



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

RECEIVED

OCT 13 '89

ARNEY CARRUTHERS  
GOVERNOR

October 12, 1989

C. C. D.  
ARTESIA, OFFICE

POST OFFICE BOX 2018  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

Arch Petroleum Inc.  
Penthouse II A  
Fort Worth Club Tower  
Fort Worth, Texas 76102

*Greetings  
Mr. Catanzach  
from J. Robinson*

Attention: Mr. Jim B. Paschall

Re: Artesia Waterflood Project No. 3

Dear Jim:

Enclosed with this letter please find a copy of Division Order No. WFX-588, which authorizes you to utilize the Resler Yates State Well Nos. 55, 370, 379, and 380 for injection within the above referenced waterflood project. Please note that the order directs you to perform remedial work on Well No. 55 and further directs you to re-enter and re-plug the Resler Yates State Well No. 48. In addition, I have also required that you demonstrate that the Resler Yates Well No. 61, a producing well, is adequately constructed so as to protect fresh water and confine injected fluid to the injection zone.

There are several other wells within the area of review, either producing or plugged and abandoned, that I still have serious concerns about. These wells are shown on page 2 of this letter. From the data submitted in the application, it is very difficult to determine if these wells are adequately constructed. I have not required that remedial work be performed on these wells at this time due to their location relative to the four injection wells, and due to the fact that no waterflow problems have been encountered in the flood area. Please be advised however, that any expansion of injection operations to the north or northeast, or any subsequent waterflow problems encountered, will likely be cause for remedial work on these wells to be performed. If any further information is obtained concerning the construction of these wells, please forward it to myself for evaluation.

As with other waterflood projects, the Division will maintain a strong field presence and will closely monitor operations on the Artesia Project, and we will expect that any subsequent problems be corrected in a timely and acceptable manner.

Sincerely,

*David Catanzach*  
David Catanzach

P. 29-18-28  
Arch Petr. Inc.

## Repair Work

Orig. 7 3/4 Bit  
100% Circ.  
T. cement @ 36'  
8. " @ 46' 10' plug  
lost circ.

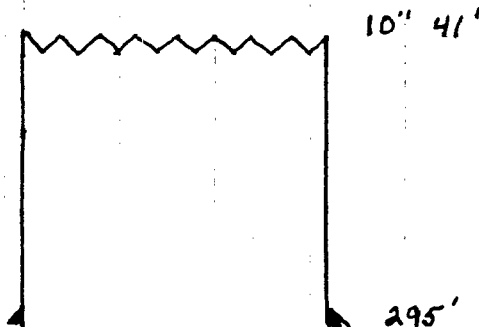
Tg. @ 267' wooden plug?  
D.O. 275'

Resler Yates St. 48 Area of Review Re-entry WFX 588  
Started out of hole  
4 10" fall over to one  
side. Operator decided  
to plug well.

P+R as follows

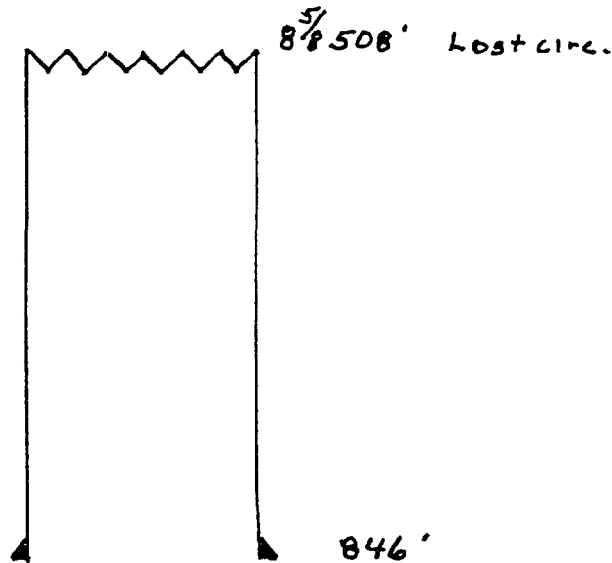
Top of Qn. 1545'

1. 100' @ 1595' Tag
2. 100' @ 896' 8 5/8 shoe  
Tag
3. 100' @ 558' 8 5/8 stub  
Tag
4. 100' @ 345' 10" shoe  
Tag
5. 90' Surf. 10" stub  
gel between plugs



335' lost circ.

Tagged 8 5/8 508'  
continued to  
2023' Tg. Cement  
2037 T.D. 10' Plug



Copies to:  
D. Catanach  
P. Childs

TD. 2037'

NEW MEXICO OIL CONSERVATION COMMISSION  
FIELD TRIP REPORT

CLASSIFICATION	FACILITY	HOURS	QUARTER	TRIP INFORMATION			
				Name	Date	Miles	District
				Johnny Robinson	1-31-90	129	11
				Time of Departure	8:00 am	Time of Return	5:30 pm
						Car No.	10276
In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.							
Signature _____							

T	U	I	2		1 Well G-16-17-30 Devon Energy Corp, Etz St Ut Tr 8 #1. Operator is rigging up. Will finish tomorrow.																								
R	U	I	4	2	1 Well P-29-18-28 Arch Petr Corp, State 647 #48. Operator WIH with 7 3/4 bit. Drilled out 10' cement plug at 36'. Tagged up at 267'. Tried to drill out for 20 minutes with no luck. WIH with magnet and failed to retrieve fish. Will go in with bit tomorrow.																								
R	U	I	3		1 Well A-33-18-28 DeKalb Energy Corp, State 647 #205. Operator repaired cracked head. Loaded backside and ran MIT. Casing held 250 PSI for 15 minutes. OK.																								
<table> <tr> <td>Mileage</td><td></td><td>Per Diem</td><td></td><td>Hours</td><td></td></tr> <tr> <td>UIC</td><td>129</td><td>UIC</td><td>6.00</td><td>UIC</td><td>9 1/2</td></tr> <tr> <td>RFA</td><td></td><td>RFA</td><td></td><td>RFA</td><td></td></tr> <tr> <td>Other</td><td></td><td>Other</td><td></td><td>Other</td><td></td></tr> </table>						Mileage		Per Diem		Hours		UIC	129	UIC	6.00	UIC	9 1/2	RFA		RFA		RFA		Other		Other		Other	
Mileage		Per Diem		Hours																									
UIC	129	UIC	6.00	UIC	9 1/2																								
RFA		RFA		RFA																									
Other		Other		Other																									

TYPE INSPECTION PERFORMED	INSPECTION CLASSIFICATION	NATURE OF SPECIFIC WELL OR FACILITY INSPECTED
H - Housekeeping	U - Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SWD, Indry Injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)	D - Drilling
P - Plugging	R - Inspections relating to Reclamation Fund Activity	P - Production
C - Plugging Cleanup	O - Other - Inspections not related to injection or the Reclamation Fund	I - Injection
T - Well Test	E - Indicates some form of enforcement action taken in the field (show immediately below the letter U, R or O)	C - Combined prod. inj. operations
R - Repair/Workover		R - SWD
F - Waterflow		U - Underground Storage
H - Hiccup or Spill		C - General Operation
M - Water Contamination		F - Facility or location
O - Other		H - Heating
		O - Other

NEW MEXICO OIL CONSERVATION COMMISSION  
FIELD TRIP REPORT

Name Johnny Robinson Date 2-1-90 Miles 159 District II  
Time of Departure 7:30 am Time of Return 4:30 pm Car No. 10276

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature \_\_\_\_\_

TYPE	INSPECTION	FACILITY	HOURS	QUARTER	HOURS
T	U	I	2		1 Well G-16-17-30 Devon Energy Corp, Etz St Ut Tr8 #1. Witnessed tracer and temperature survey. Temp survey showed possible channel from 2794 down to 2803'.
R	U	I	1		1 Well O-10-17-31 Harcom Oil Co., H.E. West B #20. WIH with CIBP and set at 3800;. WIH with tubing and packer, circulated packer fluid, set packer and ran MIT on casing.
R	U	I	1		1 Well K-10-17-31 Socorro Petr Co, H.E. West B #14. Circulated packer fluid and ran MIT on casing. Held 360 PSI for 15 minutes.
R	U	C	4		1 Well P-29-18-28 Arch Petr Corp, State 647 #48. WIH with 7 3/4" mill to 267 ft and drilled out 8 ft of wood post. Went on down to 2037 ft. Will run casing and cement tomorrow.

Mileage	Per Diem	Hours
UIC <u>159</u>	UIC <u>6.00</u>	UIC <u>8</u>
RFA _____	RFA _____	RFA _____
Other _____	Other _____	Other _____

TYPE INSPECTION PERFORMED

INSPECTION CLASSIFICATION

NATURE OF SPECIFIC WELL OR FACILITY INSPECTED

H - Housekeeping  
P - Plugging  
C - Plugging Cleanup  
T - Well Test  
R - Repair/Workover  
F - Waterflow  
M - Mishap or Spill  
V - Water Contamination  
O - Other

U - Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SKD, 2ndry Injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)  
R - Inspections relating to Reclamation Fund Activity  
O - Other - Inspections not related to injection or The Reclamation Fund

E - Indicates some form of enforcement action taken in the field (show immediately below the letter U, R or O)

D - Drilling  
P - Production  
I - Injection  
C - Combined prod. inj. operations  
B - SKD  
U - Underground Storage  
G - General Operation  
F - Facility or location  
H - Hunting  
O - Other

# FIELD TRIP REPORT

Name Johnny Robinson Date 2-2-90 Miles 120 District 11  
 Time of Departure 8:00 am Time of Return 3:00 pm Car No. 10276

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature \_\_\_\_\_

P U C 5  
 T U I 1

- 1 Well P-29-18-28 Arch Petr Co, State 647 A #48. Operator tried to establish circulation and couldn't. Came up to 335 ft. and pumped lost circulation material. Came out of hole with tubing to run casing in and noticed 10" at 41 ft. has fell over to one side. Operator decided to plug well. WIH with tubing and spotted a 50 Sx plug at 1595 ft. Will tag tomorrow.
- 1 Well K-16-17-30 Devon Energy, Etz St Ut Tr 3 #7. Witnessed temp. survey. There was no channeling upward and a slight channeling downward.

## Mileage

UIC 120

RFA \_\_\_\_\_

Other \_\_\_\_\_

## Per Diem

UIC 6.00

RFA \_\_\_\_\_

Other \_\_\_\_\_

## Hours

UIC 6

RFA \_\_\_\_\_

Other \_\_\_\_\_

## TYPE INSPECTION PERFORMED

- H - Housekeeping
- P - Plugging
- C - Plugging Cleanup
- T - Well Test
- H - Repair/Workover
- F - Waterflow
- H - Mishap or Spill
- W - Water Contamination
- O - Other

## INSPECTION CLASSIFICATION

- U - Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SWD, 2ndry injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)
- R - Inspections relating to Reclamation Fund Activity
- O - Other - Inspections not related to injection or The Reclamation Fund
- E - Indicates some form of enforcement action taken in the field (show immediately below the letter U, R or O)

## NATURE OF SPECIFIC WELL OR FACILITY INSPECTED

- D - Drilling
- P - Production
- I - Injection
- C - Combined prod. inj. operations
- R - SWD
- U - Underground Storage
- G - General Operation
- F - Facility or location
- H - Heating
- O - Other

NEW MEXICO OIL CONSERVATION COMMISSION  
FIELD TRIP REPORT

Name Johnny Robinson Date 2-3-90 Miles 160 District 11  
Time of Departure 7:00 am Time of Return 4:00 pm Car No. 10276

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature \_\_\_\_\_

CLASSIFICATION	ACTIVITY	HOURS	QUARTER HOURS	DESCRIPTION	
P	U	C	6	2	1 Well P-29-18-28 Arch Petr Corp, State 647 A #48. WIH with tubing and tagged TOC at 1490'. Pulled tubing to 896' and spotted 50 Sx of Class C with 4% Cal.Cl. WOC 2 hours and tagged cement at 740 ft. Spotted 60 Sx of Class C cement with 4% Cal. Cl at 558'. WOC tagged 508' spotted 700 gal. flo check, Al. Cl. water, 25 Sx of C cement 1/4 lb flocele tagged cement at 499'.
T	U	I	1		1 Well F-18-17-28 Blue Sky Prod Corp, Hastie #8. Witnessed MIT. Well held 280 PSI for 8 minutes and lost pressrue. Pumped up to 500 PSI unable to establish any rate. Casing held 80 PSI. Will put on monitor list.
P	U	I		2	1 Well E-30-17-28 Blue Sky Prod Corp, Sunray State #1. Casing is full of cement. No MIT necessary at this time.

Mileage	Per Diem	Hours
UIC <u>160</u>	UIC <u>6.00</u>	UIC <u>8</u>
RFA _____	RFA _____	RFA _____
Other _____	Other _____	Other _____

TYPE INSPECTION PERFORMED

INSPECTION CLASSIFICATION

NATURE OF SPECIFIC WELL OR FACILITY INSPECTED

H - Housekeeping  
P - Plugging  
C - Plugging Cleanup  
T - Well Test  
R - Repair/Workover  
F - Waterflow  
M - Mishap or Spill  
W - Water Contamination  
O - Other

U - Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SWD, 2ndry injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)  
R - Inspections relating to Reclamation Fund Activity  
O - Other - Inspections not related to injection or the Reclamation Fund  
E - Indicates some form of enforcement action taken in the field (show immediately below the letter U, R or O)

D - Drilling  
P - Production  
I - Injection  
C - Combined prod. inj. operations  
n - SWD  
U - Underground Storage  
G - General Operation  
F - Facility or location  
H - Heating  
O - Other

NEW MEXICO OIL CONSERVATION COMMISSION  
FIELD TRIP REPORT

Name Johnny Robinson Date 2-4-90 Miles 160 District 11  
Time of Departure 9:00 am Time of Return 3:00 pm Car No. 10276

In the space below indicate the purpose of the trip and the duties performed, listing wells or leases visited and any action taken.

Signature \_\_\_\_\_

P U L 6

1 Well 9-29-18-28 Arch Petr Corp, State 647 A #48.  
WIH with tubing and tagged at 499'. Spotted 20 Sx of Class C cement. Came up to 334' pumped 60 Sx Class C with 4% Cal.Cl + flo seal. WOC 2 hours and tagged at 332'. Pumped 100 gal flo check and 50 Sx Class C with 4% Cal.C. WOC 2 hours and tagged at 227'. Came up to 90' pumped 5 Sx paper 250 gal of flowcheck & 100 Sx of Class C with 4% Cal.Cl WOC 2 hours and tag. Will top off with cement.

<u>Mileage</u>	<u>Per Diem</u>	<u>Hours</u>
UIC <u>160</u>	UIC <u>6.00</u>	UIC <u>6</u>
RFA _____	RFA _____	RFA _____
Other _____	Other _____	Other _____

TYPE INSPECTION  
PERFORMED

INSPECTION  
CLASSIFICATION

NATURE OF SPECIFIC WELL  
OR FACILITY INSPECTED

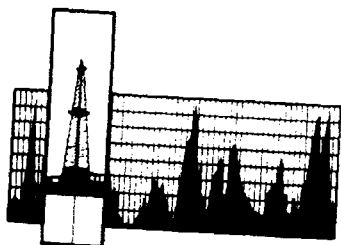
U - Housekeeping  
P - Plugging  
C - Plugging Cleanup  
T - Well Test  
R - Repair/Workover  
F - Waterflow  
H - Mishap or Spill  
W - Water Contamination  
O - Other

U - Underground Injection Control - Any inspection of or related to injection project, facility, or well or resulting from injection into any well. (SWD, Indry Injection and production wells, water flows or pressure tests, surface injection equipment, plugging, etc.)  
R - Inspections relating to Reclamation Fund Activity

O - Other - Inspections not related to injection or the Reclamation Fund

E - Indicates some form of enforcement action taken in the field (show immediately below the letter U, R or O)

D - Drilling  
P - Production  
I - Injection  
C - Combined prod. Inj. operations  
R - SWD  
U - Underground Storage  
G - General Operation  
F - Facility or location  
H - Hauling  
O - Other



# Darrell W. Smith Co.

Box 1105 • Midland, Texas

Box 455 • Hobbs, New Mexico

THE FOLLOWING DISTRIBUTION HAS BEEN MADE ON CORE ANALYSIS  
FINAL REPORTS OF THE:

GRARIDGE OIL CORPORATION

WELL NO. 332 RESSLER - YATES

**Copies:**

- (2) Graridge Oil Corporation  
210 Carper Building  
Artesia, New Mexico
- (4) Graridge Oil Corporation  
Box 752  
Breckenridge, Texas

Date Received JUL 25 1962			
ROUTE TO		ROUTE TO	
	DATE CHECKED		DATE CHECKED
LC		RLE	
OHR	✓ 7-25	CRA	
TAF	✓ 7/26	JLMc	
FPD		BGE	✓ 7-30
WFB		JAW	
BGR	✓ 7/27	JWC	
CWS			
Mail To:		FILE:	
Graham		JR	



# TREAT-RITE WATER LABORATORIES

INCORPORATED

BOX 548 - MONAHANS, TEXAS

## RESULT OF WATER ANALYSES

TO: Mr. J. C. Chapman

P. O. Box 1147, Artesia, New Mexico

LABORATORY NO. M9586

SAMPLE RECEIVED 9-3-58

RESULTS REPORTED 9-6-58

COMPANY The Ibex Company LEASE M. R. & Y.  
FIELD OR POOL Artesia  
SECTION \_\_\_\_\_ BLOCK \_\_\_\_\_ SURVEY \_\_\_\_\_ COUNTY Eddy STATE NM

### SOURCE OF SAMPLE, AND DATE TAKEN:

- NO. 1 Raw fresh water - taken from water well west of plant. 9-3-58  
NO. 2 Raw salt water - taken from water supply well line. 9-3-58  
NO. 3 Filtered water - taken from filter effluent. 9-3-58  
NO. 4 Treated water - taken from injection pump suction. 9-3-58

### REMARKS:

### CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
SPECIFIC GRAVITY AT 60°F.	1.0018	1.0346	1.0341	1.0283
PH WHEN SAMPLED	7.3	6.6	6.6	6.7
PH WHEN RECEIVED	7.5	6.9	7.1	6.9
TOTAL ALKALINITY AS CaCO <sub>3</sub>	140	752	756	624
SUPERSATURATION AS CaCO <sub>3</sub>	-	52	60	36
UNDERSATURATION AS CaCO <sub>3</sub>	4	-	-	-
TOTAL HARDNESS AS CaCO <sub>3</sub>	715	6,089	5,609	4,765
CALCIUM AS CaCO <sub>3</sub>	451	3,934	3,936	3,209
MAGNESIUM AS CaCO <sub>3</sub>	264	2,155	1,673	1,556
SODIUM AND/OR POTASSIUM				
SULFATE AS SO <sub>4</sub>	538	4,410	4,003	3,345
CHLORIDE AS NaCl	54	37,319	37,337	30,721
SILICA AS SiO <sub>2</sub>	11.5	11.6	12.7	12.7
IRON AS Fe	0.32	1.5	0.85	0.31
MANGANESE AS Mn				
BARIUM AS Ba	none	none	none	none
TURBIDITY ELECTRIC	0	9.8	19.3	5.6
COLOR AS Pt	1.5	6.2	7.7	8.1
DISSOLVED SOLIDS AT 103 °C.				
TOTAL SOLIDS AT 103 °C.				
TEMPERATURE °F.	71	105	102	89
CARBON DIOXIDE CALCULATED	14.0	376	378	250
DISSOLVED OXYGEN WINKLER	4.2	none	none	none
HYDROGEN SULPHIDE	none	650	600	600
RESIDUAL CHLORINE	none	none	none	none
RESISTIVITY OHMS/CC	890	28.5	26.5	30
Oil, as turbidity		3.2	15.3	

NOTE: All Results Reported as Parts Per Million. Divide by 17.1 to Convert to Grains Per Gallon

Additional Determinations and Remarks

ILLEGIBLE

# TREAT-RITE WATER LABORATORIES

INCORPORATED

BOX 548 - MONAHANS, TEXAS

## RESULT OF WATER ANALYSES

TO: Mr. J. C. Chapman LABORATORY NO. 119586 (page 2)  
P. O. Box 1147, Artesia, N. M. SAMPLE RECEIVED 9-3-58  
 RESULTS REPORTED 9-6-58

COMPANY The Ibox Company LEASE M. R. & Y.  
 FIELD OR POOL Artesia  
 SECTION \_\_\_\_\_ BLOCK \_\_\_\_\_ SURVEY \_\_\_\_\_ COUNTY Eddy STATE NM

### SOURCE OF SAMPLE, AND DATE TAKEN:

NO. 1 Produced water - taken from McNutt State battery. 9-3-58  
 NO. 2 \_\_\_\_\_  
 NO. 3 \_\_\_\_\_  
 NO. 4 \_\_\_\_\_

REMARKS: \_\_\_\_\_

### CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
SPECIFIC GRAVITY AT 60°F.	1.0673			
PH WHEN SAMPLED	8.5			
PH WHEN RECEIVED	8.7			
TOTAL ALKALINITY AS CaCO <sub>3</sub>	280			
SUPERSATURATION AS CaCO <sub>3</sub>	84			
UNDERSATURATION AS CaCO <sub>3</sub>	—			
TOTAL HARDNESS AS CaCO <sub>3</sub>	14,710			
CALCIUM AS CaCO <sub>3</sub>	6,493			
MAGNESIUM AS CaCO <sub>3</sub>	8,217			
SODIUM AND/OR POTASSIUM				
SULFATE AS SO <sub>4</sub>	3,688			
CHLORIDE AS NaCl	85,505			
SILICA AS SiO <sub>2</sub>	6.0			
IRON AS Fe	7.2			
MANGANESE AS Mn				
BARIUM AS Ba	none			
TURBIDITY ELECTRIC	54.8			
COLOR AS Pt	7.4			
DISSOLVED SOLIDS AT 103 °C.				
TOTAL SOLIDS AT 103 °C.				
TEMPERATURE °F.	97			
CARBON DIOXIDE CALCULATED	2.0			
DISSOLVED OXYGEN WINKLER	none			
HYDROGEN SULPHIDE	15			
RESIDUAL CHLORINE	none			
RESISTIVITY OHMS/cc	15			

NOTE: All Results Reported as Parts Per Million. Divide by 17.1 to Convert to Grains Per Gallon

Additional Determinations and Remarks	Actual Turbidities, ppm	Theoretical Compatible Turbidities, ppm
Mixture of waters		
Raw fresh and raw salt water	8.4	4.9
Injection pump suction water and produced water	29.9	30.2

Letter of recommendation attached.

By \_\_\_\_\_

Yates Corporation #355 Resler Yates State

LOCATION: 330' FNL & 990' FKL of section 32-18S-28E, Eddy County, N.M.

ELEVATION: 3545' GR; 3555' DF; 3556' KB

DISCUSSION:

This well was drilled from top to bottom with rotary equipment of Yates Drilling Company, Artesia, New Mexico. Air was utilized as a drilling media from surface to total depth. The 1st Grayburg sand, which is under flood in this area, was encountered at 2018' (+1538). It appears that the flood has not yet effected this well as it did not make any free oil or gas while the pay section was being cored with air. The pay section looked good, however. It was saturated and had very good porosity and permeability. A streak of green shale that has appeared in the pay in many wells in this field was also present in this well. It appears from 2010-14' on the acoustic log.

This well ran normal structurally and commercial pay was encountered in the 1st Grayburg sand.

PERTINENT DEPTHS:

T/Queen Sand	1556 (+1990)
B/Queen Sand	1606 (+1950)
T/1st GB Sand	2018 (+1538)
B/1st GB Sand	2038 (+1518)
Total Depth (Driller)	2064
Total Depth (Welex)	2061

CORES:

(Air)  
Core #1 - 1994-2008 - rec. 14' (core barrel jammed)  
Core #2 - 2008-2034 - full recovery

LOGS:

Welex Gamma Ray-Acoustic log from 0-T.D.

REMARKS:

The pay section of this well was picked up at the well and analysed by Darrell W. Smith Co. in their laboratory at Hobbs, New Mexico.

TOM HAWLEY

TH:bh

cc: Well Record thru Bob H., Tom F.  
Paul Darnell  
BJ File

ILLEGIBLE

## WELL RECORD

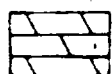
Company The Mex. Company Date This Form Filled In 12-2-57Lease Name Reston Yates State Name of Field Artesia Well No. 12County Eddy Survey UNIT P. 330 FSL-200 FSL-500 sec-24 Block No. 27 Sec. No. 27(Notice of Intention to Drill) Was Filed in Name of Flynn Welch Yates Completion Date 6-22-1925

CASING SIZE Wt. & Thd.	PUT IN WELL Feet	PULLED OUT Feet	LEFT IN WELL Feet	SACKS CEMENT	HOLE SIZE	EXPECTED RECOVERABLE	REMARKS
10 3/4	265						
8 5/8	860						

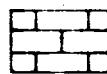
Initial Production of Gas—Volume MCF 24 hrs. Pressure 24 lbs. per square inchInitial Production of Oil: Barrels Gr. Barrels of water with oil Productive Zones Description 1900-1980 L.M.C. Measured from: 225' from surface Elevation 554'

	ROD MEASUREMENTS	TUBING MEASUREMENTS
1900 - 1980 L.M.C.	Gas anchor	Mud Anchor
1980 - 1990 - 90	Pump	Perforations
1990 - 1991 - 91	Pony rods	Seating Nipple
1991 - 1992 - 92	1/2 rods	— js. tubing
1992 - 1993 - 93	3/4 rods	Tubing nipple
1993 - 1994 - 94	Pony rods	Tubing nipple
1994 - 1995 - 95	Polish rods	Tubing nipple
1995 - 1996 - 96		
1996 - 1997 - 97		
1997 - 1998 - 98		
1998 - 1999 - 99		
1999 - 2000 - 00		
2000 - 2001 - 01		
2001 - 2002 - 02		
2002 - 2003 - 03		
2003 - 2004 - 04		
2004 - 2005 - 05		
2005 - 2006 - 06		
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2007 - 2008 - 08		
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2010 - 2011 - 11		
2011 - 2012 - 12		
2012 - 2013 - 13		
2013 - 2014 - 14		
2014 - 2015 - 15		
2015 - 2016 - 16		
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2018 - 2019 - 19		
2019 - 2020 - 20		
2020 - 2021 - 21		
2021 - 2022 - 22		
2022 - 2023 - 23		
2023 - 2024 - 24		
2024 - 2025 - 25		
2025 - 2026 - 26		
2026 - 2027 - 27		
2027 - 2028 - 28		
2028 - 2029 - 29		
2029 - 2030 - 30		
2030 - 2031 - 31		
2031 - 2032 - 32		
2032 - 2033 - 33		
2033 - 2034 - 34		
2034 - 2035 - 35		
2035 - 2036 - 36		
2036 - 2037 - 37		
2037 - 2038 - 38		
2038 - 2039 - 39		
2039 - 2040 - 40		
2040 - 2041 - 41		
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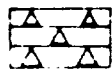
## LITHOLOGY



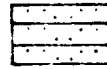
ANHYDRITE



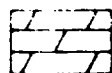
LIMESTONE



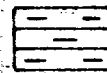
CHERT



SANDSTONE



DOLOMITE



SHALE

## DESCRIPTION OF CORE

Dol	Dolomite	oo	Oolitic
Ls	Limestone	PPP	Pin Point Porosity
Ss	Sandstone	incls	Inclusions
Ch	Chert	ptgs	Partings
Ahy	Anhydrite	St	Stain
Sh	Shale	NS	No Stain
Sulf	Sulphur	sc	Scattered
Ca	Calcite	stgr	Stringer
Carb	Carbonaceous	sl	Slightly
gil	Gilsonite	Tr	Trace
dolo	Dolomitic	NA	Not Analyzed per
lmy	Limy		Operators Instructions
sdv	Sandy	NR	Not Recovered
ahyd	Anhydritic	NSL	Not Sent to Lab
shy	Shaly	SV	Small Vugs
slty	Silty	V	Vugs
Lam	Laminations	F	Fracture
Sol Cav	Solution Cavity		
Sol Chan	Solution Channels		C Cemented
Sty	Stylolite		H Horizontal
styo	Stylolitic		I Inclined
Trip	Tripolitic		M Multiple
Fs	Fossiliferous		R Random
Gyp	Gypsum		V Vertical

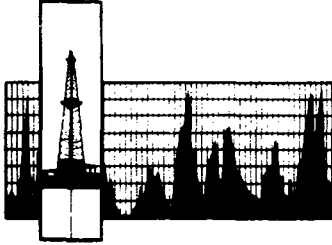
### TEXTURE

cg	Coarse Grain	d	Dense
fg	Fine Grain	fx	Fine Cryst.
F/G	Frosted Quartz Grains	mx	Medium Cryst.
gran	Granular	cx	Coarse Cryst.

### FLUORESCENCE

G	Good
F	Fair
Dl	Dull
Tr	Trace
Sc	Scattered

- \* Matrix permeability  
 \*\* Sample not suitable for analysis



## *Darrell W. Smith Co.*

Box 1105 • Midland, Texas

Box 455 • Hobbs, New Mexico

July 24, 1962

Graridge Oil Corporation  
Box 752  
Breckenridge, Texas

Re: Well No. 332 Ressler-Yates  
Artesia Field  
Eddy County, New Mexico

Gentlemen:

Attached are the results of core analysis of a section from the Grayburg formation in the above described well. The data are reported in both tabulary and graphical form.

The well was cored from 1,990 feet to 2,025 feet using air and diamond coring equipment. All of the core was recovered and sent to our Artesia laboratory where the intervals selected by a representative of your company were analyzed by Conventional Core Study.

We want to thank you for the opportunity to be of service to your company.

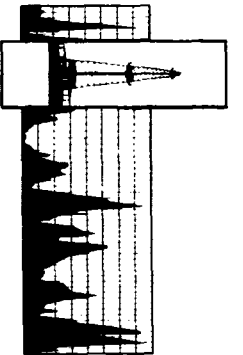
Yours very truly,

DARRELL W. SMITH COMPANY

A handwritten signature in cursive script, reading "J. M. Glenn".

J. M. Glenn,  
Laboratory Manager  
Hobbs and Artesia

JMG/d1



*Darrell W. Smith Co.*

PHONE OX 4-2511—MIDLAND, TEXAS  
PHONE EX 3-6173—HOBBBS, N. MEX.

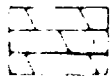
### CONVENTIONAL CORE STUDY

Operator Graridge Oil Corporation Field Artesia Formation Grayburg  
Well No. 332 Ressler-Yates Location (Not available)  
Depths 1,990 - 2,025 Date July 24, 1962 Lab No. 601-HA

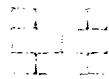
SAMPLE NO.	REPRESENTATIVE OF FEET	FOOTAGE	PERMEABILITY, MD.		EFFECTIVE POROSITY %	SATURATION % OF PORE SPACE		DESCRIPTION
			HORIZONTAL	VERTICAL		OIL	WATER	
1	1990 - 94	4.0	-	-	-	-	-	Vfg gray Ss very dolo ahyd NS NA
2	1994 - 95	1.0	14.	-	16.8	15.5	53.1	Vfg gray Ss sl dolo ahyd
3	1995 - 96	1.0	75.	-	21.6	15.7	51.4	Vfg gray Ss sl dolo ahyd
4	1996 - 97	1.0	99.	-	21.7	21.2	44.2	Vfg gray Ss sl dolo ahyd
5	1997 - 98	1.0	6.3	-	16.8	17.3	59.0	Vfg gray Ss sl dolo ahyd
6	1998 - 99	1.0	0.09	-	16.6	19.3	52.7	Vfg gray Ss sl dolo ahyd
7	1999 - 2000	1.0	19.	-	20.7	16.4	48.2	Vfg gray Ss dolo ahyd
	2000 - 01	1.0	0.31	-	12.2	22.1	51.8	Vfg gray Ss very dolo ahyd
	2001 - 02	1.0	-	-	-	-	-	Dol vgx slty ahyd NS NA
	2002 - 25	23.0	-	-	-	-	-	Dol d-vfx slty ahyd Sh ptgs NS NA

**ILLEGIBLE**

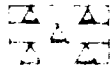
# LITHOLOGY



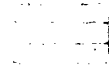
ANHYDRITE



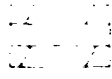
LIMESTONE



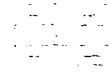
CHERT



SANDSTONE



DOLOMITE



SHALE

## DESCRIPTION OF CORE

Dol	Dolomite	oo	Oolitic
ls	Limestone	ppf	Pin Point Per sity
ss	Sandstone	incl	Inclusions
ch	Chert	ptgs	Partings
Ahy	Anhydrite	st	Stain
sh	Shale	ns	No Stain
Sul	Sulphur	sc	Scattered
Ca	Calcite	stgr	Stringer
Carb	Carbonaceous	sl	Slightly
gil	Gypsum	t	Trace
dol	Dolomite	NA	Not Analyzed per
lmy	Limey		Operator's Instruction
sd	Sandy	NR	Not Recovered
and	Anhydrite	NS	Not Sent
shy	Shaly	S	Small Log
slty	Silty	F	Fugs
Lam	Laminations	F	Fracture
Sol Cav	Solution Cavities		
Sol Chan	Solution Channels	C	Cemented
Sty	Stylolite	H	Horizontal
styo	Stylolitic	I	Inclined
Trip	Tripartite	M	Multiple
Fs	Fossiliferous	R	Random
Gyp	Gypsum	V	Vertical

## TEXTURE

10	Coarse Grain	10	Coarse
12	Fine Grain	12	Fine Gryst
14	Crystalline Grain	14	Medium Gryst
16	Granular	16	Coarse Gryst

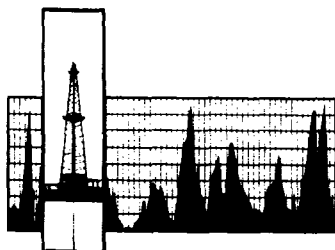
## FLUORESCENCE

G	Good
F	Fair
DI	Dim
Tr	Trace
Sc	Scattered

\* Note: Some bluish  
 \*\* Sample is not suitable for analysis

**ILLEGIBLE**





# Darrell W. Smith Co.

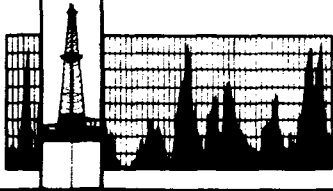
## CORE FOOTAGE SUMMARY

Operator Graridge Oil Corporation Lab No. 601-HA  
 Well No. 332 Ressler - Yates  
 Formations Grayburg  
 Depths 1,990 - 2,025  
 Field Artesia County Eddy State New Mexico  
 Location (Not Available)

### CORE INFORMATION

Intervals cored \_\_\_\_\_ from 1,990 to 2,025  
 \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_  
 \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_  
 Feet of formation cored \_\_\_\_\_ 35.0  
 Feet of formation recovered \_\_\_\_\_ 35.0  
 Feet of formation cored but not recovered \_\_\_\_\_ -0-  
 Feet of core received at laboratory for analysis \_\_\_\_\_ 35.0 35.0  
 Number of samples selected for analysis \_\_\_\_\_ 7  
 Feet of core represented by selected samples \_\_\_\_\_ 7  
 Feet of shale and/or dense barren material not analyzed \_\_\_\_\_ 28.0  
 Total footage of core accounted for in laboratory analysis \_\_\_\_\_ 35.0 35.0

The analyses herein contained have been prepared for sole use by the client ordering same. Any opinions or interpretations based thereon represent the best judgment of Darrell W. Smith Company and its employees, who make no warranty or representation as to productivity or profitability of any oil, gas or mineral well or sand in connection with which such report is used or relied on, and assume no responsibility in connection therewith.

*Darrell W. Smith Co.*OPERATOR GRARIDGE OIL CORPORATION WELL NO. 332 RESSLER-YATESFIELD ARTESIA COUNTY EDDY STATE NEW MEXICO