.
NM 61

T25N R12W

Sec 1
Shell Oil Co.
SF 070864

T26N R11W

Sec 30, lots 3 & 4
Unleased
NM 13051

Sec 30 E/2of SW/4
50% Depco Inc.
50% Husky Oil Co.
NM 0359212

Sec 30, SE/4, Sec 31 NE/4
50% Continental Oil Co.
50% Tenneco, Lease #I-149-Ind7971

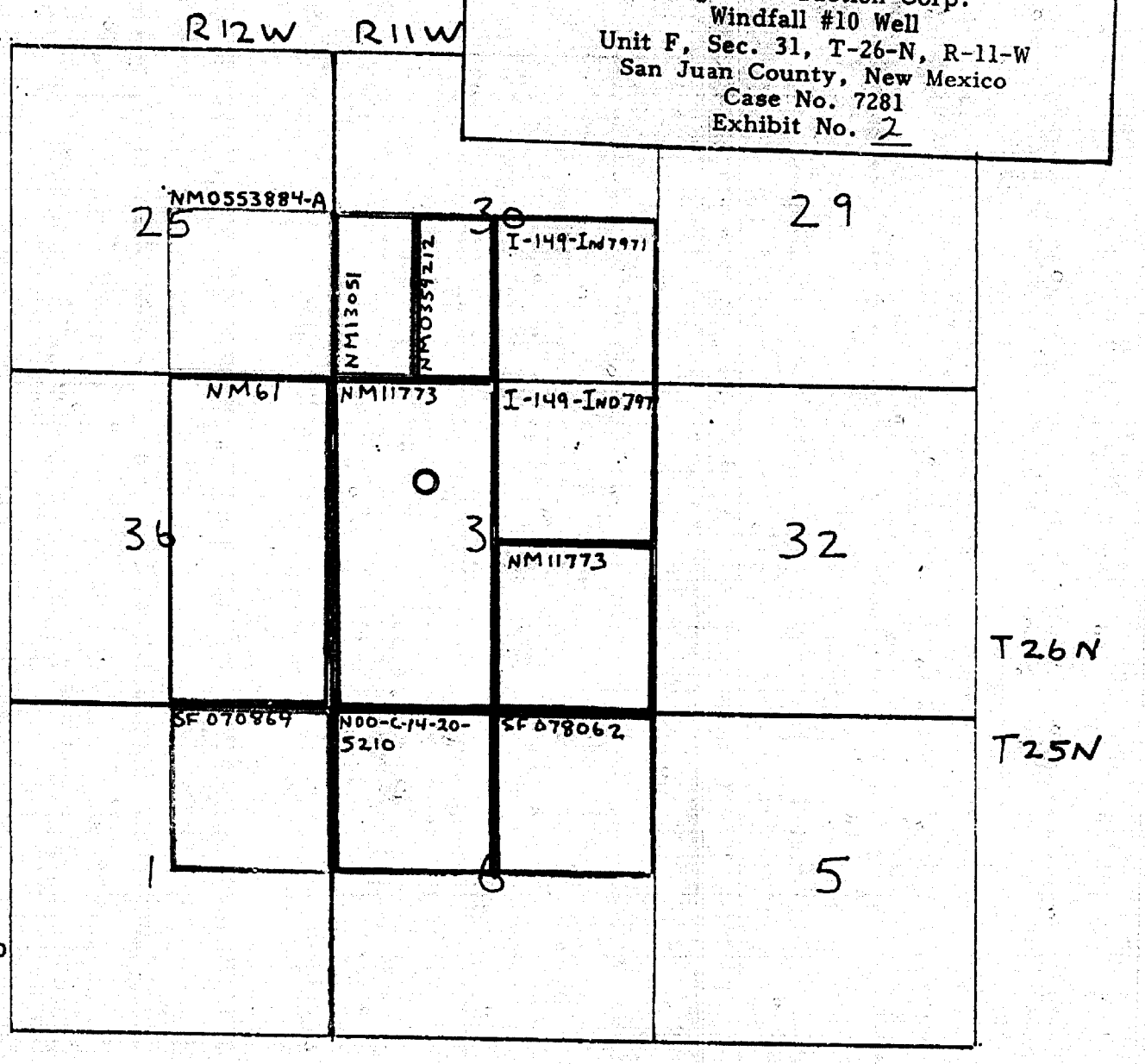
Sec 31 SE/4
Dugan Production Corp.
NM 11773

T25N R11W

Sec 6 NW/4
Oklahoma Oil Co. 50%, O.R. Surface to 5800'
Tesoro Oil Co. has the rest
NOO-C-14-20-5210

Sec 6 NE/4
Shell Oil Co.
SF 078062

Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 2



DUGAN PRODUCTION CORPORATION
Windfall #10
NM 11773
W/2 Sec 31 T26N R11W

Schlumberger

INDUCTION-ELECTRICAL LOG

COUNTY SAN JUAN
FIELD or LOCATION BASIN DAKOTA
WELL GALLEGOS NO. 10

COMPANY TENNECO OIL CO.

COMPANY TENNECO OIL COMPANY
WELL GALLEGOS NO. 10
FIELD BASIN DAKOTA
COUNTY SAN JUAN STATE NEW MEXICO

LOCATION
1600 FNL & 1600 FW
Sec. 31 Twp. 26N Rge. 11W

Other Services:
CNL-FDC
FDC-GR

Elev.: K.B. 6163
D.F. 6162
G.L. 6150

Permanent Datum: GROUND LEVEL Elev. 6150
Log Measured From RKB 13 Ft. Above Perm. Datum
Drilling Measured From SAME

Date	10-28-73			
Run No.	ONE			
Depth—Driller	5800			
Depth—Logger	5801			
Btm. Log Interval	5800			
Top Log Interval	627			
Casing—Driller	8-5/8@ 610	@	@	
Casing—Logger	627			
Bit Size	7-7/8			
Type Fluid in Hole	FRESH GEL			
Dens. / Visc.	9.2 / 70			
pH / Fluid Loss	8.5 / 8.0ml	ml	ml	ml
Source of Sample	CIRCULATED			
Rm @ Meas. Temp.	2.22 @ 80 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	1.99 @ 80 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	3.33 @ 80 °F	@ °F	@ °F	@ °F
Source: Rmf Rmc	M C			
Rm @ BHT	1.37 @ 130 °F	@ °F	@ °F	@ °F
Time Since Circ.	3 HOURS			
Max. Rec. Temp.	130 °F	°F	°F	°F
Equip. Location	5616 FARM			

HERE The well name, location and borehole reference data were furnished by the customer.

Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 3

NGES IN MUD TYPE OR ADDITIONAL SAMPLES

Sample No.				
- Driller				
Fluid in Hole				
Visc.				
Fluid Loss	ml		ml	
e of Sample				
@ Meas. Temp.	@ °F		@ °F	
@ Meas. Temp.	@ °F		@ °F	
@ Meas. Temp.	@ °F		@ °F	
rce: Rmf Rmc				
@ BHT	@ °F		@ °F	
@ BHT	@ °F		@ °F	
@ BHT	@ °F		@ °F	

SCALE CHANGES

Type Log	Depth	Scale Up Hole	Scale Down Hole

IPMENT DATA

o.		UNE
No.	IRPN	587
No.	IRCF	390
e No.	IRSM	737
Panel No.	MMPB	324
Cart. No.		
Panel No.		
o.		
Device		YES
off - Inches		1-1/2
Const - Sec.		
- F.P.M.		
		4

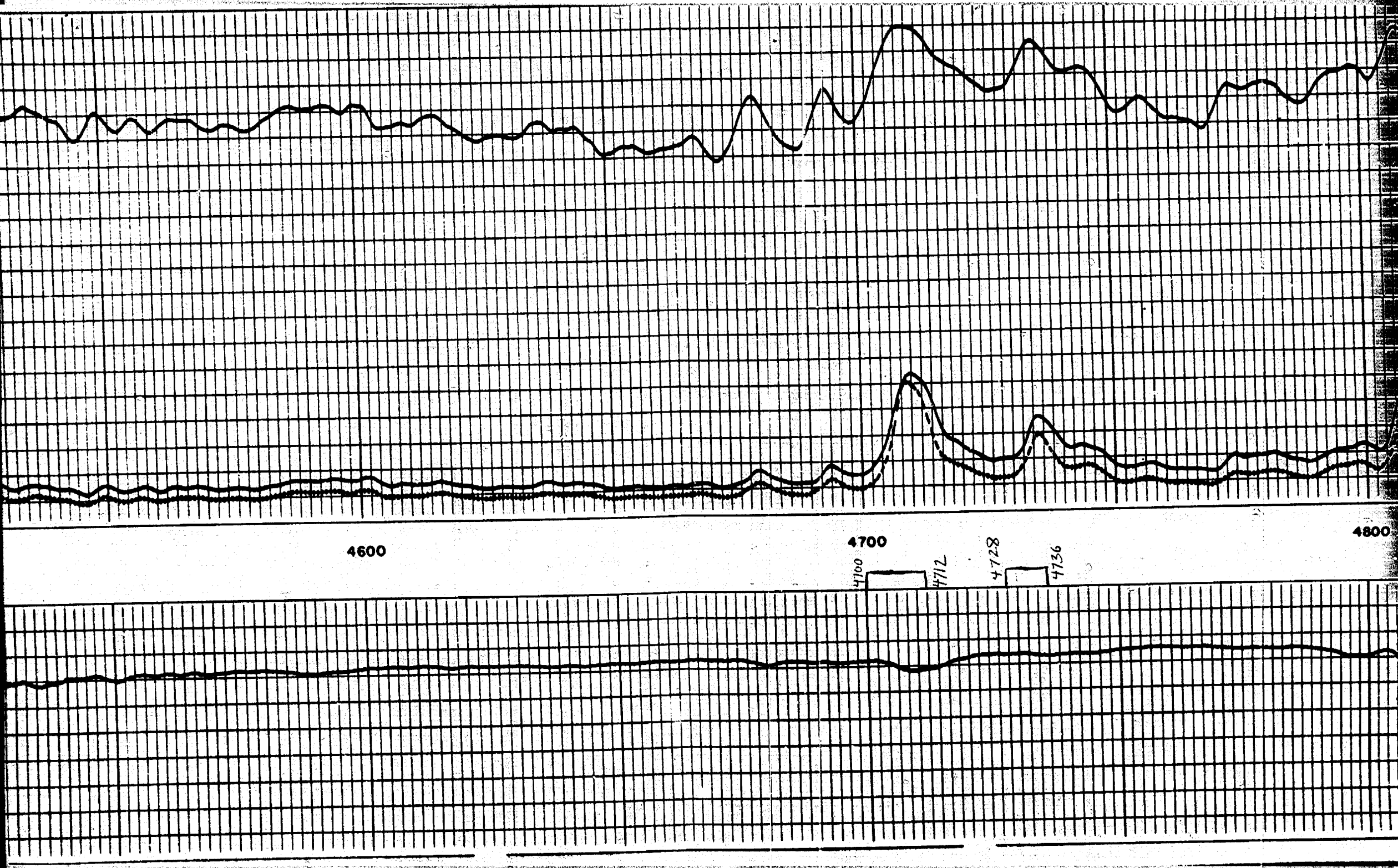
REMARKS
Service Order No. - 85247
API Serial No. -

☒ Surface determined sonde errors used for 6FF40.
☐ 6FF40 sonde error corrected for inch
borehole signal at Rm =
☒ 6FF40 zero set in hole at depth of 600 feet.

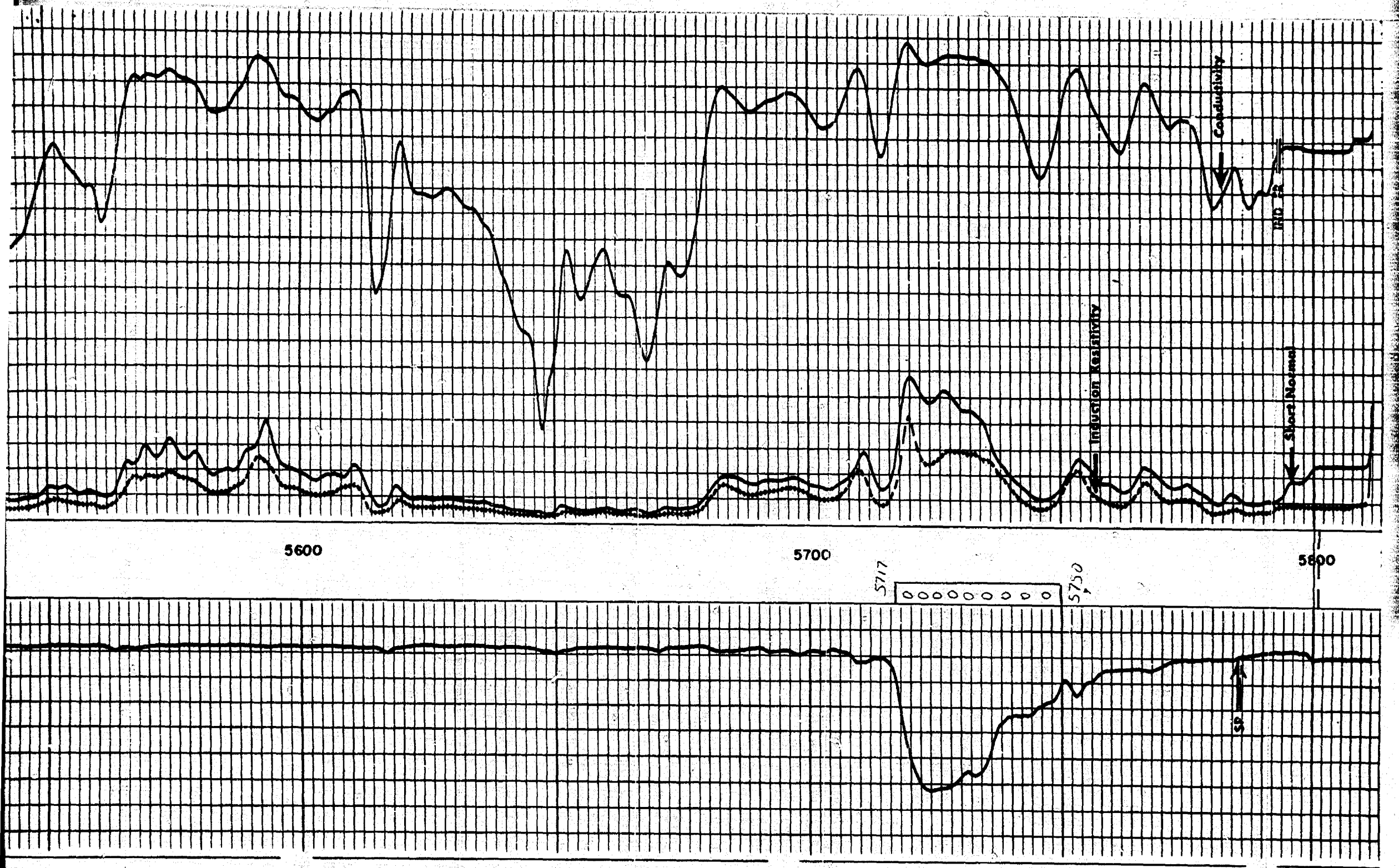
IBRATION DATA

	BACKGND.	SOURCE	GALV. INCR	SENS. TAP	SENS. TAP	TIME
BRATION:	CPS.	CPS.	DIVISION	(FOR CAL.)	(RECORD)	CONST.
MMA RAY:						

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for


4600
4700
4800
4100
4712
4728
4736


4800
4802
4812
4820
4831
4900
4904
4928


Conductivity
IND 22
Induction Resistivity
Short Normal
5600
5700
5800
5717
5750
SP

dugan production corp.

Dugan Production Corp.
Windfall #10

Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 4

DAILY REPORT

6-18-80 Hooked up Western Co. and pumped water down to kill well.

Removed tbg spool and installed BOP. Removed 2-7/8" donut and 1 jt of 2-3/8" tbg from well. Hooked up Western and killed well again.

GO Wireline went in hole w/Baker Model "K-1" cement retainer and set @ 5600'. Came up hole and waited for well to die before rigging down GO. Hooked up Western and loaded hole and pressure tested to 2500 psi.

Rigged up GO again and ran GR-CCL from 5300' to 4600'. Went in hole and perf w/1 shot per foot as follows:

5198-5206, 4908-4932', 4824-4834', 4806-4816, 4732-4740', 4704-4716'.

Rigged down GO and shut well in. Well had gas on braden head and was starting to build on csg.

6-19-80 Opened well and blew down small amount of gas. Changed pipe rams to 2" in BOP. Went in hole w/Baker Service Tools bridge plug and packer. Had trouble getting in hole w/1st 16 jts. Set equipment as follows and acidized with Western.

Bridge plug @ 5247', packer @ 5129'.

Treated zone 5198-5206' w/6 RCN frac balls. Breakdown @ 2850 psi. (Broke down hard after three trys) Ball action - none - Good break back
Bridge plug @ 4845', Packer @ 4981'
Treated zone 4908-4932' w/20 RCN frac balls. Break down @ 2900 psi.
Ball action - none - good break back
Bride plug @ 4862', packer @ 4772'
Treated zone 4806-4832' w/20 RCN frac balls. Break down @ 1500 psi
Ball action - good with break back.
Bridge plug @ 4772'
Packer @ 4653'
Treated zone 4704-4740' w/20 RCN frac balls. Breakdown @ 1600 psi.
Ball action - none, but with good break back. Rigged down Western & POH.

709 BLOOMFIELD RD. • P. O. BOX 208 • FARMINGTON, NEW MEXICO 87401 • PHONE: 505-325-0238

6-20-80 Rigged up Western Co. and fraced as follows:

238 bbl - slick water pad
111 bbl - slick water w/1/2#/gal 20-40 sand
581 bbl - slick water w/1#/gal 20-40 sand
742 bbl - slick water w/1-1/2#/gal 20-40 sand
200 bbl - slick water flush

Water was treated w/2.5#/1000 gal of FR-2 and 1 gal/1000 gal of aquaflow.

Total fluid - 1872 bbls
Total sand - 65,000# 20-40

Max 1300 psi @ 44 B/M
Avg 1000 psi @ 44 B/M
Min 900 psi @ 40 B/M

ISDP - 700 psi I.S. after 15 min - 600 psi

Frac went good but should have dropped balls. Fear bottom zone did not frac. Opened well after 2-1/2 hrs - did not blow down for another 2-1/2 hrs.

Went in hole w/2-3/8" 4.7# EUE tbg w/well blowing to 5242' without tagging sand. Set 175 jts 2-3/8" OD 4.7# J-55 EUE J&L tbg. TE 5169' set @ 5182'. Nippled down BOP and installed well head. Shut well in for the night.

6-26-80 M.I. & R.U. F.W.S. swabbing unit. Swabbed well 9 hrs. Swabbing - frac water w/ show oil. Csg. pressure when starting swabbing operation T.S.T.M. Csg. pressure at end of day 250 psi.

6-27-80 Swabbed well 6½ hrs - csg pressure remaining at 250 psi. Wtr. decreasing and oil percentage increasing. Estimated swabbing at rate of 15 bbls oil per day. Plan to put well on pump.

5-18-81 Move in and rig up MTK. Swab tbg. down. Fluid level on 1st run 2800' down. Rig up B.O.P.

5-19-81 Swab tbg. down. Fluid level 3800' down on 1st run. P.U. tbg. Tag sand at 5560 RKB. Clean out sand. Didn't recover any frac balls after circulating 2 hrs. P.O.O.H. G.I.H. w/ tbg., sliding sleeve and Model K cement stinger. Unable to sting into cement retainer. Set down all tbg. weight. No loss of circulation or increase in pump pressure. Shut down over night.

5-20-81 Able to sting into retainer but not enough to open parts. P.O.O.H. Lay down sliding sleeve and stinger. G.I.H. w/ 4-3/4 bit. Drilling cement retainer. Circulated out lot of mill varnish - small amount of rubber. Went to PBTD w/ bit. Shut down due to strong winds.

5-21-81 Well kicked off during night. Turned flow line and blew hole under rig. Fill in hole. Clean location. Rig down. Rig up opposite side of well head.

5-22-81 Opened well up. Load tbg. w/ water. Land tbg. as follows: 194 jts. 2-3/8" OD, 4.7#, J-55, 8 Rd, EUE tbg. T.E. 5720.47' set at 5733' RKB. Left 4-3/4" bit and bit sub on bottom of tbg. Rig down MTK.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

1 - El Paso, Clark

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: (XX) Initial ☐ Annual ☐ Special				Test Date: 6-4-81	
Company: Dugan Production Corp.		Connection			
Pool: Bisti		Formation: Dakota & Mancos		Unit	
Completion Date: 5-22-81	Total Depth: 5800'	Plug Back TD: 5761'	Elevation: 6142 GL	Farm or Lease Name: Windfall	
Csg. Size: 5½" / Wt.: 20# / d: 4.778 / Set At: 5800		Perforations: From 4704 To 5736		Well No.: #10	
Tbg. Size: 2-3/8" / Wt.: 4.7# / d: 1.995 / Set At:		Perforations: From open end To		Unit: F / Sec.: 31 / Twp.: 26N / Rge.: 11W	
Type Well – Single – Bradenhead – G.C. or G.O. Multiple: downhole comingled Dakota & Mancos gas		Packer Set At: ---		County: San Juan	
Producing Thru: tubing	Reservoir Temp. °F: 163° @ 5736'	Mean Annual Temp. °F: 50	Baro. Press. – P_a: 12.2	State: NM	
L / H / Cg: .65 / % CO_2 / % N_2 / % H_2S / Prover / Meter Run / Taps					

FLOW DATA					TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					1250	90	2510	90	305 hrs.
1.									
2.									
3.	3/4"				175	96	810	90	3 hrs.
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1							
2.							
3.	12.365		187	.9671	.9608	1.01	2,170
4.							
5.							

NO.	P_t	Temp. °R	T_t	Z
1				
2.				
3.				
4.				
5				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 2522 P_c^2 6,360,464

NO	P_t	P_w	P_w^2	$P_c^2 - P_w^2$
1				
2				
3		822	675,684	5,684,800
4				
5				

(1) P_c ... 879
R^2 = ... or = Q

Absolute Open Flow 2361 Mc... .85

Remarks: heavy mist of 60% wtr. & 40% oil

Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 5

Approved By Division	Conducted By: Crane	Calculated By: Donovan	Checked By:

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

1 - El Paso, Clark

1 - El Paso

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: (X) Initial ☐ Annual ☐ Special				Test Date: 6-4-81	
Company: Dugan Production Corp.		Connection			
Pool: Bisti		Formation: Dakota & Mancos			Unit
Completion Date: 5-22-81	Total Depth: 5800'	Plug Back TD: 5761'	Elevation: 6142 GL		Farm or Lease Name: Windfall
Csg. Size: 5½" / Wt.: 20# / d: 4.778 / Set At: 5800		Perforations: From 4704 To 5736			Well No.: #10
Tbg. Size: 2-3/8" / Wt.: 4.7# / d: 1.995 / Set At:		Perforations: From open end To			Unit: F / Sec.: 31 / Twp.: 26N / Rge.: 11W
Type Well – Single – Bradenhead – G.C. or G.O. Multiple: downhole comingled Dakota & Mancos gas		Packer Set At: ---			County: San Juan
Producing Thru: tubing	Reservoir Temp. °F: 163° @ 5736'	Mean Annual Temp. °F: 50	Baro. Press. – P_a: 12.2		State: NM
L	H	Gg: .65	% CO_2	% N_2	% H_2S / Prover / Meter Run / Taps

FLOW DATA NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA Press. p.s.i.g.	Temp. °F	CASING DATA Press. p.s.i.g.	Temp. °F	Duration of Flow
SI							1250	90	2510	90	305 hrs.
1.											
2.											
3.	3/4"						175	96	810	90	3 hrs.
4.											
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1							
2.							
3.	12.365		187	.9671	.9608	1.01	2,170
4.							
5.							

NO.	P_t	Temp. °R	T_f	Z
1				
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 2522 P_c^2 6,360,484

NO	P_t	P_w	P_w^2	$P_c^2 - P_w^2$
1				
2				
3		822	675,684	5,684,800
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2}$ = .0879 or • 0

Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 5

Absolute Open Flow 2361 Mcf/d, .85

Remarks: heavy mist of 60% wtr. & 40% oil

Approved By Division	Conducted By: Crane	Calculated By: Donovan	Checked By:

DUGAN PRODUCTION CORP. - Windfall #10 SURROUNDING PRODUCTION

			Cumulative 1980	
BASIN DAKOTA				
T 25 N, R 11 W				
Tenneco Oil Company				
Sec. 5 (G)	Canyon #3	gas	548441	111699
		oil	4657	974
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		oil	7237	276
Sec 29 (N)	Gallegos #2	gas	2561189	261289
		oil	19070	1577
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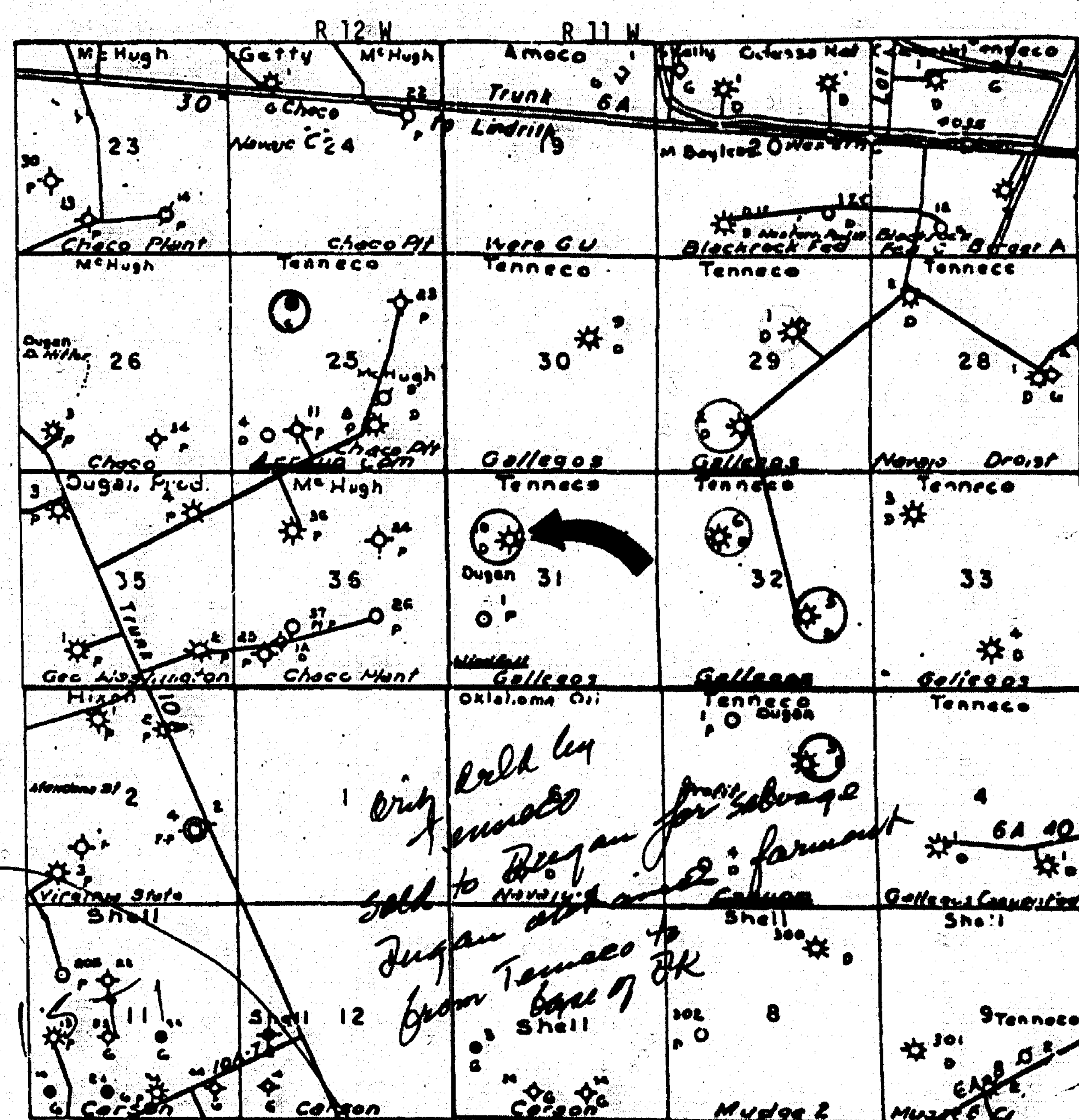
		oil	12990	3664
Sec 32 (J)	Gallegos Com #5	gas	654436	117372
		oil	5692	933
GALLEGOS GALLUP				
T 26 N, R 12 W				
Tenneco Oil Company				
Sec. 25 (C)	Arroyo #1	oil	5782	606 (pumping)



Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 1

does not expect significant gas from Gp
" " " " oil " DK

orig drld by Tenneco sold to Dugan for salvage
Dugan obtained farmout from Tenneco to base of DK

apd in 73
compl in DK frac'd made gas & wtr
worked them Nov Dec & Jan failed to make comm'l well - have worked prim'ly, decided to add ... to pipe line

SET OPERATORS AND LEASES

I R12W
ec 25, SE/4
enneco Oil Co.
M 0553884-A

ec 36 E/2
enneco Oil Co.
M 61

N R12W
ec 1
hell Oil Co.
F 070864

N R11W
ec 30, lots 3 & 4
nleased
M 13051

ec 30 E/2 of SW/4
0% Depco Inc.
0% Husky Oil Co.
M 0359212

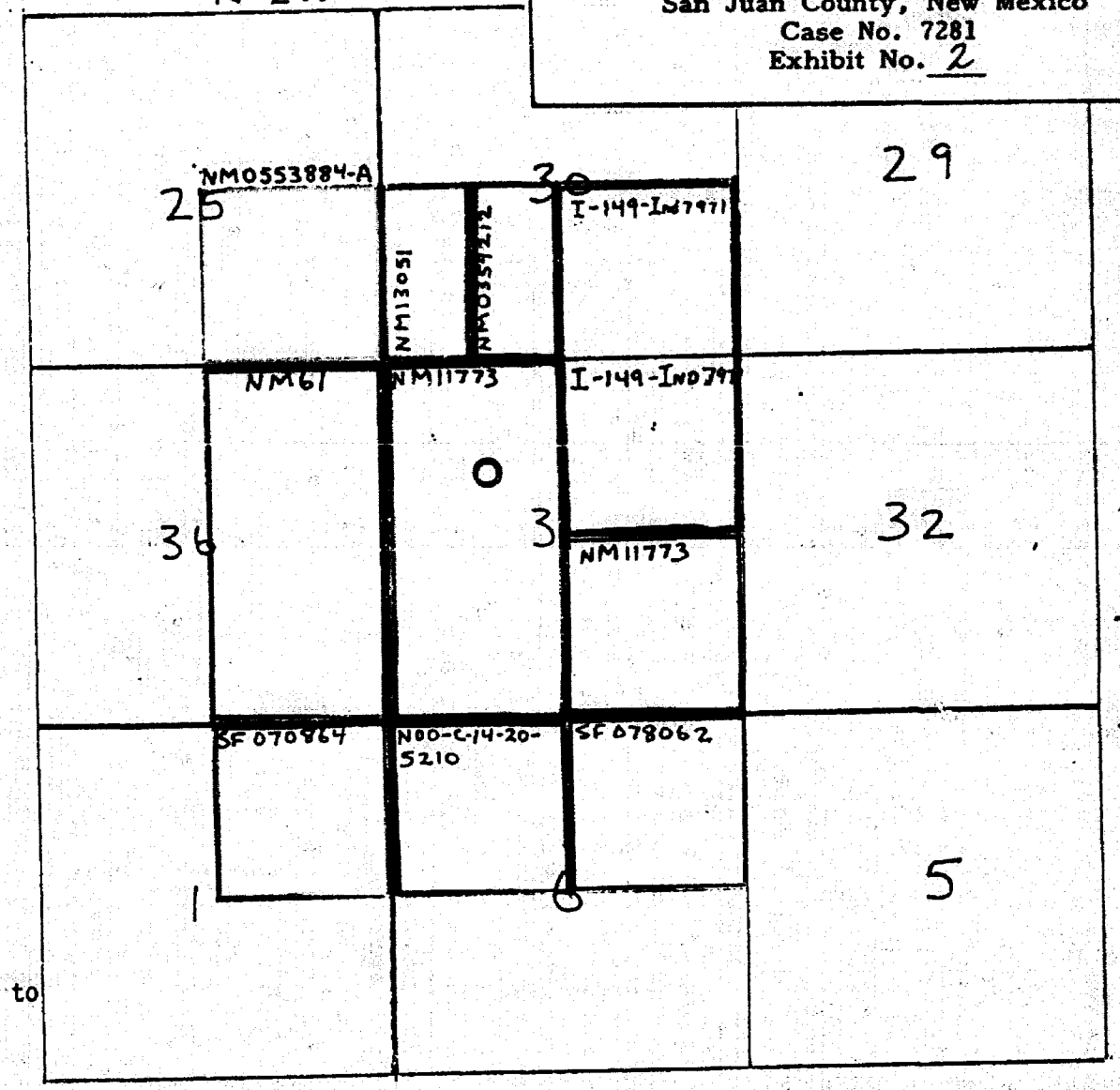
ec 30, SE/4, Sec 31 NE/4
0% Continental Oil Co.
0% Tenneco, Lease #I-149-Ind7971

ec 31 SE/4
ugan Production Corp.
M 11773

N R11W
ec 6 NW/4
klahoma Oil Co. 50%, O.R. Surface to 5800'
esoro Oil Co. has the rest
00-C-14-20-5210

ec 6 NE/4
hell Oil Co.
F 078062

Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 2



DUGAN PRODUCTION CORPORATION
Windfall #10
NM 11773
W/2 Sec 31 T26N R11W

Schlumberger

INDUCTION-ELECTRICAL LOG

COUNTY SAN JUAN
FIELD or LOCATION BASIN DAKCTA
WELL GALLEGOS NO. 10
COMPANY TENNECO OIL CO.

COMPANY TENNECO OIL COMPANY

Perfs

WELL GALLEGOS NO. 10
FIELD BASIN DAKOTA
COUNTY SAN JUAN STATE NEW MEXICO

LOCATION 1600 FNL & 1600 FW

Other Services:
CNL-FDC
FDC-GR

Sec. 31 Twp. 26N Rge. 11W

Permanent Datum: GROUND LEVEL, Elev. 6150
Log Measured From RKB, 13 Ft. Above Perm. Datum
Drilling Measured From SAME

Elev.: K.B. 6163
D.F. 6162
G.L. 6150

Date	10-28-73		
Run No.	ONE		
Depth—Driller	5800		
Depth—Logger	5801		
Btm. Log Interval	5800		
Top Log Interval	627		
Casing—Driller	8-5/8 @ 610	@	@
Casing—Logger	627		
Bit Size	7-7/8		
Type Fluid in Hole	FRESH GEL		
Dens. / Visc.	9.2 / 70		
pH / Fluid Loss	8.5 / 8.0 ml	ml	ml
Source of Sample	CIRCULATED		
R_m @ Meas. Temp.	2.22 @ 80 °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	1.99 @ 80 °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	3.33 @ 80 °F	@ °F	@ °F
Source: R_{mf} / R_{mc}	M / C		
R_m @ BHT	1.37 @ 130 °F	@ °F	@ °F
Time Since Circ.	3 HOURS		
Max. Rec. Temp.	130 °F	°F	°F
Equip. / Location	[illegible] / FARM		

The well name, location and borehole reference data were furnished by the customer.

CHANGES IN MUD TYPE OR ADDITIONAL SAMPLES

Sample No.				
Depth – Driller				
Type Fluid in Hole				
Dens. / Visc.				
pH / Fluid Loss		ml		ml
Source of Sample				
R_m @ Meas. Temp.	@	°F	@	°F
R_{mf} @ Meas. Temp.	@	°F	@	°F
R_{mc} @ Meas. Temp.	@	°F	@	°F
Source: R_{mf} / R_{mc}				
R_m @ BHT	@	°F	@	°F
R_{mf} @ BHT	@	°F	@	°F
R_{mc} @ BHT	@	°F	@	°F

SCALE CHANGES

Type Log	Depth	Scale Up Hole	Scale Down Hole

Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 3

EQUIPMENT DATA

Run No.		ONE		
... No.	IRPN	587		
... No.	IRCF	390		
... No.	IRSM	737		
Panel No.	MMPB	324		
Cart. No.				
Panel No.				
... No.				
Device		YES		
...off - Inches		1-1/2		
Const - Sec.				
... - F.P.M.				
		4		

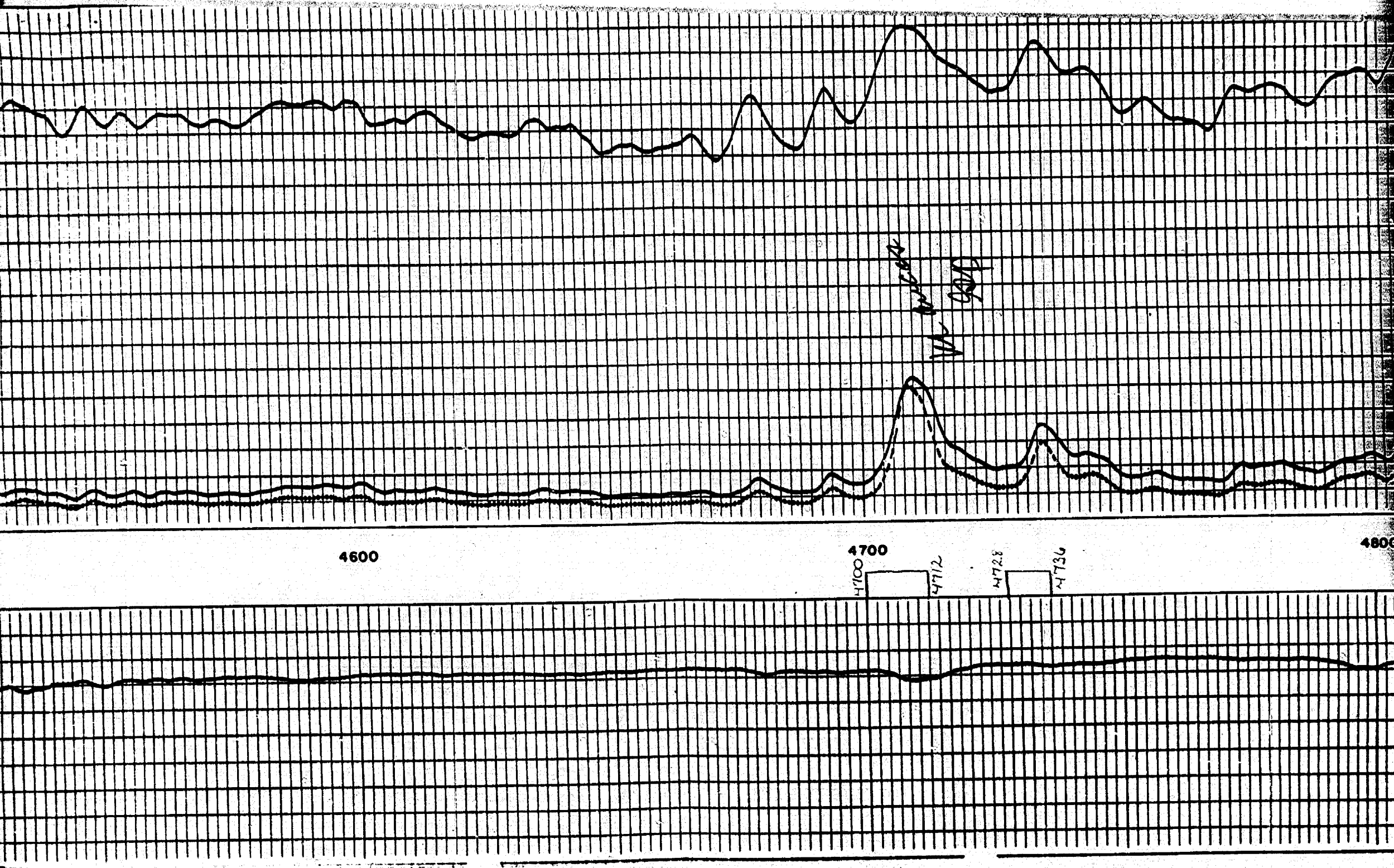
REMARKS

Service Order No. - 85247
API Serial No. -

☒ Surface determined sonde errors used for 6FF40.
☐ 6FF40 sonde error corrected for inch borehole signal at Rm =
☒ 6FF40 zero set in hole at depth of 600 feet.

CALIBRATION DATA

CALIBRATION:	BACKGND. CPS.	SOURCE CPS.	GALV. INCR. DIVISION	SENS. TAP (FOR CAL.)	SENS. TAP (RECORD)	TIME CONST.
GAMMA RAY:						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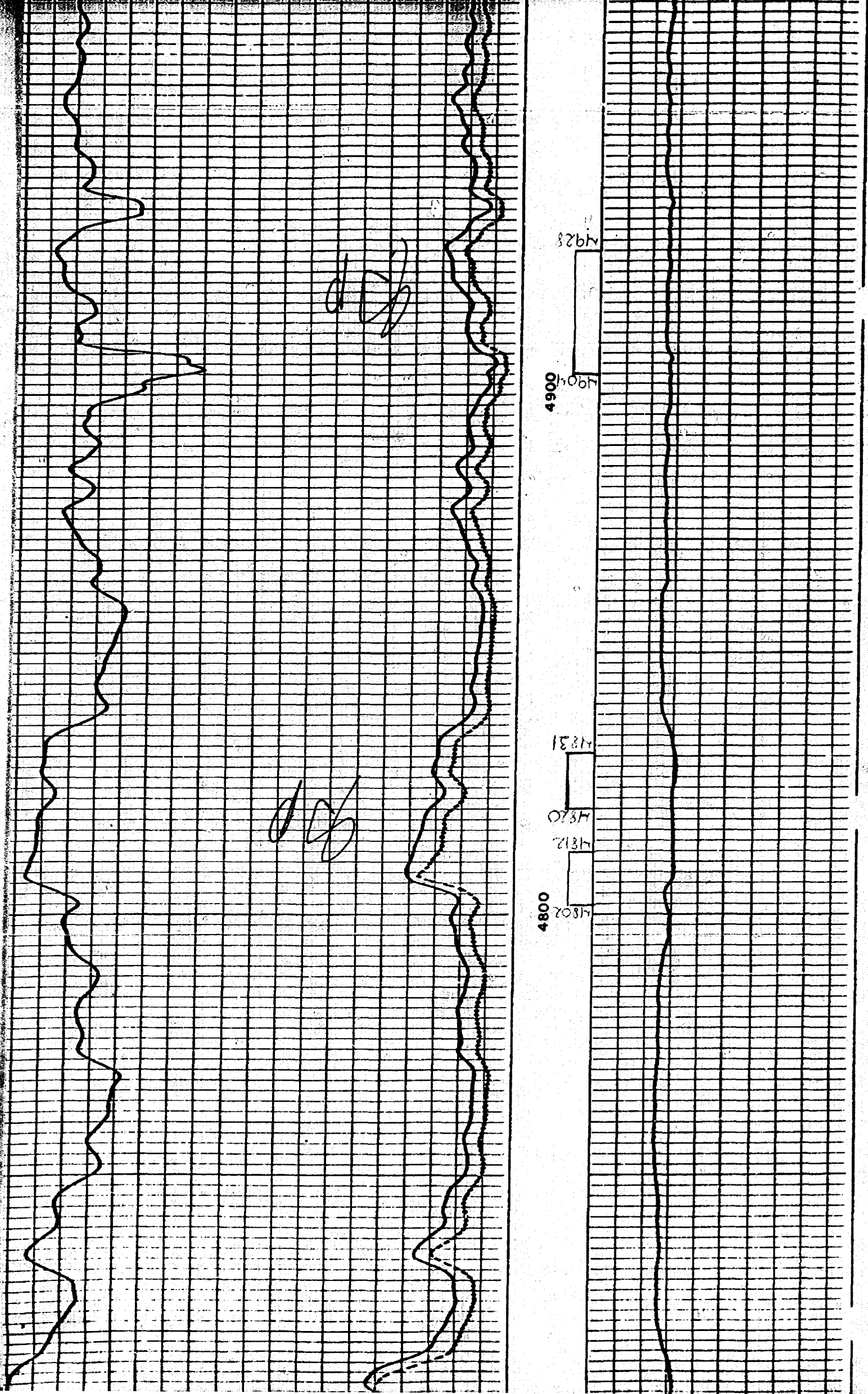
4100
4712
4742.8
4736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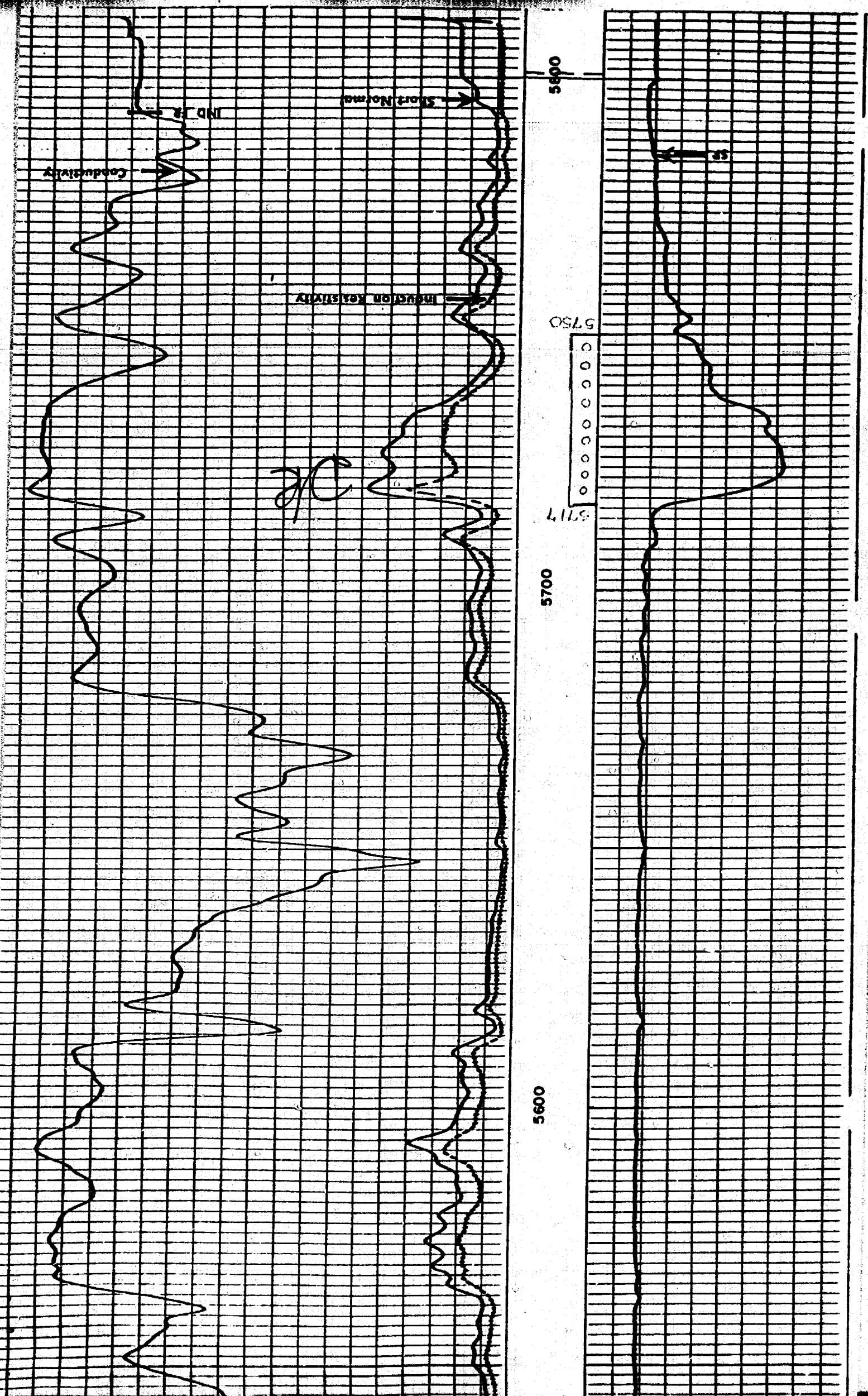
5900
SP
5750
5717
5700
Short Normal
IND SP
Conductivity
Induction Resistivity
5600

dugan production corp.

Dugan Production Corp.
Windfall #10

Application for Downhole Commingling
Dugan Production Corp.
Windfall #10 Well
Unit F, Sec. 31, T-26-N, R-11-W
San Juan County, New Mexico
Case No. 7281
Exhibit No. 4

DAILY REPORT

6-18-80 Hooked up Western Co. and pumped water down to kill well.

Removed tbg spool and installed BOP. Removed 2-7/8" donut and 1 jt of 2-3/8" tbg from well. Hooked up Western and killed well again.

GO Wireline went in hole w/Baker Model "K-1" cement retainer and set @ 5600'. Came up hole and waited for well to die before rigging down GO. Hooked up Western and loaded hole and pressure tested to 2500 psi.

Rigged up GO again and ran GR-CCL from 5300' to 4600'. Went in hole and perf w/1 shot per foot as follows:

5198-5206, 4908-4932', 4824-4834', 4806-4816, 4732-4740', 4704-4716'.

Rigged down GO and shut well in. Well had gas on braden head and was starting to build on csg.

6-19-80 Opened well and blew down small amount of gas. Changed pipe rams to 2" in BOP. Went in hole w/Baker Service Tools bridge plug and packer. Had trouble getting in hole w/1st 16 jts. Set equipment as follows and acidized with Western.

Bridge plug @ 5247', packer @ 5129'.

Treated zone 5198-5206' w/6 RCN frac balls. Breakdown @ 2850 psi. (Broke down hard after three trys) Ball action - none - Good break back
Bridge plug @ 4845', Packer @ 4981'
Treated zone 4908-4932' w/20 RCN frac balls. Break down @ 2900 psi.
Ball action - none - good break back
Bride plug @ 4862', packer @ 4772'
Treated zone 4806-4832' w/20 RCN frac balls. Break down @ 1500 psi
Ball action - good with break back.
Bridge plug @ 4772'
Packer @ 4653'
Treated zone 4704-4740' w/20 RCN frac balls. Breakdown @ 1600 psi.
Ball action - none, but with good break back. Rigged down Western & POH.

6-20-80 Rigged up Western Co. and fraced as follows:

238 bbl - slick water pad
111 bbl - slick water w/1/2#/gal 20-40 sand
581 bbl - slick water w/1#/gal 20-40 sand
742 bbl - slick water w/1-1/2#/gal 20-40 sand
200 bbl - slick water flush

Water was treated w/2.5#/1000 gal of FR-2 and 1 gal/1000 gal of aquaflow.

Total fluid - 1872 bbls
Total sand - 65,000# 20-40

Max 1300 psi @ 44 B/M
Avg 1000 psi @ 44 B/M
Min 900 psi @ 40 B/M

ISDP - 700 psi I.S. after 15 min - 600 psi

Frac went good but should have dropped balls. Fear bottom zone did not frac. Opened well after 2-1/2 hrs - did not blow down for another 2-1/2 hrs.

Went in hole w/2-3/8" 4.7# EUE tbg w/well blowing to 5242' without tagging sand. Set 175 jts 2-3/8" OD 4.7# J-55 EUE J&L tbg. TE 5169' set @ 5182'. Nipplled down BOP and installed well head. Shut well in for the night.

6-26-80 M.I. & R.U. F.W.S. swabbing unit. Swabbed well 9 hrs. Swabbing - frac water w/ show oil. Csg. pressure when starting swabbing operation T.S.T.M. Csg. pressure at end of day 250 psi.

6-27-80 Swabbed well 6½ hrs - csg pressure remaining at 250 psi. Wtr. decreasing and oil percentage increasing. Estimated swabbing at rate of 15 bbls oil per day. Plan to put well on pump.

5-18-81 Move in and rig up MTK. Swab tbg. down. Fluid level on 1st run 2800' down. Rig up B.O.P.

5-19-81 Swab tbg. down. Fluid level 3800' down on 1st run. P.U. tbg. Tag sand at 5560 RKB. Clean out sand. Didn't recover any frac balls after circulating 2 hrs. P.O.O.H. G.I.H. w/ tbg., sliding sleeve and Model K cement stinger. Unable to sting into cement retainer. Set down all tbg. weight. No loss of circulation or increase in pump pressure. Shut down over night.

5-20-81 Able to sting into retainer but not enough to open parts. P.O.O.H. Lay down sliding sleeve and stinger. G.I.H. w/ 4-3/4 bit. Drilling cement retainer. Circulated out lot of mill varnish - small amount of rubber. Went to PBTD w/ bit. Shut down due to strong winds.

5-21-81 Well kicked off during night. Turned flow line and blew hole under rig. Fill in hole. Clean location. Rig down. Rig up opposite side of well head.

5-22-81 Opened well up. Load tbg. w/ water. Land tbg. as follows: 194 jts. 2-3/8" OD, 4.7#, J-55, 8 Rd, EUE tbg. T.E. 5720.47' set at 5733' RKB. Left 4-3/4" bit and bit sub on bottom of tbg. Rig down MTK.

dugan production corp.

June 1, 1981

Case 7281

Joe D. Ramey
Division Director
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Re: Application for Downhole Commingling
Windfall #10 Well (Basin Dakota Pool
and Gallegos Gallup Pool)
San Juan County, New Mexico

Dear Mr. Ramey:

Enclosed please find three copies of the above referenced Application.

I previously verbally requested this matter be placed on the June 17, 1981 Docket and was advised by the New Mexico Oil Conservation Division that this request would be honored. I was also advised that a written application must be filed with the NMOCD on or before June 7, 1981.

Please advise if you need any further information.

Sincerely,

Tommy Roberts

Tommy Roberts
Attorney

nw

enclosures

709 BLOOMFIELD RD. • P. O. BOX 208 • FARMINGTON, NEW MEXICO 87401 • PHONE: 505-325-1821

cc: Tenneco Oil Company
P.O. Box 3249
Englewood, CO 80155

Shell Oil Company
P.O. Box 576
Houston, TX 77001

Depco Inc.
1025 Petroleum Club Bldg.
Denver, CO 80202

Husky Oil Co.
600 S. Cherry Str.
Denver, CO 80222

Continental Oil Co.
Mineral Lease Records
P.O. Box 2197
Houston, TX 77001

Oklahoma Oil Co.
1120 One Energy Square
4925 Greenville Ave.
Dallas, TX 75206

Tesoro Oil Co.
First of Denver Plaza
Suite 2000
Denver, CO 80202

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of
Dugan Production Corp. for Downhole
Commingling of the Windfall #10 Well
in San Juan County, New Mexico

Case 7281

APPLICATION

Pursuant to Rule 303 C of the Rules and Regulations of the State of New Mexico Oil Conservation Division, The Applicant, Dugan Production Corp., by and through its attorney, Tommy Roberts, hereby makes application for approval of downhole commingling in the well bore of the Windfall #10 Well in San Juan County, New Mexico.

The Applicant further states:

1. The Operator of the Windfall #10 Well will be the Applicant, Dugan Production Corp., whose address is P.O. Box 208, Farmington, NM 87401.

2. The Windfall #10 Well will be located on Federal Oil and Gas Lease Serial No. 11773 insofar as said lease covers the following described lands:

Township 26 North, Range 11 West, NMPM

Section 31: W/2 (Gallegos Gallup Pool)

Section 31: W/2 (Basin Dakota Pool)

3. The legal location of the well will be as follows:

Township 26 North, Range 11 West, NMPM

Section 31: Unit Letter F

San Juan County, New Mexico

4. The Windfall #10 Well is not currently dually completed in the Gallegos Gallup Pool and the Basin Dakota Pool.

5. The Windfall #10 Well will be capable of only low marginal production from the Gallegos Gallup Pool, and will be capable of only low marginal production from the Basin Dakota Pool.

6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

8. All operators of leases offsetting the dedicated acreage for this well, the U.S. Geological Survey and the Supervisor of the District III Office of the New Mexico Oil Conservation Division have been mailed a copy of this Application.

WHEREFORE, the Applicant requests this Application be set for hearing on June 17, 1981, and that after said hearing the New Mexico Oil Conservation Division grant this Application by giving approval to the downhole commingling of the Windfall #10 Well in San Juan County, New Mexico.

Respectfully submitted,

Tommy Roberts

Tommy Roberts
Attorney for Applicant
P.O. Box 208
Farmington, NM 87401

WINDFALL #10 WELL

Application For Approval of Downhole Commingling
Dugan Production Corp.

OFFSET LEASES AND OPERATORS

1. USA NM 0553884-A
Township 26 North, Range 12 West, NMPM
Section 25: SE/4
San Juan County, New Mexico

OPERATOR: Tenneco Oil Company
P.O. Box 3249
Englewood, CO 80155

2. USA NM 61
Township 26 North, Range 12 West, NMPM
Section 36: E/2
San Juan County, New Mexico

OPERATOR: Tenneco Oil Company

3. USA SF 070864
Township 25 North, Range 12 West, NMPM
Section 1: NE/4
San Juan County, New Mexico

OPERATOR: Shell Oil Company
P.O. Box 576
Houston, TX 77001

4. USA NM 13051
Township 26 North, Range 11 West, NMPM
Section 30: Lots 3 & 4
San Juan County, New Mexico

OPERATOR: Unleased

5. USA NM 0359212
Township 26 North, Range 11 West, NMPM
Section 30: E/2 of SW/4
San Juan County, New Mexico

OPERATOR: Depco Inc. - 50%
1025 Petroleum Club Bldg.
Denver, CO 80202

OPERATOR: Husky Oil Co. - 50%
600 S. Cherry Str.
Denver, CO 80222

6. Indian Lease No. I-149-Ind 7971
Township 26 North, Range 11 West, NMPM
Section 30: SE/4
Section 31: NE/4
San Juan County, New Mexico

OPERATOR: Continental Oil Co. - 50%
Mineral Lease Records
P.O. Box 2197
Houston, TX 77001

OPERATOR: Tenneco Oil Company - 50%

7. USA NM 11773

Township 26 North, Range 11 West, NMPM
Section 31: SE/4
San Juan County, New Mexico

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, NM 87401

8. NOO-C-14-20-5210

Township 25 North, Range 11 West, NMPM
Section 6: NW/4
San Juan County, New Mexico

OPERATOR: Oklahoma Oil Co. - 50% ORRI
(Surface to 5800')
1120 One Energy Square
4925 Greenville Ave.
Dallas, TX 75206

OPERATOR: Tesoro Oil Co. - Remaining Interest
First of Denver Plaza
Suite 2000
Denver, CO 80202

9. USA SF 078062

Township 25 North, Range 11 West, NMPM
Section 6: NE/4
San Juan County, New Mexico

OPERATOR: Shell Oil Company

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of Dugan Production Corp. for Downhole Commingling of the Windfall #10 Well in San Juan County, New Mexico

Case 7281

APPLICATION

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Section 31: W/2 (Basin Dakota Pool)

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San Juan County, New Mexico

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Respectfully submitted,

Tommy Roberts

Tommy Roberts
Attorney for Applicant
P.O. Box 208
Farmington, NM 87401

WINDFALL #10 WELL

Application For Approval of Downhole Commingling
Dugan Production Corp.

OFFSET LEASES AND OPERATORS

1. USA NM 0553884-A
Township 26 North, Range 12 West, NMPM
Section 25: SE/4
San Juan County, New Mexico

OPERATOR: Tenneco Oil Company
P.O. Box 3249
Englewood, CO 80155

2. USA NM 61
Township 26 North, Range 12 West, NMPM
Section 36: E/2
San Juan County, New Mexico

OPERATOR: Tenneco Oil Company

3. USA SF 070864
Township 25 North, Range 12 West, NMPM
Section 1: NE/4
San Juan County, New Mexico

OPERATOR: Shell Oil Company
P.O. Box 576
Houston, TX 77001

4. USA NM 13051
Township 26 North, Range 11 West, NMPM
Section 30: Lots 3 & 4
San Juan County, New Mexico

OPERATOR: Unleased

5. USA NM 0359212
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Section 30: E/2 of SW/4
San Juan County, New Mexico

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1025 Petroleum Club Bldg.
Denver, CO 80202

OPERATOR: Husky Oil Co. - 50%
600 S. Cherry Str.
Denver, CO 80222

6. Indian Lease No. I-149-Ind 7971
Township 26 North, Range 11 West, NMPM
Section 30: SE/4
Section 31: NE/4
San Juan County, New Mexico

OPERATOR: Continental Oil Co. - 50%
Mineral Lease Records
P.O. Box 2197
Houston, TX 77001

OPERATOR: Tenneco Oil Company - 50%

7. USA NM 11773

Township 26 North, Range 11 West, NMPM
Section 31: SE/4
San Juan County, New Mexico

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, NM 87401

8. NOO-C-14-20-5210

Township 25 North, Range 11 West, NMPM
Section 6: NW/4
San Juan County, New Mexico

OPERATOR: Oklahoma Oil Co. - 50% ORRI
(Surface to 5800')
1120 One Energy Square
4925 Greenville Ave.
Dallas, TX 75206

OPERATOR: Tesoro Oil Co. - Remaining Interest
First of Denver Plaza
Suite 2000
Denver, CO 80202

9. USA SF 078062

Township 25 North, Range 11 West, NMPM
Section 6: NE/4
San Juan County, New Mexico

OPERATOR: Shell Oil Company

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of
Dugan Production Corp. for Downhole
Commingling of the Windfall #10 Well
in San Juan County, New Mexico

Case 7281

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San Juan County, New Mexico

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Tommy Roberts

Tommy Roberts
Attorney for Applicant
P.O. Box 208
Farmington, NM 87401

WINDFALL #10 WELL

Application For Approval of Downhole Commingling
Dugan Production Corp.

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Township 26 North, Range 12 West, NMPM
Section 25: SE/4
San Juan County, New Mexico

OPERATOR: Tenneco Oil Company
P.O. Box 3249
Englewood, CO 80155

2. USA NM 61
Township 26 North, Range 12 West, NMPM
Section 36: E/2
San Juan County, New Mexico

OPERATOR: Tenneco Oil Company

3. USA SF 070864
Township 25 North, Range 12 West, NMPM
Section 1: NE/4
San Juan County, New Mexico

OPERATOR: Shell Oil Company
P.O. Box 576
Houston, TX 77001

4. USA NM 13051
Township 26 North, Range 11 West, NMPM
Section 30: Lots 3 & 4
San Juan County, New Mexico

OPERATOR: Unleased

5. USA NM 0359212
Township 26 North, Range 11 West, NMPM
Section 30: E/2 of SW/4
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OPERATOR: Depco Inc. - 50%
1025 Petroleum Club Bldg.
Denver, CO 80202

OPERATOR: Husky Oil Co. - 50%
600 S. Cherry Str.
Denver, CO 80222

6. Indian Lease No. I-149-Ind 7971
Township 26 North, Range 11 West, NMPM
Section 30: SE/4
Section 31: NE/4
San Juan County, New Mexico

OPERATOR: Continental Oil Co. - 50%
Mineral Lease Records
P.O. Box 2197
Houston, TX 77001

OPERATOR: Tenneco Oil Company - 50%

7. USA NM 11773

Township 26 North, Range 11 West, NMPM
Section 31: SE/4
San Juan County, New Mexico

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, NM 87401

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Township 25 North, Range 11 West, NMPM
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OPERATOR: Oklahoma Oil Co. - 50% ORRI
(Surface to 5800')
1120 One Energy Square
4925 Greenville Ave.
Dallas, TX 75206

OPERATOR: Tesoro Oil Co. - Remaining Interest
First of Denver Plaza
Suite 2000
Denver, CO 80202

9. USA SF 078062

Township 25 North, Range 11 West, NMPM
Section 6: NE/4
San Juan County, New Mexico

OPERATOR: Shell Oil Company

Memo

From

FLORENE DAVIDSON
ADMINISTRATIVE SECRETARY

To

Called in May 21, 1981

Hugan Production Corp.

Downhole Commingling

Undesignated Gallup

Basin-Dakota

Windfall #10-F

Section 31, T 26N, R 11W

San Juan County

OIL CONSERVATION COMMISSION-SANTA FE

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7281

Order No. R-6220

APPLICATION OF DUGAN PRODUCTION CORPORATION FOR DOWNHOLE COMMINGLING, SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 17, 19 81, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of June, 19 81, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Dugan Production Corporation, is the owner and operator of the Windfall Well No. 10, located in Unit F of Section 31, Township 26 North, Range 11 West, NMPM, San Juan County, New Mexico.

(3) That the applicant seeks authority to commingle Undesignated Gallup and Basin-Dakota production within the wellbore of the above-described well.

(4) That from the Undesignated Gallup zone, the subject well is capable of low marginal oil production only.

(5) That from the Basin-Dakota zone, the subject well is capable of low marginal gas production only.

(6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, all of ~~percent of~~ the commingled oil production should be allocated to the Undesignated Gallup zone, and all of ~~percent of~~ the commingled gas production to the Basin-Dakota zone.

~~(ALTERNATE)~~

~~(9) That in order to allocate the commingled production to each of the commingled zones in the wells, applicant should consult with the supervisor of the Aztec district office of the Division and determine an allocation formula for each of the production zones.~~

IT IS THEREFORE ORDERED:

(1) That the applicant, Dugan Production Corporation, is hereby authorized to commingle Undesignated Gallup and Basin-Dakota production within the wellbore of the Windfall Well No. 10, located in Unit F of Section 31, Township 26 North, Range 11 West, NMPM, San Juan County, New Mexico.

~~(2) That the applicant shall consult with the Supervisor of the Aztec district office of the Division and determine an allocation formula for the allocation of production to each zone in each of the subject wells.~~

~~(ALTERNATE)~~

(2) That all of ~~percent of~~ the commingled oil production shall be allocated to the Undesignated Gallup zone and all of ~~percent of~~ the commingled gas production shall be allocated to the Basin-Dakota zone.

(3) That the operator of the subject well shall immediately notify the Division's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.