04/07/2014 DATE IN	SUSPENSE	PRG ENGINEER	04/08/2014 LOGGED IN	TYPE	PMAM1409856327 APP NO.

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

RECEIVED OCD
2014 APR -2 P 2:

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A] -WFX -Legacy Reserves 240974

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☑ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

Well -Cooper Jal Unit #121 30-025-09645 Pool -Jalmat; Tan-Yates-7Rivers 33820

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☐ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☑ Offset Operators, Leaseholders or Surface Owner

[C] ☑ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☑ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Martin Staelens		Production Engineer	4-2-14
Print or Type Name	Signature	Title	Date

mstaelens@legacylp.com
e-mail Address

LEGACY
RESERVES

April 3, 2014

New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Re: Application for Authorization to Inject
Cooper Jal Unit #121
Jal Mat, Langlie Mattix Fields
Lea County, New Mexico

Ladies and Gentlemen:

Attached is the referenced application to convert the Cooper Jal Unit #121 to water injection into the Yates, 7-Rivers and Queen formations from 3018' – 3750'. Attached are the following:

1) The "Application for Authorization to Inject" Form C-108. (2 pp)
2) The "Injection Well Data Sheet". (2 pp)
3) Two maps with the first showing the wells and leases within two miles of the proposed injection well and a half mile radius around the proposed well. The second map clearly shows all wells within a half mile radius of the proposed well which defines the well's area of review. (2 pp)
4) A table of all wells within the half mile radius around the proposed injection well. Note there are no wells which have been plugged and abandoned within this half mile radius. (1 p)
5) An affidavit of publication signed by the publisher that notice of the application was published in a newspaper of general circulation in Lea County, New Mexico. A copy of the newspaper notice is also included. (1 p)
6) Current and proposed wellbore diagrams of the Cooper Jal Unit #121. (2 pp)
7) Geological data on the Cooper Jal Unit #121, including a log section. (6 pp)
8) Engineering data on the Cooper Jal Unit #121. (1 p)

If there are any questions regarding this application or if any additional information is needed, please contact me at (281) 465-8387 or by email at mstaelens@legacylp.com. Thank You.

Sincerely,

Martin Staelens
Production Engineer

Attachments as listed above

Legacy Reserves
303 West Wall, Suite 1400 • Midland, Texas 79701 • P.O. Box 10848 • Midland, Texas 79702
OFFICE 432-689-5200 • FAX 432-689-5297

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ___X___ Secondary Recovery _____ Pressure Maintenance _____ Disposal _____ Storage
Application qualifies for administrative approval? ___X___ Yes _____ No

II. OPERATOR: Legacy Reserves Operating LP

ADDRESS: P.O. Box 10848, Midland, Texas 79702

CONTACT PARTY: Martin Staelens PHONE: 281.465.8387 ext. 224

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ___X___ Yes _____ No
If yes, give the Division order number authorizing the project: R-4019, R-4020

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Martin Staelens TITLE: Production Engineer

SIGNATURE:  DATE: 4-3-14

E-MAIL ADDRESS: mstaelens@legacylp.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: Legacy Reserves Operating LP

WELL NAME & NUMBER: Cooper Jal Unit # 121

WELL LOCATION: 990' FNL & 1650' FEL (FOOTAGE LOCATION) | UNIT LETTER | 24 SECTION | T-24S TOWNSHIP | 36E RANGE

WELLBORE SCHEMATIC

WELL CONSTRUCTION DATA

Conductor Casing

Hole Size: 17-1/2" Casing Size: 13-3/8", 68#

Cemented with: 30 sx. ***or*** approx. 45 ft^3

Top of Cement: Surface Method Determined: Circ

Surface Casing

Hole Size: 12-1/4" Casing Size: 9-5/8", 40#

Cemented with: 550 sx. ***or*** approx. 825 ft^3

Top of Cement: Surface Method Determined: Calc.

Production Casing

Hole Size: 8-5/8" Casing Size: 7", 20#

Cemented with: 350 sx. ***or*** approx. 525 ft^3

Top of Cement: 685' Method Determined: calc.

Production Liner

Hole Size: 6-1/8" Liner Size: 4-1/2", 10.5#

Cemented with: 700 sx. ***or*** approx. 1050 ft^3

Top of Cement: 2966' (TOL) Method Determined: circ

Total Depth: 3560'

Injection Interval

3018' To 3750'

Perforations and Open Hole

INJECTION WELL DATA SHEET

Tubing Size: 2 3/8" 4.7#, J-55 tbg Lining Material: Internal Plastic Coating

Type of Packer: Arrowset 1X

Packer Setting Depth: 2940'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? _____Yes ___X___No

   If no, for what purpose was the well originally drilled? _____

   Oil Production

2. Name of the Injection Formation: Yates, 7-Rivers and Queen

3. Name of Field or Pool (if applicable): Jal Mat, Langlie Mattix

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. _____

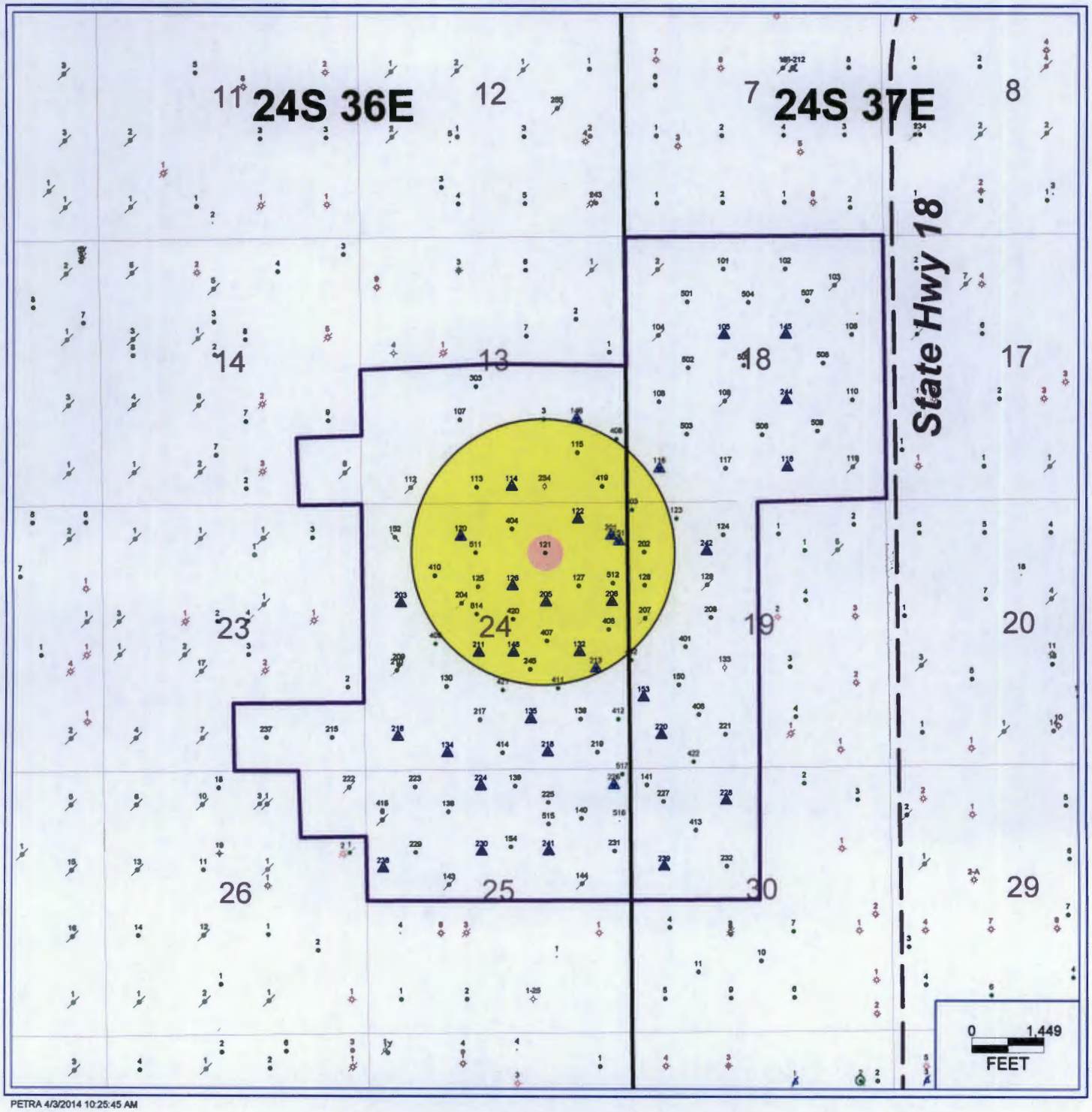
   NO

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: _____

   Tansill (above Yates) @ ≈ 2900'. No known Tansill production in Cooper Jal Unit.

LEGACY RESERVES

Cooper Jal Unit
#121



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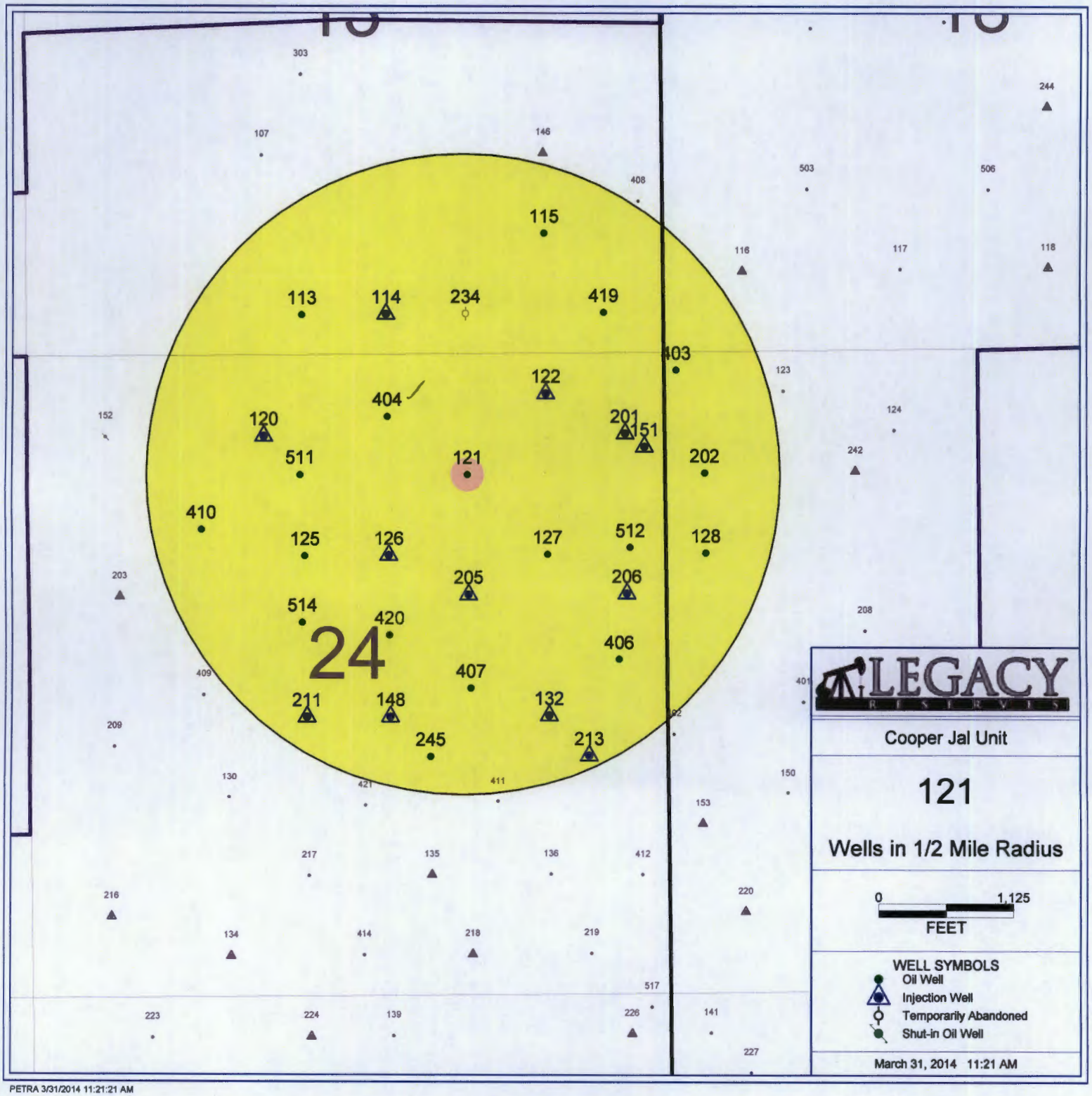

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Field: **Cooper Jal Unit**

	Location:
Footage:	990 FNL & 1650 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,304'
KB:	3,314'
KB Calc:	10'
ck w/log?	N/A

Date	History
2-Jan-49	Open hole complete 3017' - 3520'. Acidize w/ 500 gals & 90 OH jet shots
1-Jan-55	Frac OH w/ 10,000gal oil at 1 ppg w/ 500# RS in 2 stages.
16-Jan-73	Tag fill @ 3126' (394' of fill). Did not clean out.
23-Feb-73	Clean out fill to 3,520'.
9-Jul-74	CO fill f/ 3040' - 3520'. Deepen well to 3555'.
5-Feb-75	CO to 3555' & drill to 3560'. Run 4-1/2" liner and cement. Did not get cmt
	to TOL. Sqz top of liner w/ 300 sx. Selectively perforate 3,423' - 3,522'.
	Acidize perfs w/ 2500 gal 15% & 72 BS. Well Swabbed down. Frac perfs
	w/ 40,000 gal & 30,000# 20/40 - 12,000# 10/20 using 75 BS.
25-Sep-75	CO sand & scale 3480' - 3560'. Scale sqz & acidize w/ 1500 gal 15%.
17-Jan-78	Selectively perf 3018' - 3292' & acidize w/ 4000 gal 15% & 49 BS. Frac w/
	40,000 gal gel wtr & 31,500# 20/40 - 9,000# 10/20 & 20 BS in 3 stages.
11-Feb-87	Tag fill @ 3511' (49' of fill)
31-Dec-97	Set CIBP at 3400' w/ 35' cmt to 3365'.
1-Jun-05	DO cmt & CIBP. Drill new hole to 3,750'. Frac perfs at 3423' - 3522' &
	OH 3560' - 3750' w/ 59,925# 16/30 sd and 1,437 BF. Frac pers at
	3018' - 3292' w/ 15,200# 16/30 sd and 1,095 BF. CO sand & RWTP.
12-Aug-05	Parted Box - rod # 83. Changed pump and replaced all 3/4" & 7/8" Boxes.
24-Jan-06	Pump change.
28-Feb-06	HIT - 92nd jt f/ surface. Burst 7 jts below TAC while testing to 6000 psi.
7-Nov-06	Parted pin - rod #8. LD 20 -7/8" & 17 - 3/4" rods due to pitting.
7-Apr-08	Parted on/off tool.
8-Jun-11	Parted at pull rod and had hole in blast jt.
12-Jan-13	Change out blast jt & pump. Replaced cplgs on K-bars & 30-3/4" rods.
24-Jan-13	Found split in 109th jt from surface.
27-Dec-13	Test tbg & found hole in jt above SN

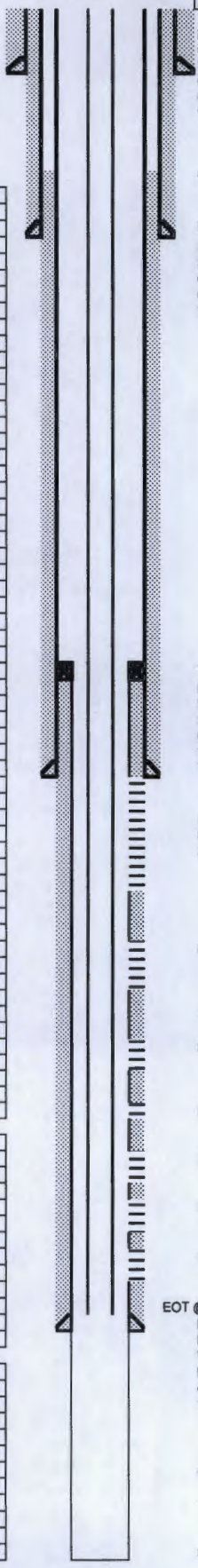
Tubing Detail (top to bottom)			
Joints	Description	Footage	Depth
86	2-7/8" 6.5#, J-55 Super Max	2,714	2,714
1	2-7/8" x 4-1/2" TAC	3	2,717
26	2-7/8" 6.5#, J-55 Super Max	790	3,507
1	1 - 2-7/8" SN	1	3,508
1	2-7/8" Perf Sub	4	3,512
1	2-7/8" Mud Anchor	31	3,543

Rod Detail (top to bottom)			
Rods	Description	Footage	Depth
1	22' x 1-1/4" polish rod w/ 7/8" pin	16.00	16.00
1	1-1/4" x 1-1/2" x 12' liner	0.00	16.00
5	4' - 7/8" pony rods	20.00	36.00
86	7/8" KD-80	2,150.00	2,186.00
47	3/4" steel rods	1,175.00	3,361.00
6	1-1/4" K-Bars	150.00	3,511.00
1	2-1/2" x 2" x 16' RHBC pump	16.00	3,527.00
	1 1/4" x 8' Sand Screen 50 slot	0.00	3,527.00

Pumping Unit:
Updated: 2/10/14 MCB

CJU #121

Wellbore Diagram



Reservoir: Cooper Jal

Well ID Info:	CJU #121
API No:	30-025-09645
Spud Date:	12/8/1948

Hole Size: 17-1/2"
Conductor: 13-3/8" - 68#, J-55
Set @ 30'
Cement w/ 30 sx Class C w/ CaCl2
Circ: Yes
TOC: Surface

TOC: 685' (Calc)

Hole Size: 12-1/4"
Surf. Csg: 9 5/8" - 40#, J-55
Set @ 1179'
Cement w/ 550 sx Poz H w/ 6% Gel
Circ: Yes
TOC: Surface

TOL @ 2,966'
Hole Size: 8-5/8"
Prod. Csg: 7" - 20#, J-55
Set @ 3,017'
Cement: 350 sx Poz H w/ 6% Gel
TOC: 685' by calc.

Yates @ 3014'

Perf 3018', 3024', 3027', 3032', 3045', 3048', 3065', 3069', 3073', 3077', 3099', 3102', 3104', 3123', 3125', 3127', 3142', 3145', 3147', 3177', 3179' & 3181' w/ 1 SPF - 1/10/1978

Perf 3215', 3218', 3221', 3223', 3232', 3234' & 3236' w/ 1 SPF - 1/10/78

7-R @ 3238'

Perf 3281', 3283', 3287', & 3292' w/ 1 SPF - 1/10/78

Perf 3423', 3432' & 3434' w/ 1 SPF - 1/29/1975

Perf 3,458' - 3,472' w/ 1 SPF - 1/29/1975

Perf 3,490' - 3,500' w/ 1 SPF - 1/29/1975

Perf 3,512' - 3,522' w/ 1 SPF - 1/29/1975

EOT @ 3543'
Hole Size: 6-1/8"
Prod. Liner: 4-1/2" - 10.5#, H-40
TOL: 2966'
Liner Set at: 3560'
Cement: 400 sx Class C + sqz top of liner w/ 300 sx
TOC: TOL

Queen @ 3600'

3-7/8" OH 3,560' - 3,750'

PBTD 3750'
TD 3750'

Field: **Cooper Jal Unit**

	Location:
Footage:	990 FNL & 1650 FEL
Section:	Sec. 24, T-24S, R-36E
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Survey:	
County:	Lea, New Mexico
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17-Jan-78	Selectively perf 3018' - 3292' & acidize w/ 4000 gal 15% & 49 BS. Frac w/
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31-Dec-97	Set CIBP at 3400' w/ 35' cmt to 3365'.
1-Jun-05	DO cmt & CIBP. Drill new hole to 3,750'. Frac perfs at 3423' - 3522' &
	OH 3560' - 3750' w/ 59,925# 16/30 sd and 1,437 BF. Frac pers at
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12-Jan-13	Change out blast jt & pump. Replaced cplgs on K-bars & 30-3/4" rods.
24-Jan-13	Found split in 109th jt from surface.
27-Dec-13	Test tbg & found hole in jt above SN

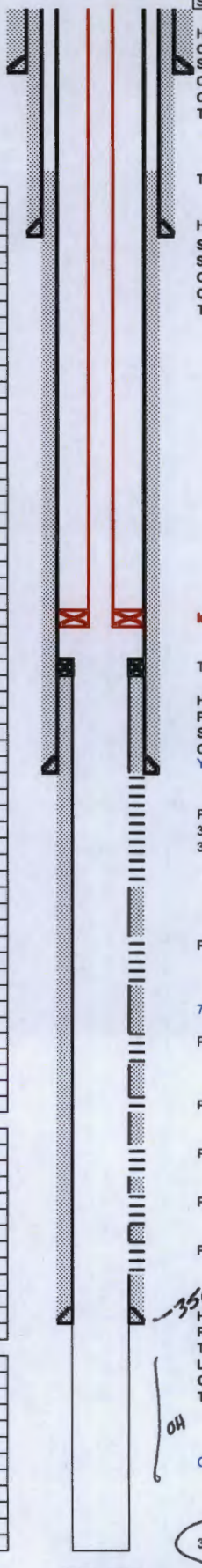
	Tubing Detail (top to bottom)		
Joints	Description	Footage	Depth
	2-3/8", 4.7# J-55 FG Lined tbg	2,940	2,940
1	2-3/8" x 7" Pkr	7	2,947

	Rod Detail (top to bottom)		
Rods	Description	Footage	Depth

Pumping Unit:
Updated: 12/18/13 MCB

CJU #121
PROPOSED

Wellbore Diagram



Reservoir:	Cooper Jal
Well ID Info:	CJU #121
API No:	30-025-09645
Spud Date:	12/8/1948

Hole Size: 17-1/2"
Conductor: 13-3/8" - 68#, J-55
Set @ 30'
Cement w/ 30 sx Class C w/ CaCl2
Circ: Yes
TOC: Surface

TOC: 685' (Calc)

Hole Size: 12-1/4"
Surf. Csg: 9 5/8" - 40#, J-55
Set @ 1179'
Cement w/ 550 sx Poz H w/ 6% Gel
Circ: Yes
TOC: Surface

Inj. Packer at 2,940'

TOL @ 2,966'

Hole Size: 8-5/8"
Prod. Csg: 7" - 20#, J-55
Set @ 3,017'
Cement: 350 sx Poz H w/ 6% Gel

Yates @ 3014'

Perf 3018', 3024', 3027', 3032', 3045', 3048', 3065', 3069', 3073', 3077', 3099', 3102', 3104', 3123', 3125', 3127', 3142', 3145', 3147', 3177', 3179' & 3181' w/ 1 SPF - 1/10/1978

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7-R @ 3238'

Perf 3281', 3283', 3287', & 3292' w/ 1 SPF - 1/10/78

Perf 3423', 3432' & 3434' w/ 1 SPF - 1/29/1975

Perf 3,458' - 3,472' w/ 1 SPF - 1/29/1975

Perf 3,490' - 3,500' w/ 1 SPF - 1/29/1975

Perf 3,512' - 3,522' w/ 1 SPF - 1/29/1975

3560

Hole Size: 6-1/8"
Prod. Liner: 4-1/2" - 10.5#, H-40
TOL: 2966'
Liner Set at: 3560'
Cement: 400 sx Class C + sqz top of liner w/ 300 sx
TOC: TOL

OH

Queen @ 3600'

3-7/8" OH 3,560' - 3,750'

PBTD 3750'
TD 3750'

Geological Description

Yates, Seven Rivers and Queen Formations, Artesia Group

Cooper Jal Unit #121

Geologic parameters

Average Depth: Top of Yates formation averages approximately 3000' subsurface.

Average Thickness: Gross thickness from top Yates to base Queen is approximately 700-800'. Net porous intervals vary from 30 to 100' in several horizons.

Reservoir and trap: Reservoir units in the Yates, Seven Rivers and Queen formations are arkosic sandstones with variable amounts of dolomite and anhydrite cements. Trapping is a combination of structure over low amplitude anticlines and stratigraphic pinchouts of porous units. Porosity varies laterally and vertically due to occlusion by anhydritic and calcareous cements.

Reservoir Quality: Porosity: 4%-18%; Permeability: 0.5mD to 100mD.

Advantages for water injection:

1) This well is a corner well of a 5-spot, 20 acre pattern which will have a producer in the center. The 20 acre pattern is an ideal size to achieve an efficient recovery for this type of water flood.

2) The injection interval is deep below the surface, allowing for generally low surface water injection pressures because of the great hydrostatic fluid column.

3) To our knowledge, there is no evidence of any faults to the surface in this area. It can be expected that the impermeable Salado and Castile salt and anhydrite layers between the Rustler and Yates formations will provide a sufficient barrier to any fluid migration to potential underground sources of drinking water.

4) The Yates, 7-Rivers, and Queen formations are sufficiently porous and permeable to allow for a high volume of water injection capacity without approaching or exceeding fracture pressures. A 15% HCL acid stimulation using up to 10,000 gallons over the entire perforated and open hole injection intervals is planned prior to initiating water injection.

Planned maximum injection rate: ~~2,000 BWPD~~

Planned maximum injection pressure: 1,200 psi

Perf 3018 to 3522
OH 3560 to 3750

GAMMA RAY NEUTRON LOG

Company	SDG RESOURCES L.P.
Well	COOPER JAL UNIT NO. 121
Field	JALMAT/LANGLIE MATTIX
County	LEA
State	NEW MEXICO

Location: API # :

900' FNL & 660' FWL

SEC 24 TWP 24-S RGE 36-E

Other Services

Elevation

K.B. 3314'
D.F. 3313'
G.L. 3303'

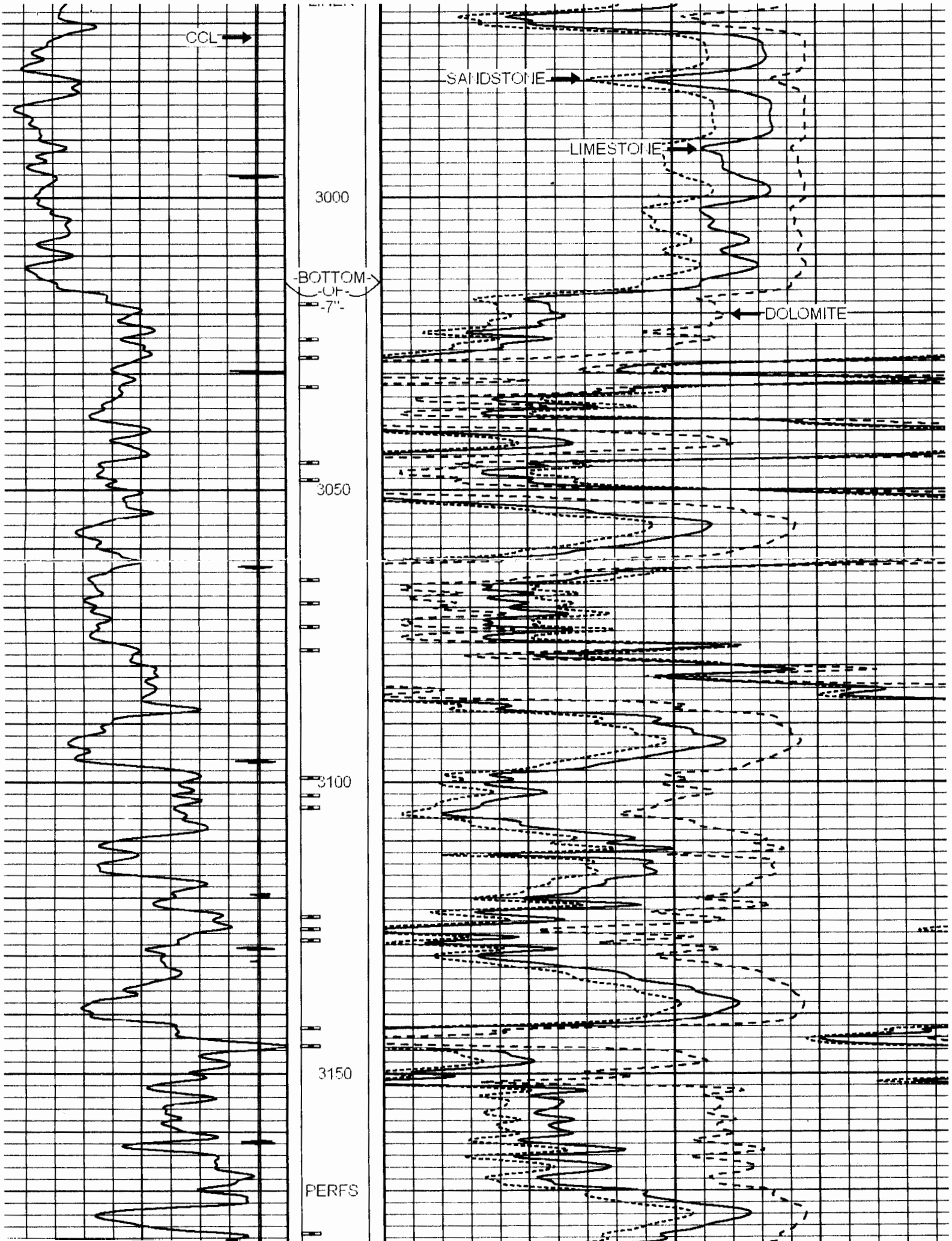
Permanent Datum	GROUND LEVEL	Elevation	3303'
Log Measured From	11'		
Drilling Measured From	KELLY BUSHING		

Date	5/23/05
Run Number	ONE
Depth Driller	3750' OPEN HOLE
Depth Logger	3748'
Bottom Logged Interval	3748'
Top Log Interval	2950'
Open Hole Size	3 7/8"
Type Fluid	WATER
Density / Viscosity	N/A
Max. Recorded Temp.	N/A
Estimated Cement Top	685'
Time Well Ready	09:00
Time Logger on Bottom	09:30
Equipment Number	20
Location	HOBBS, N.M.
Recorded By	A.UBALLE
Witnessed By	CARRIZALES RAMIREZ

Borehole Record					Tubing Record		
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	13 3/8"	68#	SURFACE	30'
Prot. String	9 5/8"	40#	SURFACE	1179'
Production String	7"	20#	SURFACE	3017'
Liner	4 1/2"	10.5#	2966'	3560'
OPEN HOLE	3 7/8"		3560'	3748'

Company SDG RESOURCES L.P.
Well COOPER JAL UNIT NO. 121
Field JALMAT/LANGLIE MATTIX
County LEA
State NEW MEXICO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LIMESTONE
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3000
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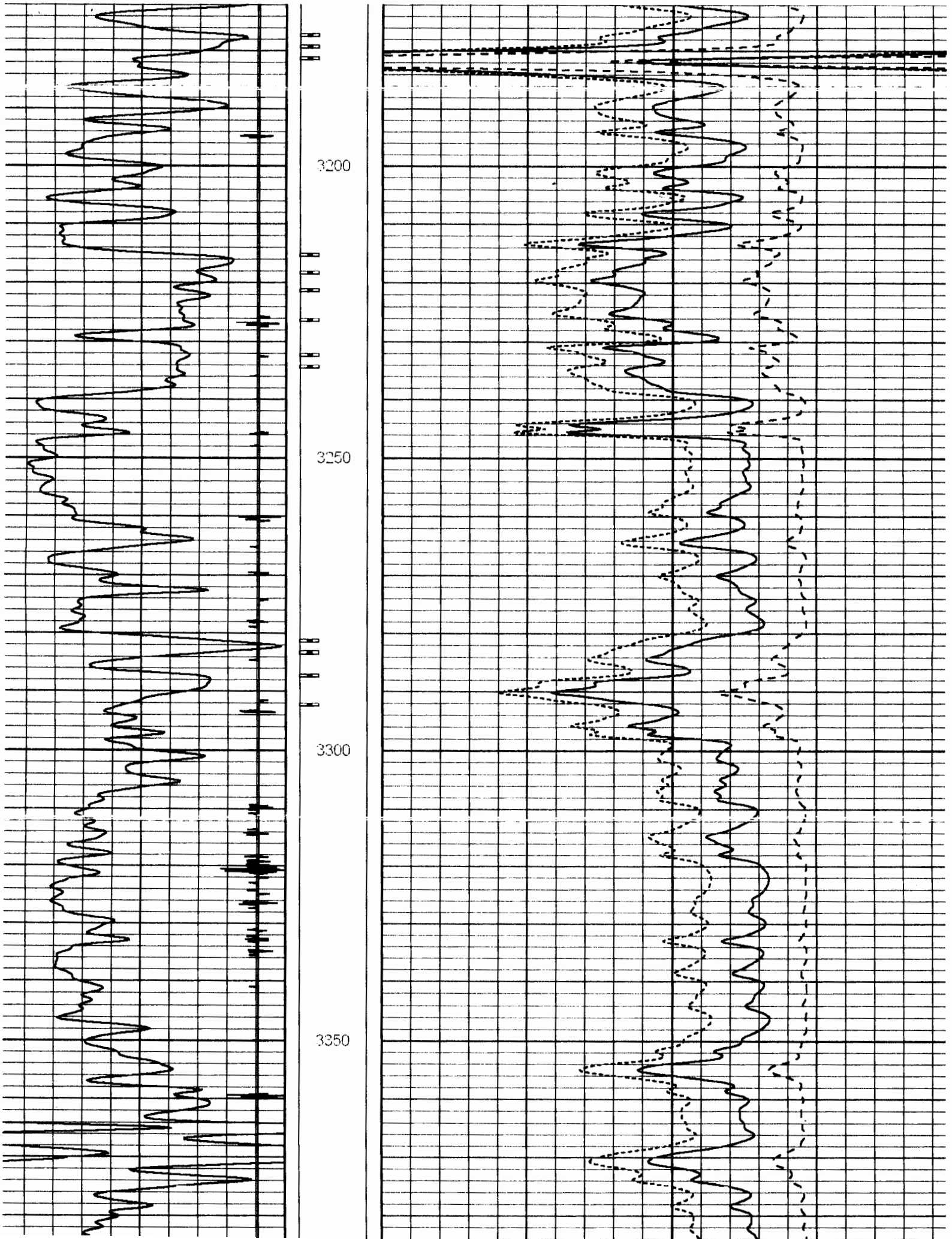
3100
3150
PERFS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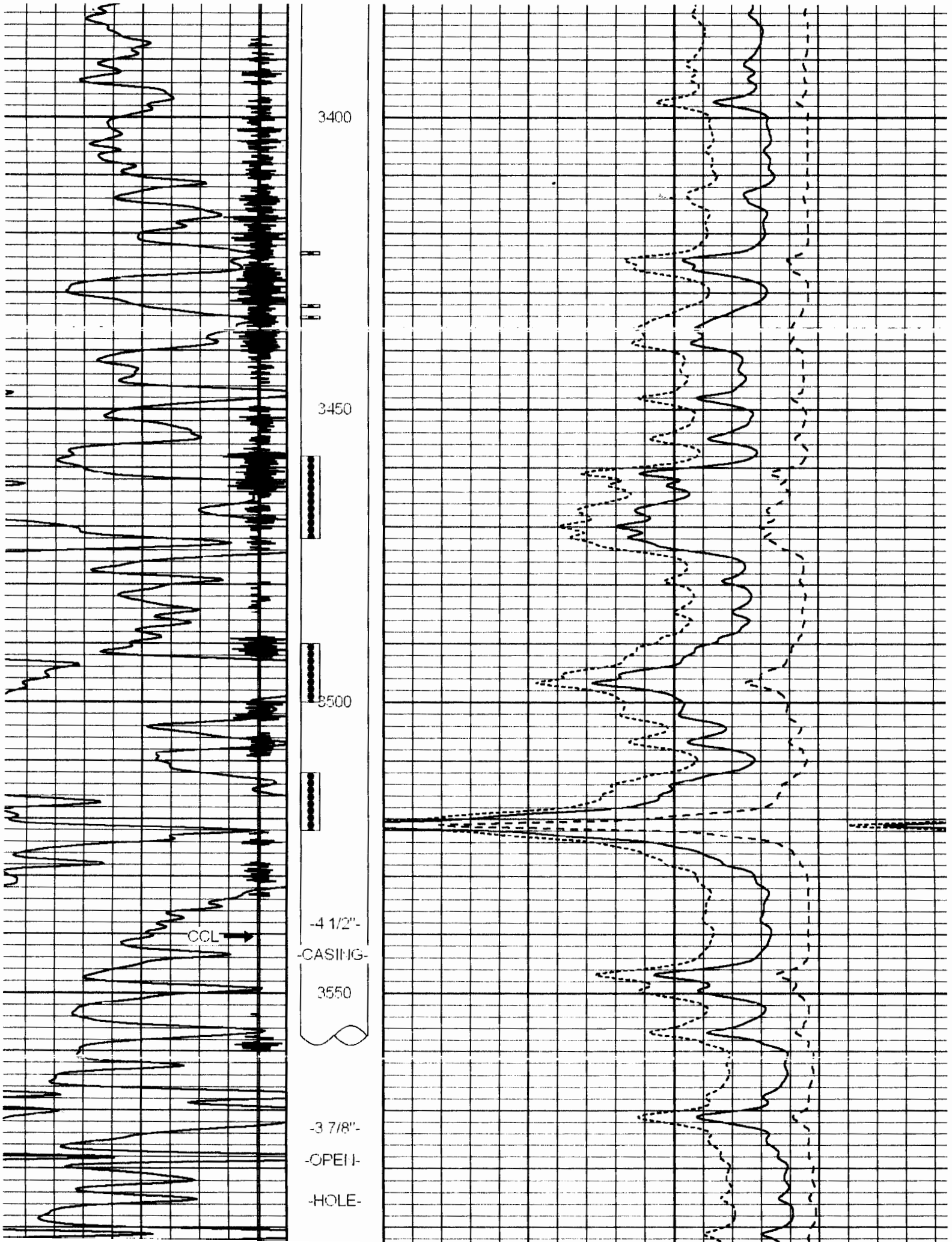
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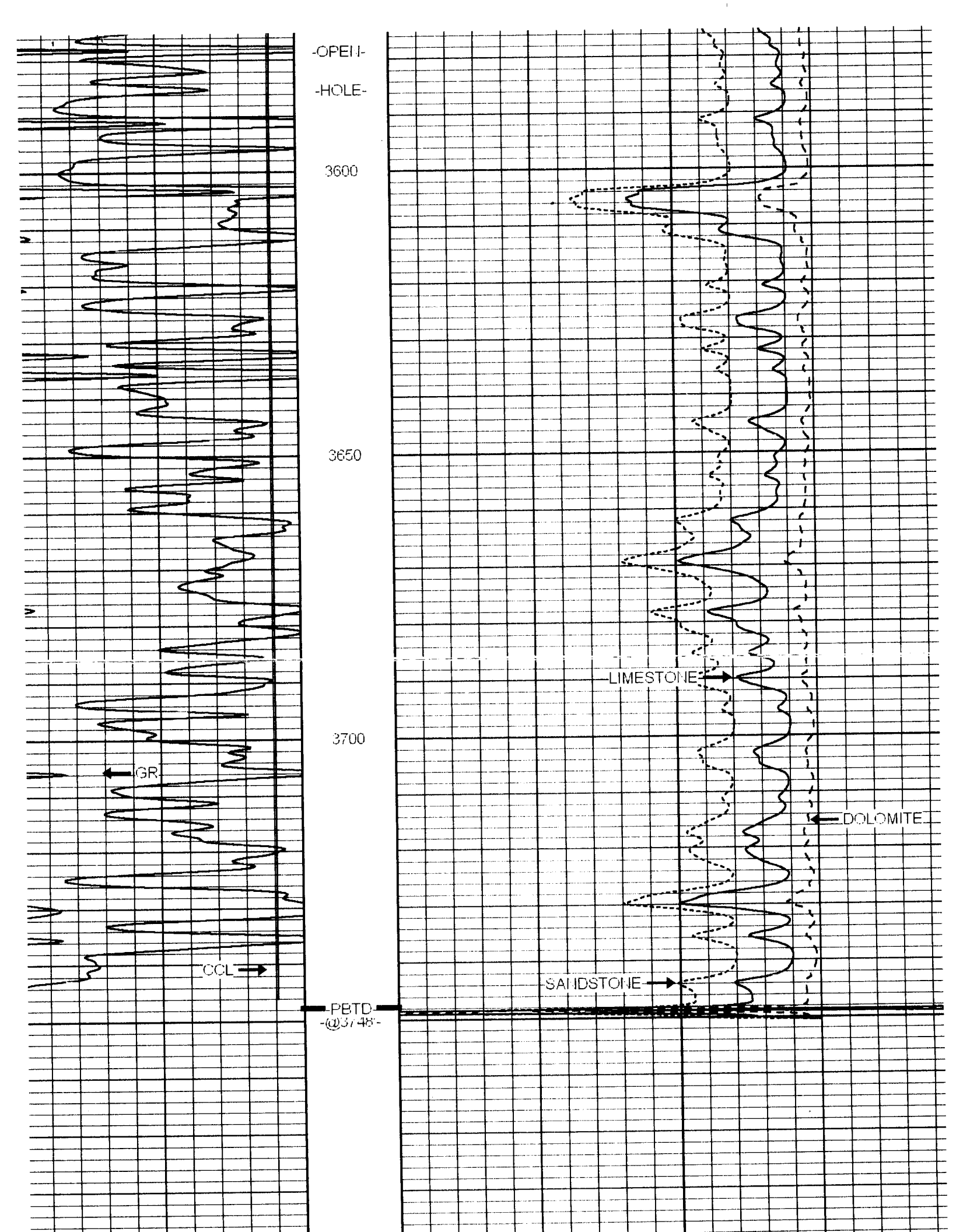
3450
3500
CCL
-4 1/2"-
-CASING-
3550
-3 7/8"-
-OPEN-
-HOLE-


-OPEN-
-HOLE-
3600
3650
3700
GR
CCL
LIMESTONE
DOLOMITE
SANDSTONE
PBTD
@3748'

ENGINEERING DATA

COOOPER JAL UNIT #121

Planned maximum injection rate: 2,000 barrels of water per day (BWPD)

Planned average injection rate: 800 barrels of water per day (BWPD)

Planned maximum injection pressure: 1200 pounds per square inch (psi)

Injection will be within an entirely closed system.

Produced water compatibility: Water will be injected into, and produced from the Yates, 7-Rivers and Queen formations. Make-up water will come from the lower Queen and Grayburg formations. All of these waters are compatible and are currently commingled at the surface without any compatibility issues.

Corrected List 07/01/2014

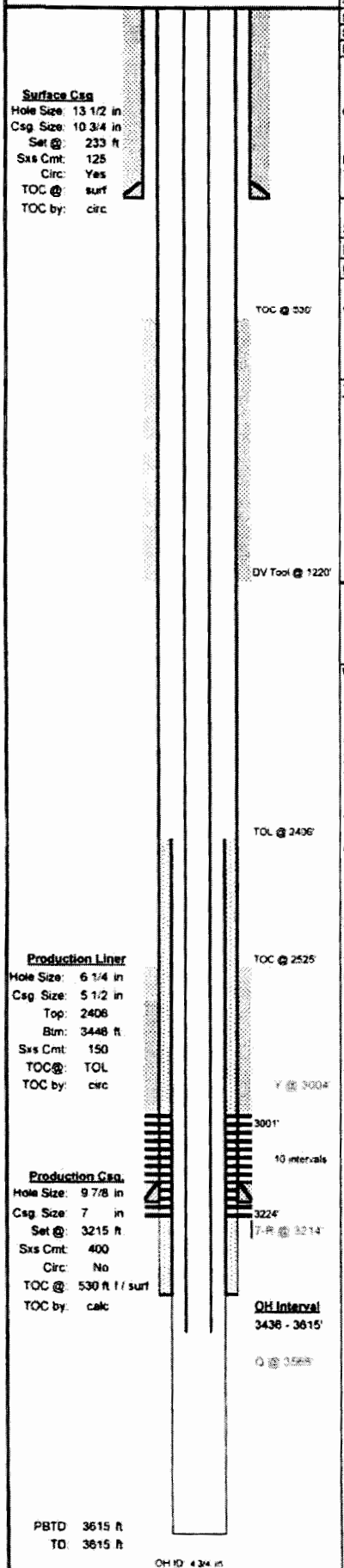
TABLE OF WELLS WITHIN HALF-MILE RADIUS AREA OF REVIEW AROUND COOPER JAL UNIT #121
LEA COUNTY, NEW MEXICO

API Number	Operator	Lease Name	Well Number	COMP TYPE	Sec	Twp	Range	SPUD DATE	TD	STATUS
30025094960000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	113	OIL	13	24S	36E	10/21/1951	3615	A
30025095590000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	114	INJ	13	24S	36E	9/3/1954	3526	A
30025095660000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	115	OIL	13	24S	36E	4/20/1947	3505	A
30025096310000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	120	INJ	24	24S	36E	10/23/1951	3195	A
30025096450000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	121	OIL	24	24S	36E	12/8/1948	3520	A
30025096380000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	122	INJ	24	24S	36E	5/29/1954	3550	A
30025096320000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	125	OIL	24	24S	36E	8/6/1954	3655	A
30025096360000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	126	INJ	24	24S	36E	4/27/1954	3560	A
30025096370000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	127	OIL	24	24S	36E	5/13/1954	3541	A
30025111510000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	128	OIL	19	24S	37E	7/28/1954	3600	A
30025096390000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	132	INJ	24	24S	36E	4/7/1954	3555	A
30025096420000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	148	INJ	24	24S	36E	3/6/1954	3550	A
30025256820000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	151	INJ	24	24S	36E	10/15/1977	3650	A
30025096280000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	201	INJ	24	24S	36E	4/27/1950	3237	A
30025111480000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	202	OIL	19	24S	37E	5/13/1950	3224	A
30025096200000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	205	INJ	24	24S	36E	4/9/1950	3251	A
30025096210000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	206	INJ	24	24S	36E	4/18/1950	3230	A
30025097870000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	211	INJ	24	24S	36E	3/9/1950	3244	A
30025096230000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	213	INJ	24	24S	36E	2/23/1950	3220	A
30025095610000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	234	INJ	13	24S	36E	5/8/1950	3228	TA
30025096250000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	245	OIL	24	24S	36E	11/16/1949	3208	A
30025322860000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	403	OIL	19	24S	37E	11/13/1993	3750	A
30025322180000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	404	OIL	24	24S	36E	10/16/1993	3750	A
30025325680000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	406	OIL	24	24S	36E	7/19/1994	3750	A
30025325690000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	407	OIL	24	24S	36E	7/29/1994	3750	A
30025328570000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	410	WSW	24	24S	36E	5/9/1995	3800	A
30025325510000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	419	OIL	13	24S	36E	8/31/1994	3750	A
30025334580000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	420	OIL	24	24S	36E	7/19/1996	3825	A
30025391040000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	511	OIL	24	24S	36E	9/10/2008	3772	A
30025391030000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	512	OIL	24	24S	36E	9/23/2008	3745	A
30025391020000	LEGACY RESERVES OPERATING LP	COOPER JAL UNIT	514	OIL	24	24S	36E	10/6/2008	3815	A

31 active wells

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME	Cooper Jal Unit			WELL NO	113
STATUS	Active	Oil		API#	30-025-09496
LOCATION:	330 FSL & 2310 FWL, Sec 13, T - 24S, R - 36E, Lea County, New Mexico				
SPUD DATE:		TD 3615	KB 3,334'	DF	
INT. COMP. DATE:	12/02/51	PBTD 3615	GL 3,327'		

GEOLOGICAL DATA

ELECTRIC LOGS:

GR-N-CCL from 3513 - 2600' (12-8-93 Halliburton)

CORES, DST'S, or MUD LOGS:

HYROCARBON BEARING ZONE DEPTH TOPS:

Based of Salt - 2830' Yates @ 3004'
7-Rivers @ 3214' Queen @ 3568'

CASING PROFILE

SURF.	10 3/4" - 40#, J-55 set@ 233' Cmt'd w/125 sxs - circ cmt to surf.
PROD.	7"- 17#, J-55 set@ 3345' Cmt'd w/200 sxs - TOC @ 2525' f/ surf by calc. DV tool @1220' - pmp 200 sxs.
LINER	5 1/2"- 14#, J-55 set from 2406' - 3446' Cmt'd w/150 sxs circ out TOL. 7" Csg TOC@ 530' by calc.

CURRENT PERFORATION DATA

CSG. PERFS: 3001'-3224' OPEN HOLE 3436 - 3615'

TUBING DETAIL 07/13/12

Length (ft)		Detail
7		K.B.
2885	87	2 7/8" 6.5#, J-55, 8rd EUE tbg.
3	1	5 1/2" x 2 7/8" TAC
594	18	2 7/8" 6.5#, J-55, 8rd EUE tbg.
24	1	2 7/8" x 2 1/4" x 25' WB
4	1	2 7/8" Perf sub
31	1	2 7/8" Mud Anchor joint
3548		btm

ROD DETAIL 07/13/12

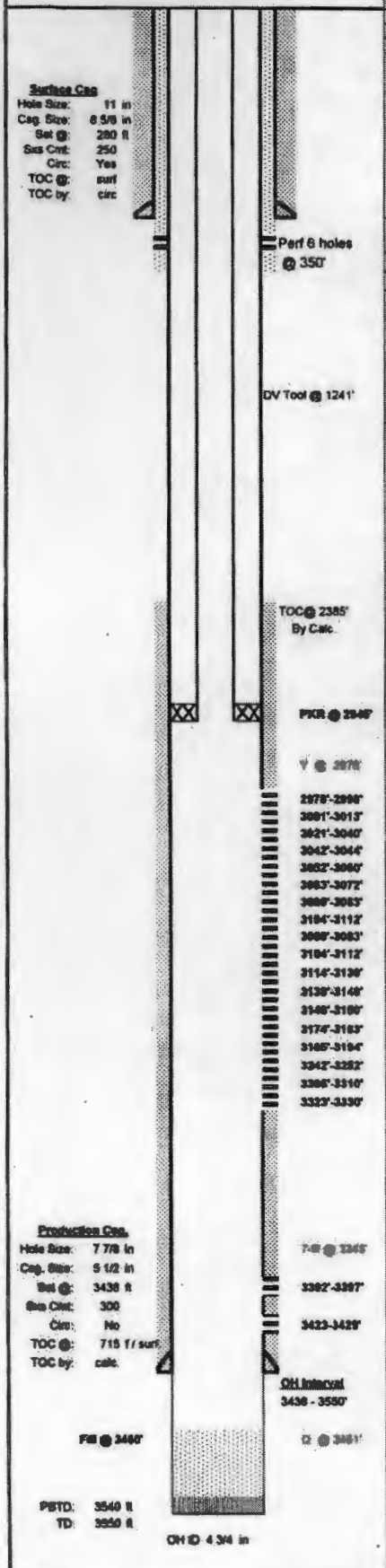
Length (ft)		Detail
20	1	1 1/4" x 22' polish rod w/ 7/8' Pin
0	1	1 1/4" x 1 1/2" x 14'
20	4	2', 4', 6', 8' - 1" Pony Rods
1050	42	1" steel rods
1200	47	7/8" steel rods
625	25	3/4" steel rods
600	24	1 1/4" K-Bars
4	1	2 1/2" x 4 insert plunger
3519		btm

WELL HISTORY SUMMARY

2-Dec-51	**IC interval: 3446 -3615' (7RVS/Queen - OH). IP=96 bopd, 0 bwpd & 122 Mcfgpd (flowing), ISITP=700 psi.**
15-Feb-55	C/O and Frac w/ 6,000 gals lse oil & 8,000#'s sand
5-Aug-58	C/O fill from 3493 - 3605'
22-Dec-69	C/O fill from 3500 - 3610'
26-Mar-74	Installed 228D Pumping Unit
16-Mar-77	Installed new 2 7/8" tbg
24-May-77	Installed 456D Pumping Unit
14-Sep-87	C/O to 3615'
6-Dec-93	C/O to 3615'. Ran GR-N-CCL f/ 3513'-2600' (Noted - will not perf Langlie Mattix zone). Set RBP@ 3367'. **Perf'd (Jalmat/ Tansill/Yates/7RVR) f/ 3001'-3224', 10 intervals w/ 300 - 0.48" dia holes, 150' of net pay.** Frac perfs 3001'-3224' w/ 34,566 gals 30# crosslinked gel carring 130,000#'s 12/20 brady sand. Screened out on 10ppg sand, 121,500#'s in formation. C/O sand. Ran tbg & rods. Pmp well to recover frac load f/ 12-19-93 through 3/28/94. Sanding problems and 0 bopd.
29-Mar-94	C/O sand w/ foam to top of RBP@ 3367'. Rls RBP & POOH. RIH & tag TD @ 3615'. Ran production equipment. PWOP. **IP= 4 bopd, 239 bwpd, 110 Mcfgpd.**
09-Oct-02	Replaced Pump. Replaced Bethlehem 228 Pumping unit w/ a Lufkin 320 D. E. 120" stroke. Move Bethlehem to CJU # 209.
03-Mar-03	Parted 7/8" pony rod below polished rod. Replaced and place well on pump.
14-Jul-03	Rod parted 22 joints f/ surface. POOH w/ rods & pump. Tallied out of hole tbg. Laid down 7 joints of tubing and 7 - 1 1/4" K-Bars. RIH with 2 1/4" working barrel and tubing. RIH with 2 1/4" plunger on rod string. PWOP.
16-Dec-03	Parted 1" rod (body break) 12 rods from surface. Replaced rod and place well on pump.
16-Jan-04	POOH with and laid down rods string and pump. RIH with pump and new rod string. PWOP.
30-Jan-06	Parted 3/4" rod (97th - body break) due to wear. POOH with rods and pump. Tagged at 3586', POOH with tubing. Changed out tubing pump. RIH with tubing pump, tubing, plunger and rods. Loaded up tubing and test to 500#. PWOP.
17-Aug-10	POOH with parted 91th - 3/4" rod (box break). POOH with rods, pump and tubing. Hydrotest tubing to 7,000 psig. Changed out 39 boxes due to wear. RIH plunger and rods. PWOP.
11-Jul-12	POOH w/ parted 31th - 1" rod (broken coupling). POOH w/ rods, pump & tubing. Laid down 3 - 3/4" & 20 - 1" rods - flat. PWOP.

PREPARED BY: Larry C. Adams Ramiro Carmona UPDATED: 25-Jul-12

WELLBORE SCHEMATIC AND HISTORY



LEASE NAME	Cooper Jal Unit					WELL NO.	114
STATUS	Water Injector					API#	30-025-09569
LOCATION:	330 FSL & 2310 FEL, Sec 13, T - 24S, R - 36E, Lea County, New Mexico						
SPUD DATE:		TD	3550	KB	3,327'	DF	
INT. COMP. DATE:	09/21/54	PBTD	3540	GL	3,320'		

GEOLOGICAL DATA

ELECTRIC LOGS:
GR-N from 3200 - 3526' (9-20-54 The Western Co.)
GR-N from 2900 - 3493' (12-16-64 Welex)

CORES, DST'S or MUD LOGS:

HYROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 2976' 7-Rivers @ 3345' Queen @ 3481'

CASING PROFILE

SURF.	8 5/8" - 20#, J-55 set@ 280' Cmt'd w/250 sxs - circ cmt to surf.
PROD.	5 1/2" - 15.5#, J-55 set@ 3438' Cmt'd w/200 sxs - TOC @ 2385' // surf by calc. DV tool @ 1241' - pmp 100 sxs.
LINER	None TOC@ 715 by calc.

CURRENT PERFORATION DATA

CSG. PERFS: OPEN HOLE : 3438 - 3550'

3423 - 29' w/ 2 spf (14 holes)
Perf'd Yates // 2978'-2998', 3001'-3013' 3021'-3040', 3042'-3044', 3052'-3060', 3063'-3072', 3080'-3083', 3104'-3112', 3080'-3083', 3104'-3112', 3114'-3130', 3138-3140', 3146'-3150', 3174'-3183', 3185'-3194' 3242'-3252', 3306'-3310' and 3323'-3330', 2 JHPF; Perf'd 7-Rivers // 3392'-3397', 2 JHPF.

TUBING DETAIL 3/2/2012

2 3/8 X 5 1/2 arrowset 1 X PKR
1.78 F profile nipple
on off tool
89 jts 2 3/8 IPC 8rd TBG
2', 8', 10', 2 3/8 8rd IPC TBG subs
PKR @ 2945

ROD DETAIL

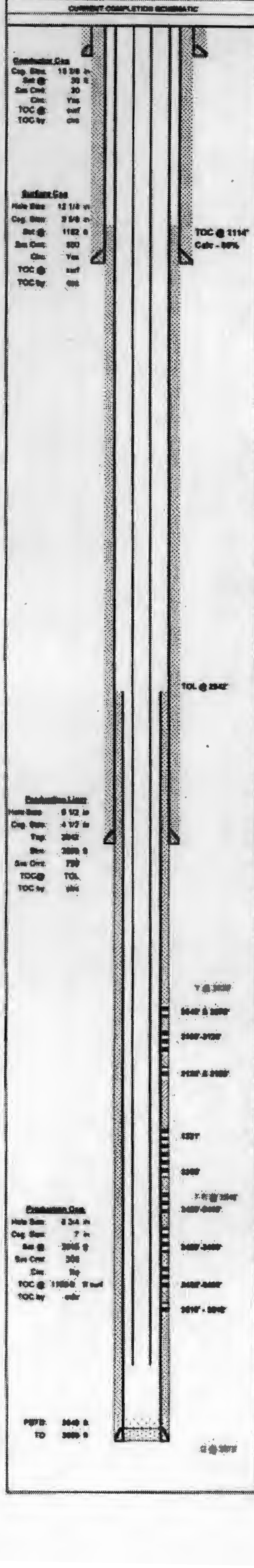
WELL HISTORY SUMMARY

21-Sep-54	Initial completion interval: 3438 -3550' (7 RVRS/Qn OH). IP =90 bopd, 0 bwpd, & 101 Mcfgpd (flw'd - no stimulation) .
16-Dec-64	Perf'd 7-Rivers // 3423 - 29 w/ 2 spf (14 holes). Frac OH w/ 10,000 gals lse oil, 10,000#'s 20/40 & 10,000#'s 10/20 sand, at AIR= 31.6 bpm & 1400 psi. Plug back to 3440' w/ sand & Frac perfs 3423-29' w/ 5,000 gals lse oil, 7,500#'s 20/40 sand and 2500#'s 1020 sand @ 24 bpm & 1700 psi.
29-Jul-71	Converted to Injector. C/O from 3482 - 3540'. RIH with pkr on 2 3/8" CL tbg. Set pkr @ 3376'. Initiated injection.
9-Nov-79	Made TD check with 1" sinker bar. Measured TD at 3516' (34' of fill).
12-Jan-91	C/O fill using bailer from 3521 - 3535'. Ran 5 1/2" pkr on 2 3/8" cmt lined tbg. Set pkr. @ 3371'. Return to injection.
21-Mar-00	TOOH & LD pkr. & 2 3/8" CL tbg. Set CIBP w/ WL @3400'. Spot 75 sxs cmt on CIBP. WOC. Tag TOC @ 2697'. S Spot 25 sxs cmt from 1300 - 1100'. WOC. Tag TOC @ 1090'. Perf'd 6 shots@350'. Pmp 120 sxs cmt down 5 1/2" and circ to surf through 5 1/2 x 8 5/8" annulus. Installed Dry hole marker & cleaned location. NMOCD notified - well P&A'd 3-22-2001
02-Mar-11	Pick up 4 3/4 bit and 3 1/2 D.C., tag CMT @ 10', drill out CMT to 32', DRLG from 32' to 3540' took 8 days, circulate clean, POOH laying down D.C.'s and 4 3/4 bit. Perf'd Yates // 2978'-2998', 3001'-13' 3021'-40', 3042'-44', 3052'-60', 3080'-83', 3104'-12', 3114'-30', 3138-40', 3146'-50', 3174'-83', 3185'-94' 3242'-52', 3306'-10', 3323'-30', & 3392'-97', 2 JHPF; Perf'd 7-Rivers // 3342'-3330', 2 JHPF. POOH laying down D.C.'s and 4 3/4 bit, set pkr at 3420', load and test CSG, held. Injection rate of 6 BPM @ 2200 psig, establish 30 BBLS acid, drop 50 sacks block, had 12 sacks block on formation, well pressured up to 5000 psig, could no longer pump into formation. Release PKR, POOH with PKR, perforate. Set PKR at 2945', load and test CSG, held, establish injection rate of 6 BPM at 1200 PSI, pump 15,338 gallons acid dropping ballsealers @ 6 BPM @ AVG PSI of 1100 psig, displace to bottom PERF, ISIP @ 400 psig. POOH laying down workstring, RIH w/ new on and off tool, circulate PKR fluid, run MIT test, held, job complete.
16-Jun-12	Injection Profile shows: fill @ 3460', 57% into Y-3/Y-4, 18% into Lower 7-R and 25% in to Queen in fill. Rate:696 BPD @ 650#.

PREPARED BY:	Larry S. Adams	UPDATED:	17-Jun-11

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME		Cooper Jal Unit				WELL NO	115
STATUS	Active		Oil			API#	30-025-06506
LOCATION:	660 FSL & 660 FEL, Sec 13, T - 24S, R - 36E, Lea County, New Mexico						
SPUD DATE:	05/07/47	TD	3660	KB	3,337'	DF	
INT. COMP. DATE:	05/12/47	PBTD	3648	GL	3,327'		

GEOLOGICAL DATA

ELECTRIC LOGS:

GR-CCL-CBL from 3188 - 2800' (6-27-95 Halliburton)

GR-N from 2800 - 3005 (5-6-47 Lane Wells)

CORES, DST'S, or MUD LOGS:

GR-N from 2880 - 3667 (3-18-75 Apache Services)

GR-N (12-16-64 Welex)

HYDROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3030' 7-Rivers @ 3347' Queen @ 3670'

CASING PROFILE

COND.	13 3/8" - 32# set @ 30'. Cmt'd w/20 sxs - TOC @ surf
SURF.	9 5/8" - 36#, J-55 set@ 1182'. Cmt'd w/650 sxs - circ cmt to surf
PROD.	7" - 24#, J-55 set@ 3015'. Cmt'd w/300 sxs - TOC @ 1114', Calc - 80%
LINER	4 1/2" - 10.5#, H-40 set from 2942' - 3660'. Cmt'd w/750 sxs circ out TOL.

CURRENT PERFORATION DATA

CSG. PERFS. OPEN HOLE 3015'-3660'

2-May-78 Perf'd Yates (Jalmat) 3048' (2 holes), 78', 3108', 36', & 53 (8 holes total) 3107-20' w/ 4 spf (24 holes)

Perf'd Yates (Jalmat) f/ 3221',23',25',27',37',39',41',95',97',99', 3301', & 03' (12 holes total)

17-Mar-75 Perf'd 7-Rivers 3426', 35', 46', 3458 - 66', 3488-95', & 3510 - 18' w/ 1 spf (34 holes)

TUBING DETAIL 8/2/2011

Length (ft)		Detail
2740	88	2 7/8" 8rd tbg
1	1	2 7/8" 8 rd x 2 7/8" s.m. combo coup
750	24	2 7/8" s.m. tbg w/scc
1	1	2 7/8" w/ fill sub
35	1	35 12' stator
32	1	2 7/8" 8rd tbg
3	1	4 1/2" x 2 7/8" TAC
3560		

ROD DETAIL 1/4/2013

Length (ft)		Detail
14	1	1 1/4" x 14' w/ 7/8" alloy polished Rod
30	1	1" steel rod
30	4	8',8',4', 2' - 1" pony rods
3420	130	1" guided rods
30	1	20-35' rotor
3530		

WELL HISTORY SUMMARY

12-May-47	**Initial completion interval: 3015 - 3660'; IP=145 bopd, 0 bwpd; GOR=4600 (flowing), SITP=1175 psi.**
23-Mar-65	C/O and Frac w/ 10,000 gals lse oil & 10,000#'s sand w / 500 gals diverter. AIR=21 bpm @ 700 psi. **IP=145 bopd @ FTP=60 psi. (after load recovery)**
26-Jul-73	C/O 235' of fill and deepened to 3682'. **After WO: 5 bopd & 0.5 bwpd**
17-Mar-75	**C/O fill f/ 3480 - 3660'. Set 4 1/2", 10.5#, H-40 liner f/ 2942-3660'.** Cmt'd w/ 750 sxs class "H" cmt. Had to drill cement f/ 1130-3660'. Test TOL to 1100 psi. OK. **Perf'd 7-Rivers** w/1 spf 3426',35',46', 3458-66', 3488-95', & 3510'-18' (34 holes total). Acdz'd perfs w/2,500 gals 15% HCL & 45 ball sealers. Frac'd w/40,000 gals gld wtr, 30,000#'s 20/40 sand, 10,000#'s 10/20 sand & 30 BSs. AIR=20 bpm @ 2400 psi. Tagged sand @ 3580'. Did not C/O sand.
22-Mar-75	Installed new Bethlehem 228D Pumping Unit
10-Apr-75	C/O sand from 3507 - 67' (60'). **After WO: 41 bopd & 123 bwpd**
23-Jun-75	C/O sand from 3545 - 3582'. **After WO: 66 bopd & 114 bwpd**
02-May-78	**Set RBP@ 3370'. Perf'd 7-Rivers f/3221-3303 (12 holes)** & acdz'd w/2,000 gals 15% HCL & 12 BSs. AIR=3 bpm@ 1475 psi. Reacdz'd w/1,000 gals 15% HCL followed by 7,000 gals mud acid w/Musol "A" solvent. AIR=2 1/2 bpm @ 900 psi. Reset RBP @ 3191'. **Perf'd Yates f/ 3048 - 3153' (8 holes).** Acdz'd w/2,000 gals 15% HCL & 4 BSs. AIR= 3 bpm @ 800#. Reacdz'd w/1,000 gals 15% HCL followed by 2,000 gals mud acid w/Musol "A" solvent. POOH **w/ RBP. PWOP. Before WO: 32 bopd & 131 bwpd. After WO: 61 bopd & 296 bwpd**
17-Mar-86	C/O fill 3480 - 3602.
22-Dec-87	Tag fill @ 3632'
27-Jun-95	**Set 4 1/8" CIBP @ 3200' & dump 20' cmt on top. Ran CBL-GR-CCL from 3188-2800', Perf'd (Jalmat) f/ 3100'-20' w/3 1/8" gun, 120 deg phasing & 4 spf.** Set pkr @ 2821' & acdz'd perfs w/2,100 gals 15% NEFE acid dropping 120 - 7/8" RCN ball sealers. AIR=8 bpm @ 1050 psi. No ball action. ISIP=520 psi. P5min=vacuum. Frac perfs using 53,838 gals gelled 2% KCl carrying 224,160#'s 12/20 brady sand. AIR=40 bpm. Ptr=2270 - 2471 psi. ISIP=1094 psi C/O sand w/ bailer from 2880'-3136'. Ran prod equip. PWOP. **Avg Prod = 36 bopd & 82 bwpd over 28 day period.**
09-Jan-01	Tagged TD 3086' & POOH. Left 6' of 3 1/2" Mud Anchor in hole w/ TOF @ 3086' by tbg tally. Wash over and recover 4' of orange peel MA. Test 99 Jts. 2 3/8" tubing in hole. SN at 3155.5', TAC @ 2896.85'.
27-Dec-01	Changed out insert pump
21-Feb-02	Pulled tubing - 90 jts. Ran with 87 jts of tubing. Changed out pump
30-Sep-02	Pulled stucked pump, tubing string, & TAC. Ran 96 Jts. 2 3/8" tubing
08-Nov-02	Replaced bad rod boxes and pump. Installed rod guides.
30-May-03	Pull rods, pump, and tubing string. Found 4 pitted 3/4" rods. Hydrotest tubing in hole. Change out pump.
18-Dec-03	Parted 3/4" rod (body break) 42 rods from surface. Laid down 8 - 3/4" rods due to pitting. Changed out pump. PWOP.
11-Mar-04	POOH with rods and pump. Tagged at 3070', tally out of hole. **Bailed from 3070' to 3092'.** Could not make any more hole - recovered scale, iron sulfide, and pieces of tbg. RIH with tubing, plunger, and rods. PWOP.
12-May-04	Parted 3/4" rod (body break) 63 rods from surface. Changed out parted rod and pump. PWOP.
08-Jun-04	Parted 3/4" rod (body break) 111 rods down. POOH w/ rod & plunger, laid down 39 - 3/4" pitted rods. POOH w/ tubing RIH with 2 3/8" and 2 7/8" tapered string tubing. RIH with pump and rods. PWOP
29-Aug-05	POOH w/ rods, pump & tbg. RIH w/ 3 7/8" Shoe w/ wire: tagged @ 3080'. Stop making hole @ 3125', recovered frac sand, metal & rubber. RIH w/ 3 7/8" Shoe w/ wire, D/O CIBP @ 3200', C/O to 3648'. RIH w/ tbg, pump & rods. PWOP
21-Nov-05	POOH w/ parted 58th 7/8" rod (B.B). Laid dn 34 - 7/8" & 42 - 3/4" rods due to pitting. RIH w/ pmp & rods. PWOP
19-Dec-05	POOH with rods and pump. RIH w/ exchanged pump and rods. Load & test tubing to 500#. PWOP.
13-Nov-08	Parted 85th 3/4" rod (B.B). POOH w/ rods & pump. Tagged at 3583', POOH w/ tbg. RIH w/ tbg, pump & rods. PWOP
4-Mar-09	POOH w/ rods, pump & tubing. Hydrotest 2 3/8" tubing to 6000# & 2 7/8" tubing to 7000#. RIH w/pump & rods. PWOP
22-May-09	POOH w/ rods, pump & tubing. RIH w/ Tag Bar, **tagged @ 3,610'.** Ran pressure gradient every 500'. Hydrotest tbg to 7000# - burst 62nd Jt. Laid down all 3/4" rods. **Pressure @ 3,860' = 310 psig.** RIH w/ pump & rods. PWOP
24-Jul-09	POOH w/ rods, pump & tubing. RIH w/ Tag Bar, **tagged @ 3,586.** Ran pressure gradient every 500'. 2,252'. RIH with 2 3/8" and 2 7/8" tapered string tubing. RIH with pump and rods. PWOP
10-Sep-09	Long Stroke well - didn't pump. Load well & press test to 375 psi - didn't pump. POOH with rods, pump and tubing. Hydrotest tubing - found split on 108th jt and burst 2nd jt. RIH with plunger. PWOP.
11-Feb-10	POOH with parted 92th - 7/8" rod (pin break) and plunger & standing valve. POOH w/ tbg. **Ran Pressure Gradient** Tool, taking readings every 500 feet. RIH tubing, plunger and rods. PWOP.
16-Feb-10	POOH w/ rods, pump & tbg. Found over size box above plunger would not go inside W.B. Tag @ 3582'. PWOP
04-Oct-10	POOH with rods, plunger and tubing. Laid down 23 - 2 3/8", changed out 24 - 2 7/8" turned down collars. Hydrotest tubing to 7,000 psig - burst 59th joint. RIH with plunger and rods. PWOP
28-Feb-11	POOH w/rods, plunger and s.v. (lay all rods down). POOH w/tbg. Set TAC w/ 8 pts. N.U. wellhead. GIH w/rotor and 1" rods. PWOP, well pumped up ok.
23-Mar-11	Rotor stuck, worked free pump 30 BBLS down TBG, pulled w/ rods laid down Rotor, nipple down wellhead, unset TAC, pulled out w/tbg, laid down Stator. Ran in w/tbg test to 7000 psi, test good, set TAC, pulled 14,000# tension nipple up wellhead, ran in w/ Rotor, hung well on, pump up time 14 mins, put well on production.
14-Jun-11	POOH with rods, plunger and tubing. Laid down Stator. Hydrotest tubing to 7000 psig. RIH with plunger and Rotor. PWOP.
01-Aug-11	Recovered 15' of 20' Rotor. Laid Stator and Rotor. Hydrotest tubing to 7000 psig - test. RIH with Rotor. PWOP
20-Apr-12	POOH with parted 121th - 1" rod (body break) and rotor. RIH with rotor & rods. PWOP.
22-May-12	POOH w/ parted 125th - 1" rod (body break). Rotor was in bad shape. Hydrotest tbg to 7000# - good. RIH w/ rotor & rods. PWOP
04-Jan-13	POOH w/ parted 122nd- 1" rod (body break) and rotor. Rotor had spots of chrome missing. RIH w/ rotor and rods. PWOP
26-Feb-13	POOH w/ parted 123rd- 1" rod (body break). Rotor had spots of chrome missing. RIH w/ rotor and rods. PWOP

PREPARED BY:	Larry Adams	Domingo Carrizales	UPDATED:	26-Mar-13

Field: **Cooper Jal Unit**

	Location:
Footage:	660 FNL & 1980 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,315'
KB:	3,326'
KB Calc:	11'
ck w/log?	Yes

Date	History
11-Nov-51	Hydrafrac OH 3000' - 3195' w/ 1500 gal Kerosene & 800# Ottawa Sand.
13-Dec-54	Deepen to 3604' & ran 4" FJ Liner. Perf 3500' - 3516' & frac w/ 500 gal mud acid & 6000 gal lse oil + 6000# sand.
7-Oct-71	Selectively perforate 3011' - 3270' & 3400' - 3492'. Acidize perfs w/ 5628 gal 20% acid in 3 stages w/ BS. Dual Inject w/ plr at 3314' & plr at 2820'.
14-Oct-88	Dual injection equipment plugged up. Well SI.
23-May-94	Fish dual plr - junk possibly left in hole. CO to 3574' & add perfs at 3,156' - 3,176'. RWTI.
14-Feb-02	Tag fill at 3046' w/ sinker bar.
11-Aug-04	CO to 3575' - had iron carbonate scale in returns.
3-Dec-04	CO w/ CT to 3574' & acidize w/ 4200 gals 15% in 3 stages.
7-Nov-05	Tag fill at 3556' w/ sinker bar while running BHP survey.
1-May-08	CO to 3576'.
10-Jul-08	Acidize w/ 3080 gals 15% NEFE HCl & 35 Tons CO2.
29-Apr-11	CO to 3572' & acidize w/ 17000 gals 90/10 & 14000# RS.
1-May-14	CO to 3572' & acidize w/ 10000 gals 15% HCL & 9200# RS.

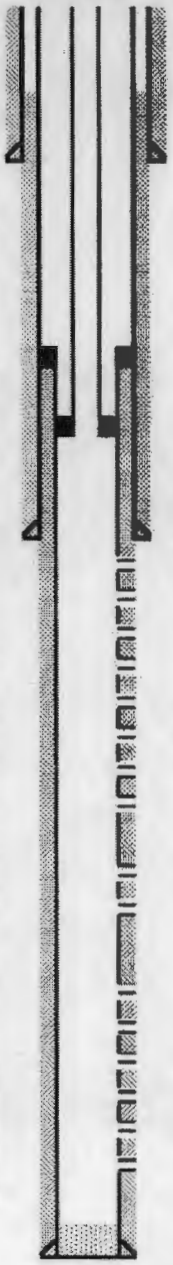
	Tubing Detail (top to bottom)		
Joints	Description	Footage	Depth
3	2-3/8" 4.7#, IPC, J-55, 8rd subs (8', 4', 2').	14	14
94	2-3/8" 4.7#, IPC, J-55, 8rd tbg.	2,900	2,914
1	4" x 2 3/8" Baker Model AD-1 packer	3	2,917

	Rod Detail (top to bottom)		
Rods	Description	Footage	Depth

Pumping Unit:
Updated: 08/24/14 MLB

CJU #120

Wellbore Diagram



Reservoir:	Cooper Jal
Well ID info:	CJU #120
API No:	30-025-09531
Spud Date:	10/23/1951
Hole Size:	10-3/4"
Conductor:	8-5/8" - 29.75#
Set @	315'
Cement w/	150 sx Neat Cmt
Circ:	Yes (20 sx)
TOC:	Surface
TOC:	294' (By sinker bar)

TOL @ 2,854'

PKR at 2,917'

Hole Size:	7-7/8"
Prod. Csg:	5-1/2" - 15.5# & 17#
Set @	3000'
Lead Cement:	550 sx Portland + 10% Gel
Tail Cement:	100 sx Neat Cement

Perfs @ 3007'

Perf 3,011' - 3,021' - 10/7/1971

Perf 3,030' - 3,036' - 10/7/1971

Perf 3,054' - 3,076' - 10/7/1971

Perf 3,092' - 3,107' - 10/7/1971

Perf 3,112' - 3,120' - 10/7/1971

Perf 3,146' - 3,154' - 10/7/1971

Perf 3,166' - 3,176' - 5/23/1994

Perf 3,196' - 3,204' - 10/7/1971

T-R @ 3218'

Perf 3,212' - 3,218' - 10/7/1971

Perf 3,262' - 3,270' - 10/7/1971

Perf 3,406' - 3,412' - 10/7/1971

Perf 3,418' - 3,424' - 10/7/1971

Perf 3,432' - 3,435' - 10/7/1971

Perf 3,450' - 3,460' - 10/7/1971

Perf 3,482' - 3,492' - 10/7/1971

Perf 3,500' - 3,516' - 12/13/1954

Queen @ 3572'

PBTD	3572'
TD	3604'
Hole Size:	4-3/4"
Prod. Liner:	4", 9.5# FJ
TOL:	2854'
Liner Set at:	3604'
Cement:	45 sx Neat Cement
TOC:	TOL

Field: **Cooper Jal Unit**

	Location:
Footage:	330 FNL & 990 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,311'
KB:	3,321'
KB Calc:	10'
ck w/log?	Yes

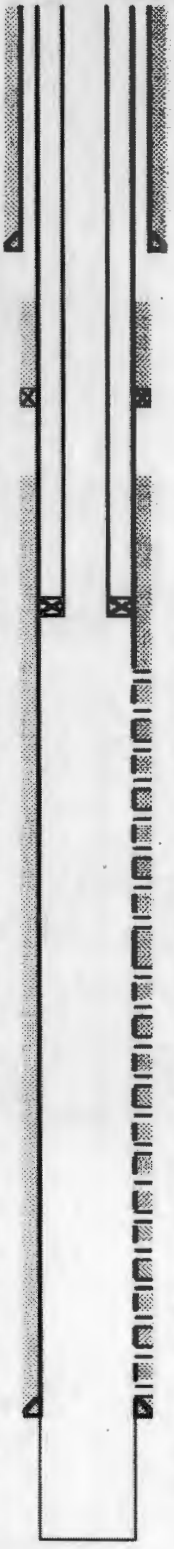
Date	History
18-Jun-54	Open hole complete 3465' - 3552'
9-Jun-56	Place well on rod pump.
5-May-71	Convert well to injector.
10-Feb-84	CO to TD & ran new tbg.
4-Dec-93	CO 6' of fill to TD & acidize 3465' - 3552' w/ 4200 gal 20% HCl & 1900# RS. Perf 3020' - 3307' at 2 SPF & acidize w/ 4200 gal 20% & 300 BS.
14-Feb-02	Tag Fill at 3056' w/ SL
10-Sep-03	Found HIC from 78' - 109'. Backed off at 149' & screwed on new csg.
	CO fill to 3477'. Perf 3324' - 3461' & acidize all perfs w/ 3000 gal 15%.
31-Oct-03	Redress leaking pkr.
2-Dec-04	Jet was w/ CT - 2 passes. Acidize 3511' - 3020' w/ 4200 gal in 3 passes.
7-Nov-05	Tag Fill at 3469' w/ SL
21-Apr-09	Tag fill at 3338' w/ WL
20-Jun-12	Tag fill at 3220' w/ WL
7-May-14	In preparing for cleanout, found HIC between 44'-75'. Squeezed 13 bbls cement and sealed HIC
5-Jun-14	Cleaned out well to 3565', acidized with 10,000 gals 15% NeFe acid and 10,000 lbs rock salt, and put well back on injection.

	Tubing Detail (top to bottom)		
Joints	Description	Footage	Depth
93	2 3/8" IPC tbg.	2,931	2,931
	5 1/2" x 2 3/8" Baker Model AD-1 packer	3	2,934

	Rod Detail (top to bottom)		
Rods	Description	Footage	Depth

CJU #122

Wellbore Diagram



PBTD 3565'
TD 3565'

Reservoir: Cooper Jal

Well ID Info:	CJU #122 WIW
API No:	30-025-08636
Spud Date:	6/1/1954

Hole Size: 12-1/4"
Surf. Csg: 8 5/8" - 32#
Set @ 280'
Cement w/ 150 sx cmt + 2 sx Calcium Chloride
Circ: Yes
TOC: Surface

9/4/2003 - HIC at 78' - 109'. Backed off casing at 149' & ran new.

TOC: 900' (Calc)

DV Tool at 1200' (Cement w/ 100 sx)

TOC: 2273' (Calc)

Plr at 2934'

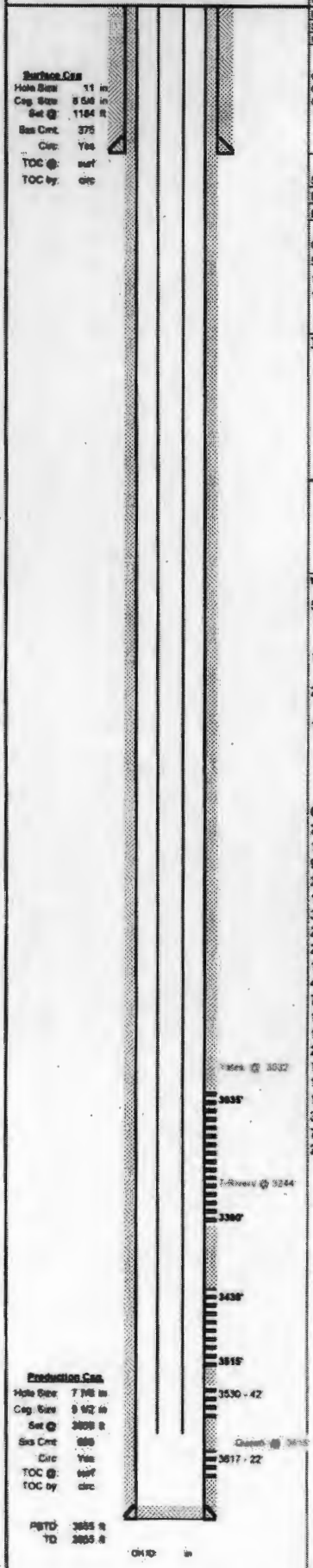
Yates @ 3019'
Perf 3,020' - 3,082' (2 SPF) - 12/4/1993
Perf 3,099' - 3,089' (2 SPF) - 12/4/1993
Perf 3,103' - 3,120' (2 SPF) - 12/4/1993
Perf 3,133' - 3,146' (2 SPF) - 12/4/1993
Perf 3,152' - 3,182' (2 SPF) - 12/4/1993
Perf 3,152' - 3,182' (2 SPF) - 12/4/1993
Perf 3,186' - 3,196' (2 SPF) - 12/4/1993
Perf 3,237' - 3,246' (2 SPF) - 12/4/1993
7-R @ 3247'
Perf 3,297' - 3,307' (2 SPF) - 12/4/1993
Perf 3,324' - 3,329' (2 SPF) - 9/8/2003
Perf 3,341' - 3,343' (2 SPF) - 9/8/2003
Perf 3,360' - 3,366' (2 SPF) - 9/8/2003
Perf 3,370' - 3,372' (2 SPF) - 9/8/2003
Perf 3,376' - 3,382' (2 SPF) - 9/8/2003
Perf 3,385' - 3,396' (2 SPF) - 9/8/2003
Perf 3,405' - 3,408' (2 SPF) - 9/8/2003
Perf 3,420' - 3,421' (2 SPF) - 9/8/2003
Perf 3,430' - 3,438' (2 SPF) - 9/8/2003
Perf 3,438' - 3,444' (2 SPF) - 9/8/2003
Perf 3,452' - 3,455' (2 SPF) - 9/8/2003
Perf 3,459' - 3,461' (2 SPF) - 9/8/2003

Hole Size: 7 7/8"
Prod. Csg: 5 1/2" - 14#, H-40
Set @ 3,468'
Cement: 200 sxs
DV Tool: 100 sxs

Queen @ 3610'

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME	Cooper Jal Unit				WELL NO.	125
STATUS	Active	Oil			API#	30-025-09632
LOCATION	1650 FNL & 2310 FWL, Sec 24, T - 24S, R - 36E; Lea County, New Mexico					
SPUD DATE:	-	TD	3658	KB	3,335'	DF
INT. COMP. DATE	09/09/54	PBTD	3655	GL	3,329'	

GEOLOGICAL DATA

ELECTRIC LOGS:

GR-CCL (6-5-87 Rotary Wireline)
Caliper log (8-20-54 Halliburton)
GR-N (8-22-54 The Western Co.)

CORES, DST'S or MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3032' 7-Rivers @ 3244' Queen @ 3616'

CASING PROFILE

SURF	8 5/8" - 24#, J-55 set@ 1184' Cmt'd w/375 sxs - circ cmt to surf.
PROD	5 1/2" - 14#, J-55 set@ 3655' Cmt'd w/680 sxs - circ cmt to surf
LINER	None

CURRENT PERFORATION DATA

CSG. PERFS: OPEN HOLE:

5-Sep-54 **Perf'd (L. M.) Queen f/ 3617-22' w/4 spf (24 holes); Perf'd (L. M.) 7-Rivers f/ 3530'-42' w/ 4 spf (52 holes)**

11-Jul-73 **Perf'd (Jalmat) 7-Rivers f/ 3438-40', 46-54', 62-64', 76-78' & 3511-15' w/ 1 spf (18 holes)**

19-May-87 **Perf'd (Jalmat) Yates f/ 3035',40,44,48,52,57,62,64,68,74,80,84,88,92,98, 3102',20,26, 37', 50', 56', 68', 78', 90', 96', 3202', 08', 13', 18,25, 30,40,51, 3269', 74,87,94,96,98, 3356',58 & 60 w/ 2 spf (84 holes).**

TUBING DETAIL 02/25/11

Length (ft)		Detail
2800	93	2 7/8" 6.5#, J-55, 8rd EUE tbg.
3	1	5 1/2" x 2 7/8" TAC
620	20	2 7/8" 6.5#, J-55, 8rd EUE tbg.
1	1	2 7/8" SN
4	1	2 7/8" x 4" Perf Sub
32	1	2 7/8" x 3 1/2" MA
3560		btm

ROD DETAIL 02/25/11

Length (ft)		
16	1	22' x 1 1/4" polish rod w/ 7/8" pin
0	1	1 1/2" x 1/4" x 14' liner
10	2	2', 6' - 1" Pony Rods
1225	49	1" steel rods
1250	50	7/8" steel rods
900	36	3/4" steel rods
100	4	1 1/2" K-Bars
1	1	1' - 1" Pony Rod
30	1	2 1/2" x 2" x 20' RWBC Pump
0	1	w/ 1 1/4" x 8' GA
3633		

WELL HISTORY SUMMARY

5-Sep-54 **Perf'd (L. M.) Queen f/ 3617-22' w/4 spf (24 holes): Frac'd w/3,000 gals oil / 4,500#'s sand. Swab - 59 bo & 15 bw. Set CIBP @ 3592' & dmp 10' cmt on top. Perf'd (L. M.) 7-Rivers f/ 3530 - 42' w/4 spf (52 holes): Acdz'd w/500 gals. Frac'd w/ 8,000 gals oil and 6,000#'s sand. IP= 500 bopd, 0 bwpd, & 802 Mcfgpd (flowing)**

11-Jul-73 C/O fill 3532 - 82' (150' of scale & formation). **Perf'd (Jal) 7-Rivers f/ 3438-40', 46-54', 62-64', 76-78' & 3511-15' with spf (18 holes). Acdz'd perfs 3530 - 42 w/1000 gals. Acdz'd perfs 3438-3515' w/2000 gals.**

21-Oct-74 C/O to 3582'. Frac LM(3438 -3542') w/40,000 gals x-l gel / 37,000#'s 20/40 sand & 10,000#'s 10/20 sand - max conc. 1.5 ppg in 3 stages using 500#'s rocksalt as diverter. Found tight spot in csg @ 3438'. Ran swedge 3438 - 46'.

19-May-87 Drilled out CIBPs at 3,582' & 3,592' and cleaned out to 3,655'. Acdz'd 3438'-3622' w/500 gals. Frac'd w/10,000 gals X-L gel & 22,500#'s 20/40 mesh sand (max conc. - 5 ppg). C/O sand 3640'-55'. **Perf'd Yates (Jalmat)f/ 3035',40, 44,48,52,57,62,64,68,74,80,84,88,92,98, 3102',20,26, 37', 50', 56', 68', 78', 90', 96', 3202', 08', 13', 18', 25', 30', 40,51, 3269', 74,87,94,96,98, 3356',58 & 60 w/ 2 spf (84 holes). Acidized w/ 5,000 gals. Frac'd w/ 40,000 gals X-L gel + 75,000# 12/20 sand. (2 stages, BS as block, max conc= 5 ppg). AIR= 25 bpm. Pmax= 4,000#.C/O to 3,685'.**

6-May-88 Tag fill @ 3619'

20-Sep-94 Changed out 6 bad rod couplings. Return well to production.

19-Apr-95 Replaced 1 jt of tbg. Return well to production.

9-Apr-96 Replaced 2 jts of tbg. Return well to production.

20-Sep-96 Replaced 1 jt of tbg. Return well to production.

10-Oct-97 Well had 1300' FL above pmp. C/O w/ bailer f/ 3592 - 3655'. LD 2 3/8" tbg. RIH w/2 7/8" tbg, pmp & rods. PWOP.

3-Sep-02 Parted (body break) @ 128 rod. Did not change out pump.

22-Jan-03 Parted (body break) @ 112 rod. Did not change out pump.

24-Jan-03 Parted (body break) @ 137 rod., right above the K-Bars. Did not change out pump.

11-Feb-03 Pulled 114 jts - tubing string. Hydrotest in hole, replaced 8 jts & SN. Changed out pump.

4-Apr-03 Parted below K-Bars. Changed out pump.

7-Apr-03 Parted (B B) @ 117 rod. Laid dn 54 3/4" rods due to electrolisis. Replaced 40-3/4", 6-7/8", & 9 1" rods. PWOP.

10-Apr-03 Changed out to Lufkin 320 Pumping Unit.Long stroke - 120", 9 SPM. Return well to production.

13-Jun-03 Replaced parted rod (111th 3/4" rod). Placed back on pump.

20-Jun-03 POOH w/ rods (Bad rods: 10-1", 49-7/8", & 27-3/4") & pump. Changed out tubing w/ new 2 7/8" tubing. PWOP.

13-Dec-05 POOH w/ rods, pump & tbg. Hydrotest tbg in hole to 6000#. RIH w/ pump & rods. Load & test pump to 500#. PWOP.

16-Aug-06 POOH with rods (Bad rods: 9-1" & 8-3/4") and pump. RIH with pump and rods. Load & test pump to 500#. PWOP.

11-May-07 POOH w/ rods, pump & tbg. Hydrotest tbg to 7000# - found hole on jt above SN. Laid down 2 jts due to pitting. PWOP.

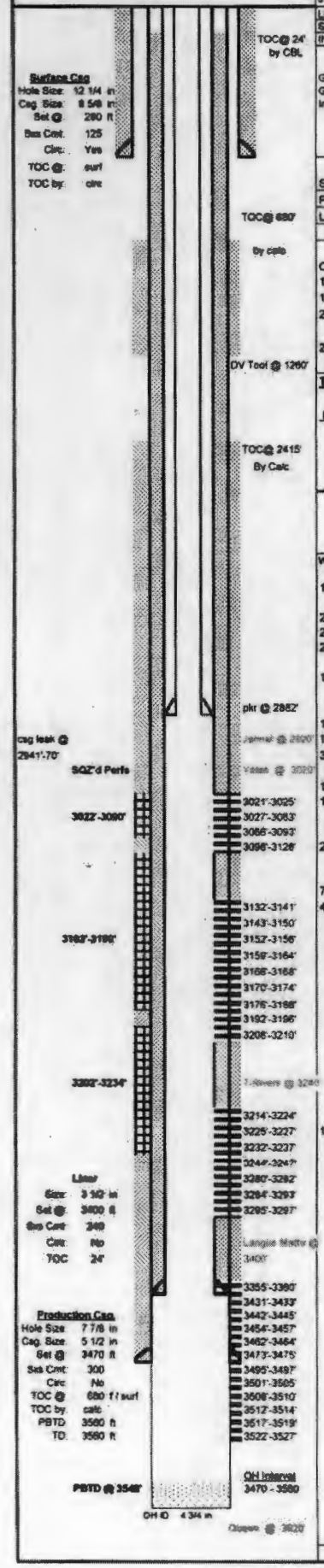
3-Jun-08 POOH with rods, pump and tubing. Hydrotest tubing to 6000# in hole. RIH with pump and rods. PWOP.

7-Jun-10 POOH with parted 126th 3/4" body break. Laid down 7 - 3/4" rods due to pitting. PWOP.

24-Feb-11 POOH w/ rods, pump & tubing. Found hole joint above SN. Hydrotest tubing to 7000# in hole. RIH w/ pump & rods. PWOP.

PREPARED BY:	Larry S. Adams	Domingo Carrizales	UPDATED:	25-Mar-11

WELLBORE SCHEMATIC AND HISTORY



LEASE NAME	Cooper Jal Unit				WELL NO.	126 WIW
STATUS	Active	Water Injector			API #	30-025-09636
LOCATION	1650 FNL & 2310 FEL, Sec 24, T - 24S, R - 36E, Lea County, New Mexico					
SPUD DATE:		TD	3560	KB	3,320'	DF
INT. COMP. DATE:	05/13/54	PBTD	3560	GL	3,311'	

GEOLOGICAL DATA

ELECTRIC LOGS:
GR-N (5-11-54 Schlumberger)
GR-CCL ((2-3-87 Rotary Wireline)
Injection Profile (4-21-95 Houston, Inc.)

CORES, DST'S, or MUD LOGS:
Borehole Analysis Casing Insp. Log (2/7/08 CNG/GR/CCL (2/7/08 Gray WL).
Radial Bond GR/CCL (2/28/08 Gray WL) Injection Profile (3/14/08 Gray WL)

HYDROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3020' 7-Rivers @ 3240' Queen @ 3620'

CASING PROFILE

SURF	8 5/8" - 24#, J-55 set@ 280'. Cmt'd w/125 sxs - circ cmt to surf
PROD	5 1/2" - 14#, J-55 set@ 3470'. Cmt'd w/200 sxs - TOC @ 2415' from surf. DV tool @1206' - pmp 100 sxs -
LINER	3 1/2" - 9.5# Flush Max @ 3,400'. Cmt'd w/ 170 sx Cl C w/6% gel, tailed w/ 70 sx Cl C w/ 2% gel. Circ'd 4 bbls cmt.
	5 1/2" - TOC@ 680' f/ surf by calc.

CURRENT PERFORATION DATA

CSG. PERFS: OPEN HOLE 3470 - 3560' Behind Liner

18-Feb-87 **Perf'd Yates f/3022,28,32,41,45,52,57,59,71,75,78,84,86,90, 3102,08, 12', 29', 35', 51'- 58', 67', & 3190'**

18-Feb-87 **Perf'd Seven Rivers: from: 3202,17, 19,21,23,32, & 34 w/2 spf (60 holes total)**

29-Feb-08 **Perf'd 7-Rivers f/3522'-27', 17'-19', 12'-14', 06'-10', 01'-05', 01'-05', 3495'-3497', 73'-75', 62'-64', 3454'-57', 3442'-45', 3431'-31' & 3360'-3360'.**

29-Feb-08 **Perf'd Yates f/ 3295'-3297', 84'-93', 80'-82', 44'-47', 32'-37', 25'-27', 14'-24', 3206'-10', 3192'-96', 76'-86', 70'-74', 3166'-68', 59'-64', 52'-56', 43'-50', 3132'-41', 3096'-3128', 86'-93', 27'-63', & 3021'-3025', Total Holes= 215. 1 JHPF.**

TUBING DETAIL 3/4/2008 **ROD DETAIL**

Length (ft)		Detail
9	KB	
3005	96	2 3/8" 4.7#, IPC, J-55, 8rd EUE tbg.
3	1	5 1/2" x 2 3/8" Baker Model AD-1 packer
3017		btm

WELL HISTORY SUMMARY

13-May-54 **Initial completion interval: 3470 - 3560' (7 RVRS/Queen OH). Frac'd w/4,000 gals oil & 6,000#'s sand. IP=480 bopd,0 bwpd & 672 Mcfgpd (flowing)**

25-Jun-74 **C/O fill from 3530 - 60' (30')**

25-May-75 **C/O to TD @ 3560'.** Acdz'd w/4,000 gals in 3 stages.

22-Aug-75 **C/O to 3560'.** Acdz with 1,500 gals (During job, after rock salt blocks). Frac with 34,000 gals X-L gel, 30,000#'s 20/40 sand and 10,000#'s 10/20 sand (3 stages, with rock salt blocks, max conc. 1.5 ppg). **Clean out to 3560'.**

18-Feb-87 C/O L M OH 3470'-3560' (90'-fill). Set BP @ 3394'. **Perf Yates (Jalmat) f/** 3022,28,32,41,45,52,57,59,71,75,78,84,86,90, 3102'-06', 3102, 08, 12, 29, 35, 51, 58, 67, 90, 3202,17, 19, 21, 23, 32, & 34 w/2 spf (60 holes). Acdz'd Jal (3022-3234') w/ 4000 gals. Fracd w/ 33,600 gals X-L gel & 50,000#'s 12/20 sd (2 stages with BS, max conc. 5 ppg). Rls BP, C/O to 3560'.

11-Jan-89 **Tag fill @ 3529'.** Did not Clean out.

1-Oct-93 **Administrative Order No. WFX-648. Approve Division Order No. R4019 & R-4029 for Waterflood Expansion.**

3-Nov-93 **C/O f/ 3488'-3560'.** Set plkr @ 3394' & acdz OH w/4,200 gals 20% NEFE HCL mixed w/ 220 gals Unichem TW425 mutual solvent. AIR=4 bpm. ISIP=vac. RIH w/plkr on CL tbg. Set plkr @ 2923'. Tst plkr. OK. Notified NMOCCD. SI.

19-Dec-93 **WELL CONVERTED TO INJECTION** - injecting into zones (3022 - 3234' & 3470 - 3560') at 316 bwpm, ISIP=vac.

17-Sep-97 POOH w/plkr & tbg. Found hole in 3rd jt f/ surface. Repaired leaking tbg head spacer spool. Ran Sonic Hammer tool w/ 5,000 gals 15% NEFE HCL & mutual solvent. Ran Baker AD-1 plkr on 93 jts of 2 3/8" CL tbg. **Set plkr @ 2905'.** Test PKR - OK. Initiated injection @ 265 bwpd.

2-Jun-05 POOH w/ plkr & tbg. Could not hydrotest cement lined tubing. RIH with new 2 3/8" IPC tubing and packer to 2,913'. Circulated with 70 bbls of packer fluid. Set packer. MIT annulus to 500 psig for 30 minutes did not test. **Set PKR at 2,882'.** MIT passed. **Pulled pressure chart for OCD.**

7-Nov-05 **RIH with 1 1/4" sinker bar and tagged at 3,089'.**

4-Feb-08 POOH w/ 2 3/8" IPC Tbg & 5 1/2" AD-1 PKR. RIH w/ 4 3/4" & 3 1/2" DCs on 2 7/8" TBG.Tagged @ 3,084'. C/O to 3,560'. Recovered scale & iron sulfide. RU Gray , ran Csg Insp log f/3,455' to surf & CNG/CCl f/3,551' to 2,400'. Hydrotest 2 3/8" IPC TBG set PKR @ 2,884'. Could not get a press test . POOH w/inj. string, PKR had a piece on rubber missing. Re-ran inj string - could not get a pressure test. Test csg w/RBP & PKR - could not get press test. RIH w/injection string. Could not get a press test. Hydrotest tbg string to 7000#. Found csg lk f/ 447' to 320'. Free Point showed csg free @ 132'. Laid down inj string. RIH w/ 3 1/2" Shoe, 1 joint and Float Collar. **Landed Shoe @ 3,400'.** Cemented w/ 170 sx Class C, w/ 6% gel; tailed w/ 70 sx Class C w/ 2% gel. Circ'd w/ 4 bbls cmt. Weld Flange on liner/csg. RIH w/ 2 3/4" Mill Tooth bit - drilled cmt f/ 2,900' to 3,548' w/ 5 bits. Recovered a bolt on the last bit. Ran Radial Bond Gamma Ray/CCL f/ 3,527' to surf. **TOC @ 24'. Perf'd 7-Rivers f/** 3522'-3527', 17'-19', 12'-14',, 06'-10', 01'-05', 3501'-05', 3495'-3497', 3473-75', 62'-64', 54'-57', 42'-45', 3431'-33' & 3365'-3360'; **Perf'd Yates f/** 3295'-3297', 3284'-93', 3280'-82', 3244'-47', 3232'-37', 25'-27', 14'-24', 3206'-10', 3192'-96', 76'-86', 70'-74', 66'-68', 59'-64', 52'-56', 42'-50', 3132'-41', 3096'-3128', 3086'-93', 3027'-63', & 3021'-3025'. Total Holes= 215. 1 JHPF. RIH with 3 1/2" Arrow Set 1X PKR on 2 3/8" IPC tbg. Set PKR @ 3008'. Pulled Press Chart for OCD.RIG up Cuatro: Pumped 1442 gals of 15% NEFE HCL acid. Initial rate @ 0.25 bpm, final rate= 2.0 bpm. Before Treatment: 150 bwpd at 1000 psig. **After treatment: 338 bwpd @ 805 psig.**

10-Jan-11 POOH with 2 3/8 IPC injection string and 3 1/2" Arrow Set 1X PKR.RIH with 2 3/4" bit. Cleaned out from 3,205 to 3,548'. Circ'd iron sulfite and scale.Hydrotest tubing in hole to 6000 psig. Acidized with 330 bbls 20% NEFE acid (90/10). Diverted with 6,750# RS. AIR= 6 bpm. Pmax= 5,080 psig. Pavg= 3,050 psig. ISIP= 1260 psig. Hydrotest injection string to 5,000 psig. MIT to 400 psig for 30 minutes. Pull chart for OCD. **Prior injection: 79 bwpd @ 861 #; after injection: 400 bwpd @ 750 #.**

PREPARED BY:	Larry S. Adams	Domingo Carrizales	UPDATED:	27-Jan-11

Field: **Cooper Jal Unit**

	Location:
Footage:	1650 FNL & 990 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,303'
KB:	3,312'
KB Calc:	9'
ck w/log?	Yes

Date	History
29-May-54	Treat OH f/ 3460' - 3541' w/ Dowell Stratofrac & 6000# sand.
13-Nov-58	CO 6' of frac sand and placed well on rod pump.
25-Aug-71	CO to 3537' & convert well to injector.
1-Sep-93	Set CIBP at 3389' w/ cmt to 3354' & perf 3019' - 3229'. Frac perfs w/
	63,000 gal Spectra Frac G-3000 & 255,340# 12/20 Brady Sand.
	CO sand f/ 2500'-3347' & place on prod.
24-Sep-13	Pump for 4 days, & tag fill at 3181'. CO to 3288', run pump and sanded
	up. Continue clean/pump sand multiple times and place on production.
16-Jul-94	Bail sand 3248' - 3389'.
24-Jan-95	Tag fill at 3312' - Did not CO.
19-Mar-97	Tag fill at 3305' - Did not CO.
17-Dec-99	Tag fill at 3302' - Did not CO.
20-Apr-00	Pull pump & rods, spot 500 gal acid in tbg. Run pump & rods.
16-Apr-02	Repair stuck pump.
13-Dec-02	Stuck pump. CO bridge at 3146' and cont to 3245'. Drop 20 acid sticks.
9-Jan-04	Tag fill at 3230' - Did not CO.
5-Aug-04	Tag at 3233' & Bail to 3,246' - couldn't make more hole - recv'd 20' scale.
8-Oct-04	Unseat pump & pump 50 bbl prod wtr w/ 10 gal surfactant. RWTP.
24-Nov-04	Tag at 3229' & Bail to 3,245' - couldn't make more hole - recv'd 26' scale.
28-Dec-04	Replace sand screen with perf sub and run blast joint.
9-Nov-07	Repair pump and rods.
23-Mar-11	Clean out with concave mill to 3,354'. Perf Yates f/ 3048' - 3239'. Perf
	7-Rivers f/ 3242' - 3296'. Foam sand frac w/ N2 & 155,000# 16/30.
30-Sep-11	Long stroke well.
11-Nov-11	Drill out CIBP at 3354' & clean out to 3541'.
10-Jul-12	Run pressure gradient log & repair HIT.
27-Aug-12	Body break in 4th 7/8" rod and replaced 2 x 1" rods.
27-Nov-12	Body break in 5th 7/8" rod. LD 7 x 7/8" & 10 x 3/4" rods (wear & pits).
22-Jul-13	Rods unscrewed at 2300'. Pump was stuck due to sand.
29-Jul-13	Test tbg - found small collar leak. Repaired and returned to production.

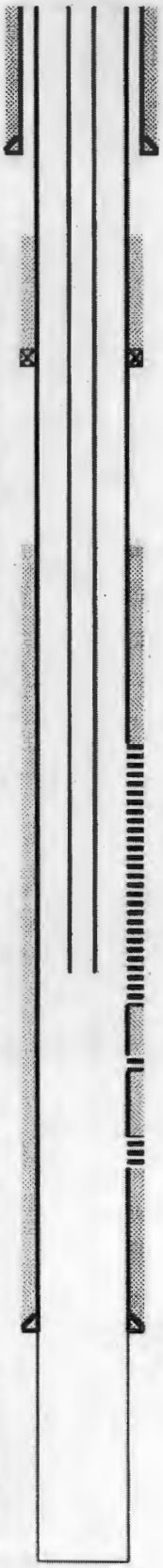
Joints	Tubing Detail (top to bottom) Description	Footage	Depth
94	2 7/8" 6.5#, J-55, 8rd EUE tbg.	2,963	2,963
1	5 1/2" x 2 7/8" TAC	3	2,966
1	2 7/8" 6.5#, J-55, 8rd EUE tbg.	61	3,029
1	2 7/8" Super Max Blast Joint	32	3,060
1	2 7/8" SN	1	3,061
1	2 7/8" Perf Sub	4	3,065
1	2 7/8" Desander	32	3,097
2	2 7/8" tubing with Bull Plug MA	63	3,160

Rods	Rod Detail (top to bottom) Description	Footage	Depth
1	26' x 1 1/4" polish rod w/ 7/8" pin	16.00	16.00
1	1 1/4" x 1 1/2" x 14' liner	0.00	16.00
1	8' x 7/8" grade D pony rod	8.00	24.00
57	7/8" D steel rods	1,425.00	1,449.00
36	3/4" D steel rods	950.00	2,399.00
24	1 1/2" sinker bars	600.00	2,999.00
1	2 1/2" x 2" X 20' RHBC pump	20.00	3,019.00
	1 - 1/14" Strainer	0.00	3,019.00

Pumping Unit:
Updated: 01/10/14 MCB

CJU #127

Wellbore Diagram



Reservoir:	Cooper Jal
Well ID Info:	CJU #127
API No:	30-025-08537
Spud Date:	5/13/1954

Hole Size: 12-1/4"
Conductor: 8-5/8", 24#
Set @ 290'
Cement w/ 150 sx
Circ: Yes
TOC: Surface

TOC: 676' (Calc)

DV Tool at 1205' (Cement w/ 100 sx)

TOC: 2408' (Calc)

Yates @ 3018'

8/18/93 - Perf'd (2 SPF) - 3018'-21', 28'-48', 64'-77', 90'-94', 3105'-16', 3130'-41', 46'-79', 83'-87', 94'-98' & 3216'-29'

3/23/11 - Perf'd - 3048'-57', 59'-64', 77'-80', 94'-98', 3114'-30', 41'-43' 3192'-94', 3204'-08', 11'-13', & 31' - 36'

EOT at 3160'

7-R @ 3236'

3/23/11 - Perf'd - 3242'-46'

3/23/11 - Perf'd - 3284'-88'

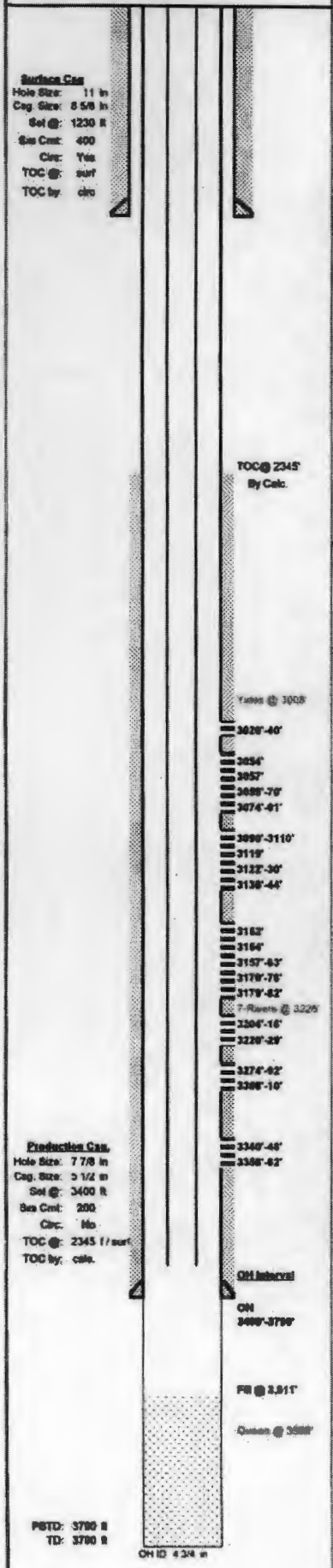
Hole Size: 7-7/8"
Prod. Liner: 5-1/2", 14#
Set at: 3460'
Cement: 200 sx
DV Tool: 100 sx +10% Gel

Queen @ 3800

PBTD 3541'
TD 3541'

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME	Cooper Jal Unit			WELL NO.	128
STATUS:	Active	Oil		API#	30-025-11151
LOCATION:	1650 FNL & 330 FWL, Sec 19, T - 24S, R - 37E; Lea County, New Mexico				
SPUD DATE:	05/13/54	TD 3790	KB 3,314'	DF	
INT. COMP. DATE:	07/27/54	PBTD 3790	GL 3,304'		

GEOLOGICAL DATA

ELECTRIC LOGS: DSCNL (9-11-85 CRC Wireline) Gray Wireline Comp Neutron GR-CCL 1/3/06

CORES, DST'S, or MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS: Yates @ 3008' Seven Rivers @ 3226' Queen @ 3598'

CASING PROFILE

SURF	8 5/8" - 28#, J-55, (OH 11") set@ 1230' Cmt'd w/400 sxs - circ cmt to surf.
PROD.	5 1/2" - 15.5#, J-55 (OH 7 7/8") set@ 3400' Cmt'd w/200 sxs - TOC @ 2345' from surf by calc.
LINER	None

CURRENT PERFORATION DATA

CSG. PERFS: OPEN HOLE : 3400'-3790'

10-Oct-85 **Perf'd Jalmat (Yates)** f/3023', 28', 32', 38', 54', 57', 59', 60', 70', 72', 74', 99', 3103', 19', 23', 27', 43', 52', 54', 61', 73', 75', 80', 3205', 10', & 3221' w/ 2 spf (52 holes)

6-Jan-06 **Perf'd Jalmat (Yates)** f/3020'-40', 3061'-69', 3075'-81', 3090'-3110', 3122'-30', 3138'-44', 3157'-63' 3170'-76', 3179'-82', 3204'-16', 3220'-29' , 1 JHPF Feet=104, Holes=104

6-Jan-06 **Perf'd Jalmat (7-Rivers)** f/3274'-92', 3308'-10', 3340'-48' and 3358'-62', 2 JHPF, Feet=34, holes=69.

TUBING DETAIL 1/30/2008

Length (ft)		Detail
2700	89	2 7/8" 6.5#, J-55, Super Max
3	1	5 1/2" x 2 7/8" TAC
690	23	2 7/8" 6.5#, J-55, Super Max
32	1	2 7/8" Super Max Blast Joint
1	1	2 7/8" SN
4	1	2 7/8" Perf Sub
31	1	3 1/2" OD slotted MAJ
3421		

ROD DETAIL 2/1/08

Length (ft)		Detail
22	1	1 1/4" x 26' polish rod w/ 7/8" PIN
8	1	1 1/4" x 1 1/2" x 16' liner
18	3	4', 6', 8' - 1" pony rods
975	39	1" D steel rods
1200	48	7/8" D steel rods
1000	40	3/4" D steel rods w/ 3 - 2' roller guides
150	6	1 1/2" sinker bars
4	1	7/8" Guided Pony Sub
1	1	On & Off Tool
20	1	2 1/2" x 2" X 20' PAP 40 Ring (Right Release)
0	1	1 1/4" x 8' gas anchor w/ 1 1/4" screen, 50 slot
3380		

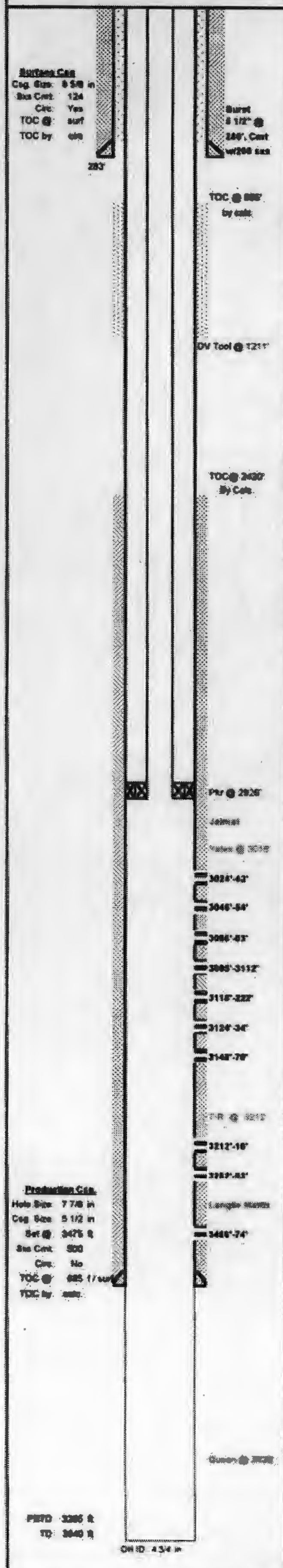
WELL HISTORY SUMMARY

27-Jul-54	**IC Interval: 3400'-3600' (7 RVRS/Queen OH).** No Treatment. **IP = 120 bopd, 0 bwpd, & 300 Mcfgpd (flowing)**
7-Jun-74	C/O fill from 3438 - 3600'. **After WO: 64 bopd & 103 bwpd**
10-Oct-85	**Deepened to 3675',** Jet washed 3400'-3600'. Acdz'd w/2,000 gals. Frac'd w/ 32,000 gals & 82,500#'s 12/20 sand in 2 equal stages. Maximum sand conc was 7 ppg. **Perf'd Jal (3023 -3221) w 2 spf (52 holes).** Acdz'd w/ 2,000 gals Frac'd w/29,000 gals & 50,000#'s 12/20 sand in 2 equal stages. AIR=18 bpm. Max sand concentration 5 ppg.
7-Jan-87	Upgrade pmp equipment to 2 7/8" tbg & 2 " rod pmp.
30-Jul-87	C/O fill to 3600'
3-Aug-88	C/O fill rom 3616 -3626'. Acdz'd w/3,200 gals & 1000#'s rock salt. AIR=2.5 bpm @ 200 psi
29-Aug-94	Acdz'd OH 3400 -3641' w/2,100 glas 20% NEFE HCL, 110 gals micellular solvent & 2,500#'s RS in 5 stages. AIR=3 bpm at 300 psig. Set RBP @ 3336'. Acdz'd perfs 3023'-3221' w/2,100 glas 20% NEFE HCL & 2,500#'s RS in 5 stages. AIR= 2.5 bpm. Scale sqz'd perf's w/110 gals of TH-793 @ 3 bpm & 300 psi. SI for 24 hrs. Retrieved RBP at 3,336'. **PWOP. After WO: 35 bopd, 296 bwpd, & 51 Mcfgpd**
13-Oct-95	Repaired rod part and replaced bad rods & couplings.
24-Apr-00	Change out pumping tee. Replaced 4 jts tbg, 8 - rods, & 30-boxes and pmp. Placed well back on production.
6-Sep-02	Pulled tubing string. Hydrotest tubing in hole. Change out pump.
15-Nov-02	Change out polish rod liner.Placed well back on production.
22-Mar-03	Pulled tubing string. Hydrotest tubing in hole. Change out pump.
26-Feb-04	POOH w/ rods, pump, & tubing. Hydrotest tubing in hole to 7000# = busted 4 joints. RIH with pump and rods. PWOP.
28-Dec-04	RIH with 4 3/4" bit and 12 3 1/2" drill collars on 2 7/8" WS. Drilled and C/O to 3619'. RIH with 4 3/4" button bit air drilled to 3,790'. Logged compensated neutron log f/ **3,758' to 2,750'. Perf'd 7-Rivers** f/ 3358'-62', 3340'-48', 3308'-10', & 3274'-92'. 2 JHPF, total holes=69. **Perf'd Yates f/ 3020'-3229',** 1 JHPF, Total holes = 104. Washed perfs w/ 2% KCl and surfactant water via Perf-Clean Tool. Acidize perfs w/ **60 bbls 15% NEFE HCl** acid via Perf-Clean Tool. Fracture stimulated the open hole w/ 80,000# 12/20 mesh sand at 32 BPM . Attempted to Fracture stimulate the Yates & 7-Rivers w/ 40,000# 12/20. Frac screened out on 4 ppg, **total sand in formation = 16,000#.** Cleaned sand f/ inside tbg w/ coil tubing. POOH with treating packers. Cleaned out frac sand to **3765'.** RIH with production string. PWOP.
9-Mar-05	POOH with rods, pump, and tubing. Pump was stucked inside of tubing. There was joint half full of frac sand.
13-Sep-05	POOH w/ rods & pump. Tagged at 3567'. POOH w/ tbg. RIH w/ notch collar & tbg baller, tagged at 3567'. Could not make any hole. RU Air Foam Unit. Cleaned to 3590', could not make anymore hole. RIH w/ 4 3/4" bit, C/Oto **3790'.**
26-Oct-05	Tagged fill @ 3745'. POOH w/ rods, pump & tbg. RIH w/ prod string. Load & pressured pump & tubing. PWOP.
14-Nov-05	Long stroke well.
13-Dec-05	POOH w/ rods & pump. PUH w/ tbg to top of fluid level. Swabbed well. POOH w/tbg. RIH w/prod string. PWOP.
10-Jan-06	Long stroke well, pump was stuck. POOH w/ rods, pump & tbg. RIH w/ tbg, pump & rods. Load & test pump. PWOP.
10-Mar-06	POOH w/ rods. POOH w/ tbg & stucked pump (pump stucked on jt above SN). RIH w/ tbg, plunger & rods. PWOP.
16-May-06	Parted 45th (7/8") caused by stress. POOH with rods and pump. RIH with pump and rods. PWOP.
28-Nov-06	POOH with rods and pump. RIH with pump and rods. PWOP.
30-Jul-07	Found bottom of polish rod coupling parted. Long stroke well. PWOP.
26-Jan-08	POOH w/ rods & pump. Tagged at 3486'. POOH w/ tbg. RIH w/ 4 3/4" bit & tbg baller, **tagged at 3517'.** Could not make any hole. POOH & laid bit & tbg baller. RIH w/ tbg string, pump & rods. Load & test pump to 500# - okay. PWOP.

PREPARED BY: Larry Adams D. Camizales UPDATED 05-Feb-08

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME	Cooper Jal Unit			WELL NO.	132 WIW
STATUS:	Active	Water Injector		API#	30-025-09838
LOCATION:	2310 FSL & 990 FEL, Sec 24, T - 24S, R - 36E; Lea County, New Mexico				
SPUD DATE:	04/08/54	TD	3640	KB	3,315'
INT. COMP. DATE:	05/12/54	PBTD	3265	GL	3,307'

DF

GEOLOGICAL DATA

ELECTRIC LOGS: | **CORES, DST'S or MUD LOGS:**

GR-N from 0 - 3566' (4/29/54 Schlumberger)
GR-CBL-MSG-CCL from 2,000 - 3,300' (6-7-95 Halliburton)
Injection Profile (1-29-97 Houston, Inc.)

HYROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3016' 7-Rivers @ 3236' Queen @ 3626'

CASING PROFILE

SURF. 8 5/8" - 24#, J-55 set@ 283'. Cmt'd w/124 sxs - circ cmt to surf.
PROD. 5 1/2" - 14#, J-55 set@ 3475'. Cmt'd w/400 sxs - TOC @ 2420' from surf. DV tool @1211' - pmp 100 sxs -
LINER None 5 1/2" - TOC@ 885' f/ surf by calc.

CURRENT PERFORATION DATA

CSG. PERFS: OPEN HOLE: 3475 - 3566' (7 RVRS/Queen OH).

1-Jun-95 **Perf'd Yates f/ 3024'-42', 3066'-83', 3095'-3112', 3125'-33' & 3148'-70' w/ 2 spf (164 holes total)**
26-Jan-09 **Perf'd 7-R f/ 3466'-74', 3262'-93', 3212'-16'; Perf'd Yates f/ 3152'-70', 3124'-34', 3118'-22', & 3046'-54',**
75 ft, 75 holes, 1 JHPF.

TUBING DETAIL 1/26/2009 **ROD DETAIL**

Length (ft)	Detail
8	KB
2915	98 jts - 2 7/8" 6.5#, CL, J-55, 8rd EUE tbg.
3	1- 5 1/2" x 2 7/8" Baker Model AD-1 packer
2926	btm

WELL HISTORY SUMMARY

12-May-54	Initial completion interval: **3475 - 3566' (7 RVRS/Queen OH).** Frac'd w/4,000 gals & 0 #'s sand. **Burst csg @** 280', Cement sqz csg leak w/200 sxs (3 jobs) Tst OK @ 875 psi. Frac'd w/4,000 gals & 6,000#'s sand. **IP = 173 bopd, 246 Mcfpd (flowing).**
11-Apr-76	Acdz'd OH w/ 1,500 gals. Tight spot in csg @ 210'
18-Feb-85	C/O fill from 3473 -3555' (82' of fill. **Deepened to 3640'.** Acdz'd OH 3475 -3640' w/4,000 gals in 2 stages using 500# rock salt. Frac'd w/22,000 gals X-L gel & 56,000#'s 12/20 sand ramping to 8 ppg.
11-Mar-87	C/O fill to 3640'
21-Apr-87	C/O fill to 3628'
15-Apr-88	Tag fill @ 3628'
01-Oct-93	**Administrative Order No. WFX-648, Approved Division Order No. R-4019 & R-4020 for Waterflood Expansion**
01-Dec-93	**CONVERTED TO INJECTOR:** C/O from 3508 - 3640'. Acdz'd OH w/4,000 gals 20% NEFE combined with 110 gals UT-460 & 110 gals T-425 microlluar solvent & 1400#'s rock salt. AIR=3 bpm @ 900 psi. ISIP=680 psi. RIH w/ CL tbg & pkr. Set pkr @ 3370'. Noted pkr is 105' above hole in csg. **Inject @ 283 bwpd w/ TP=vacuum.**
01-Jun-95	Ran GR-CBL-CCL. **Perf (Jalmat) 2950 - 2170 (selectively).** Acdz'd w/5,000 gals 15% NEFE HCL &250 RCN ball sealers in 6 stages. Ran 2 3/8" CL tbg & pkr. Set pkr @ 2962'. Tst pkr. OK. **Inject @ 481 bwpd w/ TP=580 psi. Converted to DHC injector w/ Pmax surf injection press = 590 psi.**
26-Jun-00	C/O hard scale from 3145 - 3370'. **Set CIBP @ 3300' and dmp 35' cmt on top.** (PBTD @ 3265'). Acdz'd perfs 3024'-3170' w/ 4,000 gals 15% NEFEHCL & 2,000#'s rocksalt in 3 stages. AIR=4 bpm @1380 psi. ISIP=570 psi, P15 min= 140 psig. Ran pkr on 2 3/8" CL tbg & set pkr @ 2955'. **Injecting @ 250 bwpd, TP=180 psi.**
14-Feb-02	Tag TD using SL unit (1 1/4" x 5' sinker bar). Tag fill @ 129' (3511' of fill)
14-Oct-03	Bradenhead Test failed: Bled CSG dn to 0 psi. SI for 15 min-press build up to 500#. Witnessed by OCD Rep-Buddy Hill.
28-Oct-03	POOH with 2 3/8" IPC tbg & 5 1/2" x 2 3/8" AD - 1 packer. Laid down 2 3/8" IPC tbg. Clean out to 3265'. POOH and laid down with 4 3/4" bit, 6 - 3 1/2" drill collars. RIH with redressed 5 1/2" x 2 3/8" AD-1 packer on reconditioned 90 - 2 3/8" IPC tubing to 2954'. Packer would not test. Set packer at 2925', would not test. POOH with injection string. Test casing to 500 psig - held. RIH with injection string to 2931'. Circulated annulus with 70 barrels of 2 % KCl & inhibited packer fluid. Set Packer with 20,000# tension. Test casing to 500 psig - held. Pulled pressure chart for OCD.
07-Nov-05	RIH with 1 1/4" sinker bar and **tagged at 3,272' (PBTD).**
20-Jan-09	POOH w/2 3/8" IPC tbg & 5 1/2" x 2 3/8" AD - 1 packer. RIH w/ 4 3/4" bit & DCs. Drilled cmt & CIBP @ 3300'. C/O to 3640'. Lost Perf Gun in open hole. Fished Perf Gun. **Perf'd 7-R f/ 3466'-74', 3262'-93', 3212'-16'; Perf'd Yates f/3124'-34', 3118'-22', & 3046'-54', 75 ft, 75 holes, 1 jspf, 120 degree phasing.** Test annulus to 350 psig.
24-Apr-09	RU Gray WL. Tagged @ 37' w/ logging tool. RD wireline. Placed well on injection. **Rate/Press: 781 bwpd.694#.**
13-Apr-11	POOH with injection string. Cleaned out from 3,561' to 3,625' with 4 3/4" bit. Acidized with 20,000 gals 15% 90/10 blend plus 15,000# salt. ISIP= 560 psig. RIH with injection string. Set PKR at 2,926'. Pulled MIT chart for OCD.

PREPARED BY:	Larry S. Adams	D. Carrizales	UPDATED:	05-Aug-11

Field: **Cooper Jal Unit**

	Location:
Footage:	2310 FSL & 2310 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,318'
KB:	3,328'
KB Calc:	10'
ck w/log?	Yes

Date	History
9-Aug-46	Initial completion interval: 3465 - 3550' (7 RVRS/QUEEN OH). Frac'd w/
	4,000 gals lse oil & 6,000#'s sand. IP= 227 bopd, 0 bwpd, & 194 Mcfgpd
	(flowing)
15-Oct-56	Refrac'd OH w/ 19,000 gals lse oil & 33,000#'s sand.
25-Aug-59	Set CIBP @ 3375' & dmp'd 5 sxs cmt on top. Perf'd (Yates) intervals w/ 2
	spf 3222-30', 3235-39', & 3296 - 3306' (44 holes total). Frac'd perf's
	w/15,000 gals lse oil & 23,300#'s sand.
14-Jun-71	CONVERTED TO LANGLIE MATTIX INJECTOR: Drld out CIBP @ 3375'
	& C/O to TS @ 3540'. Ran pkr on 2 3/8" CL tbg. Set PKR @ 3391'.
	Initiated injection. Note- Yates perfs are not sqz'd & above pkr.
1-Oct-79	SI Well. Discovered 350 psi annulus pressure. Bled off presssure in 3
	days.
26-Nov-79	Set BP @ 3350' & cmt sqz'd perf 3222 - 3306' w/ 200 sxs @ 1000 psi.
	D/O & tst sqz to 1000 psi. OK. D/O CIBP and C/O open hole from 3465 -
	3550'. RIH with pkr on 2 3/8" CL tbg. Set pkr @ 3391' and placed well on
	injection.
14-Oct-84	Acdz'd OH w/1,000 gals
11-Mar-86	C/O & side-jet wash OH. Acdz OH w/2,000 gals. Found csg leaks @ 170'
	& old sqz'd perfs 3222'-3306. Perf'd 2 holes @ 260' & sqz'd with 250 sxs
	- circ cmt to surface. Sqz'd cmt into old perfs 3222 - 3306' w/ 250 sxs.
	D/O and tst csg (0-3400') to 600 psig. Lost 20 psig in 30 minutes.
	Returned well to injection.
25-Feb-88	Tst csg to 400 psi. Good tst. Acd'z OH w/ 3000 gals. Did not C/O. Ran
	new flourline tbg. Returned well to injection.
10-Mar-88	Step rate tst indicates frac pressure (surface) is 1020 psi.
18-Jul-91	Failed MIT. Shut-in well. (Sqz'd perfs 3222 - 3306' leaking)
14-Oct-93	Set CIBP @ 3354' & dmp 35' cmt on top. Perf w/ 2 spf (.56" dia hole -120
	deg phasing) 3018'-3042', 3045' -54', 3059'-3086', 3070'-89', 3100'-14',
	3127'-42', & 3146'-74' (232 holes total). Frac w/45,360 gals gel wtr
	carrying 184,140#'s 12/20 Brady sand & 40,900#'s 12/20 resin coated
	sand. AIR=34 bpm, PM=3800 - 2100 psi, ISIP=1600 psi. C/O sand f/
	3085'-3316'. Ran tubing pump and rods. After WO: 26 bopd, 286 bwpd,
	& 33 Mcfgpd.
16-Mar-01	Set CIBP @ 2975 on WL. Circ well w/gelled brine. Spot 35 sxs cmt f/
	2975 - 2700'. WOC. Tag TOC @ 2680'. Perf 6 holes @ 1400'. Sqz 50
	sxs cmt into perfs to 850 psi. WOC. Tag TOC @ 1145'. Perf 6 holes @
	400'. Sqz 150 sxs cmt into perfs to 750 psig. WOC. Tag TOC @ 145'.
	Spot cmt plug f/ 30' to surface. Cut off wellhead & cap 5 1/2" casing.
	Installed Dry hole marker & C/O Location. NMOCD notified - well P&A'd
	3-21-2001.
16-Mar-11	Ran in w/4 3/4" bit 3 drill collars tagged cmt @ 92', picked up swivel drilled
	from 175' to 452', circ'd well clean, test casing to 450#, ran in with bit,
	tagged @ 1109, picked up swivel drilled from 1150' to 3700' in 8 days
	circulated well clean. Perf'd 7-Rivers f/ 3439'-3442', 3431'-3434', 3380'-
	3383', 3360'-3365', 3290'-3307' & 3248'. Perf'd Yates f/ 3236'-3242', 3220'-
	3233', 3192'-3195' & 3182'-3190'. ran w/ 5 1/2" composite plug & set @
	2960', ran in w/ 3 1/2" Shoe, 11-3 1/2" jt, 3 1/2" Float Collar, 92 3 1/2" Jts,
	test tbg to 7000 psi, test good, nipple down BOP landed tbg, set end of
	shoe @ 2,958'. Pumped 110 bbls broke circulation, pumped 30 BBLS
	lime water, 5 BBLS fresh, 185 sks cmt install 3 1/2" wiper plug, flush w/
	25 bbls, circulated 2.5 BBLS cmt to pit, ran in w/2-3/4" bit on 2 3/8" tbg,
	tagged float collar @ 2930', drilled up float collar, shoe, tagged composite
	plug made 8" stop making hole, pulled 14 jts. Pulled out w/bit, ran in w/mill,
	tagged plug 2958', drilled up plug, ran in w/10 jts, circ'd well clean, pulled
	out w/tbg, ran in w/3-1/2" arrow set 1X 2-3/8" work string test to 5000 PSI,
	set @ 2928, press to 360 psi, test good. Acidized perf 3018-3442',
	released from Pkr w/on & off tool, pulled and laid work string, ran in
	w/ 2-3/8" IPC tbg test to 6,000 psig, test good. Circulated 45 BBL packer
	fluid, latch to 3-1/2" Pkr test to 400 PSI test good.
21-Jun-12	Inj Profile shows: fill @ 3496', 42% into 30' of T. Yates, 43% well
	distributed f/ M. Yates to B. Yates & 15% into M, 7-R. Rate: 996 BW @
	950#

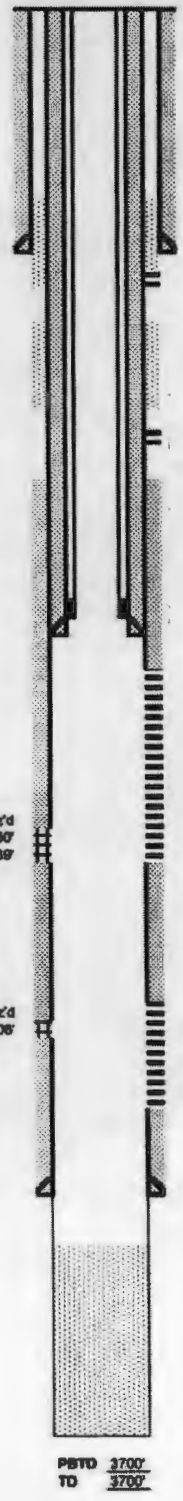
Joints	Tubing Detail (top to bottom) Description	Footage	Depth
93	2-3/8" IPC Tbg	2,927	2,927
1	3-1/2" Arrow Set 1-X Packer	1	2,928

Rods	Rod Detail (top to bottom) Description	Footage	Depth

Pumping Unit
Updated: 04/16/14 MLS

CJU #148
(Also labeled #212)

Wellbore Diagram



Reservoir:	Cooper Jal
Well ID Info:	CJU #148 WIW
API No:	30-025-09842
Spud Date:	3/6/1954
Logs:	GR-N from 50-3553' (3-28-54 Schlumberger)
Cores:	Cored 3005' - 3230'. Avg. Por. = 21.1%
	Avg. Perm. = 37 md, Avg. Sw = 36.9%

Hole Size: 12-1/4"
Surf. Csg: 8-5/8" - 28#, J-55
Set @ 279'
Cement w/ 135 sx cmt
Circ: Yes
TOC: Surface

Perf'd 6 holes @ 400'

TOC: Unknown

DV Tool at 1209' pmp 150 sxs

Perf'd 6 holes @ 1400'

TOC: 1866' (by Calc.)

Hole Size: 4.887" (Drift of 5-1/2" prod casing)
Liner: 3-1/2"
Set @ 2,958'
Cement: 185 sxs
TOC: Surface

Inj Tbg Pkr @ 2928'

Yates @ 3018'
3018'-3042'
3045'-3054'
3059'-3086'
3070'-3089'
3100'-3114'
3127'-3142'
3146'-3174'
3182'-3190'
3192'-3195'
3220'-3233'
3236'-3242'
7-R @ 3244'

Hole Size: 7-7/8"
Prod. Csg: 5-1/2" - 15.5#, J-55
Set @ 3,465'
Cement: 300 sxs thru shoe, TOC @ 1885' from surf by calc.
DV Tool: 150 sxs thru DV tool @ 1209', TOC unknown

3248'-3252'
3290'-3307'
3360'-3365'
3380'-3380'
3431'-3434'
3439'-3442'

OH Interval - 3465'-3700'
OH ID: 4-3/4"

Fill @ 3496'

Queen @ 3615'

Field: **Cooper Jal Unit**

	Location:
Footage:	771 FNL & 170 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,304'
KB:	3,316'
KB Calc:	12'
ck w/log?	Yes

Date	History
10-Nov-77	Perf 3572' - 3606' & acidize w/ 1500 gal 15% HCl & 15 BS. Perf 3296' -
	3530' & acidize w/ 5000 gal 15% HCl & 54 BS. Frac all perfs w/ 60,000
	gals gelled wtr, 44,000# 20/40 sd, 40,000# 10/sd & 36 BS.
16-Oct-79	Acidize perfs w/ 1500 gal + Scale inhibitor
10-Nov-87	Tag fill at 3,608' & did not clean out. Acidize w/ 2000gal 15% + 1000# RS.
30-Jan-93	Tag fill at 3,603'. Perf 3460' - 3480' & frac w/ 35658 gal Spectra G-3000 &
	53,000# 12/20 Brady Sand (Screened out on 9ppg stage). CO & RWTP.
23-Aug-93	Tag at 3610' & convert to Injector.
8-Nov-05	RIH w 1-1/4" x 5' Sinker Bar and Tag @ 3630'
19-Mar-08	CO to 3682'.
15-May-09	RU Grey Wireline. Ran injection profile. Placed well on injection.
	Rate/Press. 894 bwpd @ 806#.
22-Sep-11	Run Injection profile and tag up at 3,622'. No entry in perfs at 3604' - 3606'.

Joints	Tubing Detail (top to bottom) Description	Footage	Depth
	KB	12	12
101	2 3/8" 4.7#, CPL, J-55, 8rd EUE tbg	3,228	3,240
1	5 1/2" x 2 7/8" Baker Model AD-1 packer	3	3,243

Rods	Rod Detail (top to bottom) Description	Footage	Depth

Pumping Unit
Updated: 1/3/14 JDA

CJU #151W

Wellbore Diagram

Reservoir:	Cooper Jal
Well ID Info:	CJU #151W
API No:	30-025-28662
Spud Date:	10/15/1977

Hole Size: 12-1/4"
Surf. Csg: 8 5/8", 24#, K-55
Set @ 373'
Cement w/ 275sx Class C w/ 2% CaCl + 1/4#/sk Flocele
Circ: Yes (70 sx)
TOC: Surface

TOC: Surf (Circ 60 sx to surface from 2nd stage)

DV Tool at 1300' (Cement w/ 215 sx)

TOC: 1300' (Circ 170 sx to surface from 1st stage)

Yates @ 3021'

Packer at 3240'

7 Rivers @ 3246'

Perf 3,296' - 3,300' (5 Holes) - 11/10/1977

Perf 3,356' - 3,360' (5 Holes) - 11/10/1977

Perf 3,371' - 3,374' (4 Holes) - 11/10/1977

Perf 3,437' - 3,442' (6 Holes) - 11/10/1977

Perf 3,461' - 3,483' (3 Holes) - 11/10/1977
Perf 3,460' - 3,480' @ 6 SPF (180 Holes) - 9/23/1993
Perf 3,469' - 3,472' (4 Holes) - 11/10/1977

Perf 3,499' - 3,506' (7 Holes) - 11/10/1977

Perf 3,520' - 3,522' (3 Holes) - 11/10/1977

Perf 3,528' - 3,530' (5 Holes) - 11/10/1977

Perf 3,572' - 3,576' (5 Holes) - 11/10/1977

Queen @ 3,603'

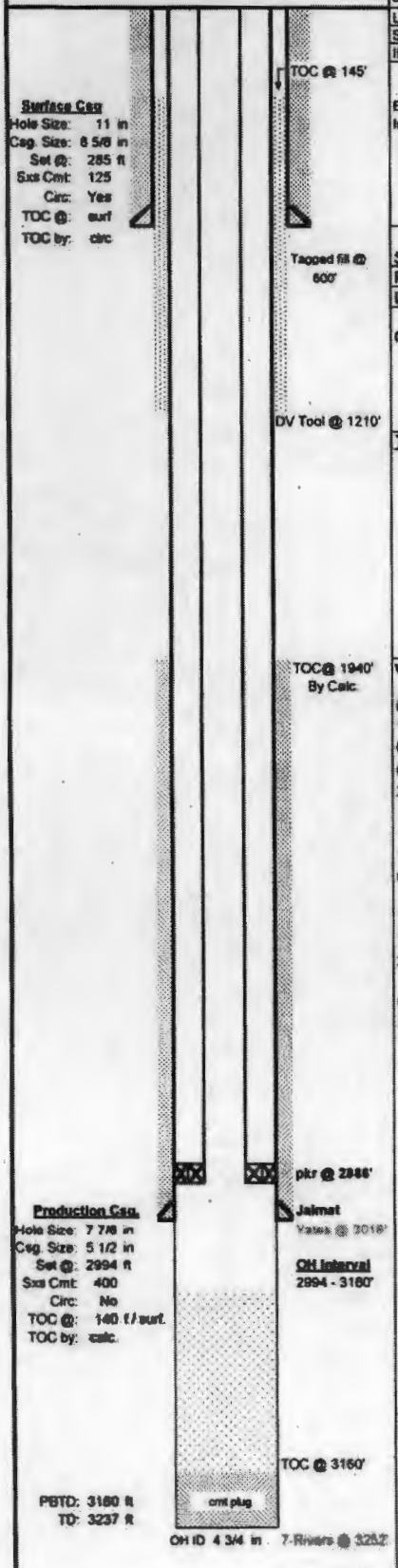
Perf 3,604' - 3,606' (5 Holes) - 11/10/1977

Hole Size: 7 7/8"
Prod. Csg: 5 1/2", 15.5#, J-55
Set @ 3,656'
Cement Lead: 315 sx Class C + 3% Econolite
Tail: 210 sx C:Poz(50:50)+2% Gel+9# Salt+1/4# Flocele
DV Tool: 215 sx Class C + 3% Econolite

PBTD 3682'
TD 3682'

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME	Cooper Jal Unit			WELL NO.	201
STATUS:	Active	Water Injector		API#	30-025-09628
LOCATION:	660 FNL & 330 FEL, Sec 24, T - 24S, R - 36E, Lee County, New Mexico				
SPUD DATE:		TD 3237	KB 3,316'	DF	
INT. COMP. DATE:	05/02/50	PBTD 3160	GL 3,308'		

GEOLOGICAL DATA

ELECTRIC LOGS:
Ejecto Log Tracer (3-17-78 Cardinal Surveys Co.)
Injection Profile (9-14-81 Technical Surveys Company)

CORES, DST'S, or MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3016' 7-Rivers @ 3252' Queen @ 3600'

CASING PROFILE

SURF.	8 5/8" - 28#, J-55 set@ 285' Cmt'd w/125 sxs - circ cmt to surf.
PROD.	5 1/2" - 14#, J-55 set @ 2994' Cmt'd w/200 sxs - TOC @ 1940' f/ surf by calc. DV tool @ 1210' - pmp 200 sxs -
LINER	None 5 1/2" - TOC@ 140' f/ surf by calc.

CURRENT PERFORATION DATA

CSG. PERFS:

OPEN HOLE :
2994 - 3160'

TUBING DETAIL 5/20/2009

Length (ft)	Detail
0	KB
890	29 jts - 2 3/8" 4.7#, IPC Super Max TBG
1993	65 jts - 2 3/8" 4.7#, IPC, J-55, 8rd EUE tbg - turn down collars.
3	1- 5 1/2" x 2 3/8" Baker Model "A-1" packer
2886	btm

ROD DETAIL

WELL HISTORY SUMMARY

02-May-50	Initial OH completion 2994 - 3237' (Yates OH). No stimulation. IP=67 bopd, 0 bwpd, & 76 Mcfgpd (flowing)
18-Mar-58	C/O fill from 3070 - 3237' (167')
01-Apr-62	Cumulative production: 155,008 Bo & 772,569 Mcfg
03-Oct-62	Frac'd OH w/30,000 gals lse oil carrying 75,000#'s sand and 1,000#'s moth balls. PB open hole w/cmt to 3157'.
21-Sep-71	CONVERTED TO INJECTOR: Had to kill well - flowing oil. C/O fill to 3157'. Ran pkr on 2 3/8" CL tbg. Set pkr @ 2929'. Placed well on injection.
17-Mar-78	Tagged fill @ 3153' (4'). Not C/O.
14-Sep-81	Ran injection survey. Tagged fill @ 3147' (10'). Not C/O.
05-May-88	C/O fill from 3098 - 3153' (55'). Side jet wash OH. Drilled out cmt plug in OH w/ 4 3/4" bit to 3160'. Installed new cmt lined tubing. Initiated injection @ 1,000 bwpd, TP=20 psi.
18-Jul-90	Made tag run - No fill. Tst csg to 300 psi. Good tst. Returned well to injection.
14-Feb-02	Tag TD using SL unit (1 1/4" x 5' sinker bar). Tag inside tbg @ 1706' (1531' above TD).
29-Sep-05	POOH w/ 91 - 2 3/8" cement lined tbg & 5 1/2" x 2 3/8" Baker AD-1 Tension packer. Redressed packer & hydrotest tubing in hole. Repalced 3 bad joints. Pressure test annulus to 400 for 30 minutes. Pulled pressure chart for OCD.
08-Nov-05	RIH with 1 1/4" x 5' sinker bar and tagged at 600'.
20-May-09	POOH laying 91 jts 2 3/8" CL tbg. Found hole on 74th jt. Hydrotest tbg to 5000#. Ran 5 1/2" AD-1 PKR on 94 jts. 2 3/8" IPC tubing. Pulled H-5 chart for OCD. Did not tag or clean out. **Before Rate/Press: 580 bwpd @ 683#. After Rate/Press: 1000 bwpd @ 610#.**

PREPARED BY:	Larry S. Adams	Domingo Carrizales	UPDATED:	26-May-09

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC

LEASE NAME	Cooper Jal Unit				WELL NO	202
STATUS	Active	Oil			API#	30-025-11148
LOCATION:	990 FNL & 330 FWL, Sec 19, T - 24S, R - 37E, Lea County, New Mexico					
SPUD DATE:		TD	3780	KB	3,302'	DF
INT. COMP. DATE:	05/26/50	PBTD	3780	GL	3,302'	

WIRELINE LOGS: GR-N from 2650 - 3222' (5-26-50 Lane Wells)
Trac III (4-12-78 Cardinal Surveys Co.)

CORE & DST'S w/ MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3010' 7-Rivers - 3,235' Queen - 3,660'

CASING PROFILE

SURF: 10 3/4" - 32#, J-55 set@ 268'. Cmt'd w/75 sxs - circ cmt to surf.
PROD: 7" - 20# J-55 set @ 2972'. Cmt'd w/200 sxs - TOC @ 1855' Calc 75%,. DV tool @ 1300' - prss 100 sxs - TOC @ 621'
LINER: None

CURRENT PERFORATION DATA

CSG. PERFS:

OPEN HOLE :
2972 - 3780'

TUBING DETAIL			3/27/2012	ROD DETAIL			3/27/2012
Length (ft)			Detail	Length (ft)			Detail
2790	90		2 7/8" 6.5#, J-55. Mac tbg	22	1		1 1/4" x 26' polish rod w/ 7/8" pin
8	1		2 7/8" 6.5#, J-55. Mac tbg	8	1		1 1/4" x 1 1/2" x 14' Liner
34	1		3 1/2" Stator	14	2		6' & 8' - 1" Pony rods
31	1		3 1/2" x Blast Joint	2778	111		7/8" New KD steel rods
3	3		3 1/2" x 7" TAC	4	1		2 1/2" x 4' 4B Ring PAP Plunger
2868			btm	2876			(Right Release)

WELL HISTORY SUMMARY

28-May-50 Initial completion OH Yates from 2972 - 3224'. No stimulation. IP=72 bopd & 0 bwpd (flowing)
27-Jul-70 TA'd
19-Nov-74 Producing 28 bopd & 55 bwpd
10-Apr-75 Producing 23 bopd & 70 bwpd
09-May-75 C/O fill from 3125 - 3224' (99')
16-Jul-75 Producing 65 bopd & 134 bwpd
09-Jun-77 Producing 131 bopd & 184 bwpd
18-May-88 C/O fill f/3175'-3224' (73'). Jet wash OH. Acdz'd OH w/3,000 gals 15% NEFE HCL in 3 stages using 500# & 700# RS blocks between stages. AIR=3.2 bpm @ 225 psi. ISIP=vacuum. PWOP. **Before WO: 9 bopd, 231 bwpd & GOR=888 After WO: 17.6 bopd, 257 bwpd & 14 Mcfgpd. GOR=792**
17-Dec-97 Repaired rod part & replaced 118 - 7/8" rod boxes. Replaced 84 jts tbg. Returned well to production.
28-Dec-01 Repaired rod part. Returned well to production.
02-Jan-02 Repair rod part & test tbg. Returned well to production.
16-Apr-02 Change out polish rod liner.
28-Jan-05 POOH w/rods & pump; laid 68 - 7/8" rods due to wear & pitting. RIH w/6 1/4" bit & 12 4 1/4" DCs, tagged @ 3075'. C/O to 3224'. D/O f/3224' to TD @ 3780' in 15 days using button & mill tooth bits. Ran CNL f/3786' to 2750'. Tagged tight spot in Csg w/ 7" Plr at 1855'. Tagged @ 2977' w/ Rio Coil Tubing. Pumped 30 bbls 15% acid & 30 bbls surfactant H2O @ 4 BPM. Pumped w/30 bbls acid. Pumped w/110,000# 12/40 mesh sand in 4 equal stages diverting w/ RS. C/O frac sand w/ 6 1/8" bit f/ 2986' to 3143'. C/O w/ Foam Air Unit to 3780'. Work string got stuck at 3300'. Backed off at 3300'. Backed off at 3050' & recovered 97 jts. Fished & recovered 9 - 2 7/8" jts & BHA in 4 days. Ran production string to 3073'. PWOP.
19-Apr-05 POOH w/ rods, pump & tubing. RIH w/ bull dog bailer, tagged at 3065'. Bailed frac sand to 3189'. RIH w/ 6 1/8" bit & DCs. Pumped 320 bbls 2% KCl , did not catch press. Tagged at 3284'. Replaced tubing string due to bad threads. PWOP.
7-May-05 POOH w/ rods, pump and tubing. RIH w/ notch collar to 2230'. While circulating, fluid and air came of the ground next to well head Found hole between 625'-654'. Ran cement bond log f/ 2929' to 400'. RIH w/ tubing, pump and rods. PWOP.
7-Sep-05 POOH w/ rods, pump & tubing. RIH w/ notched collar, tagged at 3190'. Could not circulate. RU Foam Unit. Cleaned out f/ 3190' to 3,780'. Had 140' of fill over night. Cleaned out to 3780'. **Tagged at 3779'.** RIH with production strings. PWOP.
06-Feb-06 POOH w/ rods & plunger. RIH w/ plunger & rods, stuck plunger in working barrel. Pulled free. POOH with rods & plunger. **Tagged bottom at 3718'.** POOH with tubing, found sand in working barrel. RIH with WB on tubing. RIH w/ plunger & rods. Loaded tubing and test to 500#. PWOP.
28-Apr-06 POOH with rods, plunger and tubing - did not tagged fill. POOH with tubing. Cross over collar was bad on working barrel. RIH with new working barrel on tubing. RIH with new plunger. Load & test to 500# PWOP.
10-Oct-06 POOH with rods, plunger and tubing - did not tagged fill. Replaced working barrel. RIH with 2 1/4" plunger and rods. PWOP.
23-Jul-07 POOH w/ rods, plunger & tubing. RIH w/ tubing, plunger & rods. Change out standing valve. Plunger & Working Barrel. PWOP.
30-Jul-07 POOH with rods, plunger and tubing. Laid down 2 jts tubing. RIH with standing valve, plunger and rods. PWOP.
17-Sep-07 POOH with rods , plunger and standing valve. Hydrotest tubing 7000#. Found hole on 10 jts above pump. PWOP.
06-Sep-08 POOH with rods and plunger. RIH with plunger & rods. PWOP.
14-May-09 POOH w/ rods, Plunger & tubing, found split on 65th jt. RIH with Pressure Tool.**Ran Tag Bar - tagged 3,660'. Pressure @ 3,660' = 148 psig.** Hydrotest tbg to 7000# - good. RIH w/ Plunger & rods. Bad Saddle bearing.
09-Feb-10 POOH with plunger, standing valve and tubing. Ran Pressure Gradient Tool, took readings every 500' to 3665'. Hydrotest tubing to 7000# - found split on 108th jt & busted 108th jt. RIH with plunger and rods. PWOP.
13-Jul-10 Worked stuck Plunger free. POOH w/ rods, plunger, tubing and WB. Hydrotest tubing to 7000# - okay. RIH w/ rod & plunger. PWOP.
19-Oct-10 Fished Polish Rod. PWOP.
31-Jan-11 POOH with parted 32nd (box - severe wear). POOH with tubing & plunger. RIH plunger and tubing. Changed out 7/8" boxes. PWOP.
24-Sep-11 POOH with parted plunger, rods and tubing. Hydrotest to 7,000#. Changed out 38 - 7/8" rod boxes. RIH with plunger & rods. PWOP.
22-Feb-12 POOH with rods, pump and tubing. Hydrotest 3 1/2" tubing with Stator to 7,000# psig - good. RIH with rotor and rods. PWOP.
26-Mar-12 POOH with rods, pump and tubing. RIH with rotor and rods. PWOP.

PREPARED BY: Larry S. Adams — Domingo Carrasco — UPDATED: 12-Apr-12

Field: **Cooper Jal Unit**

	Location:
Footage:	1980 FNL & 1650 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,308'
KB:	3,319'
KB Calc:	11'
ck w/tog?	Yes

Date	History
30-Apr-50	Drill to 3,251' & OH complete - no stimulation.
6-Dec-54	CO 197' fill. Frac well w/ 12,000 gal Dowell Sandfrac & 16,000# sand.
1-Apr-62	Place well on rod pump.
21-Sep-71	CO sand to 3251' & Convert well to injector.
16-Mar-78	Ran injection profile. Tag fill at 3177' - did not CO.
7-Oct-84	Tag fill at 3063' - did not CO.
15-Oct-86	CO f/ 3036' to 3251' & acidize w/ 4000 gal 15% & 1000# RS in 2 stages.
11-Jan-94	CO f/ 3056' to 3251' & deepen with 4-3/4" bit to 3600'. Acidize w/ 8400 gal
	20% NEFE & 5000# RS in 5 stages. RWTI.
14-Feb-02	Tag fill at 3040' w/ SL.
8-Nov-05	Tag fill at 3078' w/ SL.
31-Jan-11	CO well to 3600' & acidize w/ 20,000 gal 90/10 15% & 35,000# RS.

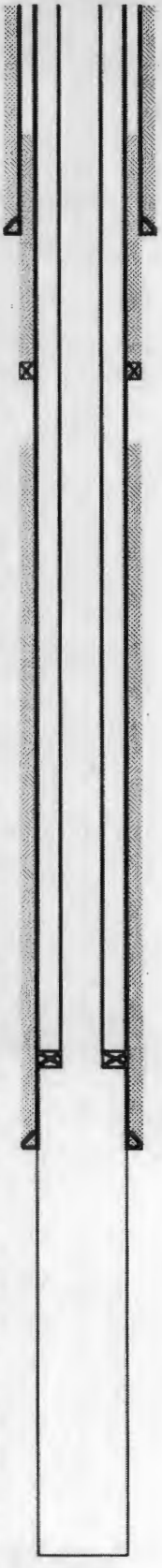
Joints	Tubing Detail (top to bottom) Description	Footage	Depth
	KB	11	11
91	2 3/8" 4.7#, IPC, J-55, 8rd EUE tbg	2,936	2,947
	5 1/2" x 2 3/8" Arrowset packer	3	2,950

Rods	Rod Detail (top to bottom) Description	Footage	Depth

Pumping Unit:
Updated: 01/10/14 MCB

CJU #205 WIW

Wellbore Diagram



Reservoir:	Cooper Jal
Well ID Info:	CJU #205 WIW
API No:	30-025-08920
Spud Date:	4/9/1950

Hole Size: 12-1/4"
Surf. Csg: 8 5/8" - 28#
Set @ 300'
Cement w/ 125 sx
Circ: Yes
TOC: Surface

TOC: 125' (Calc)

DV Tool at 1196' (Cement w/ 200 sx)

TOC: 1936' (Calc)

Plr at 2950' KB

Hole Size: 7 7/8"
Prod. Csg: 5 1/2" - 14#
Set @ 3600'
Cement: 300 sxs
DV Tool: 200 sxs

Yates @ 3024'

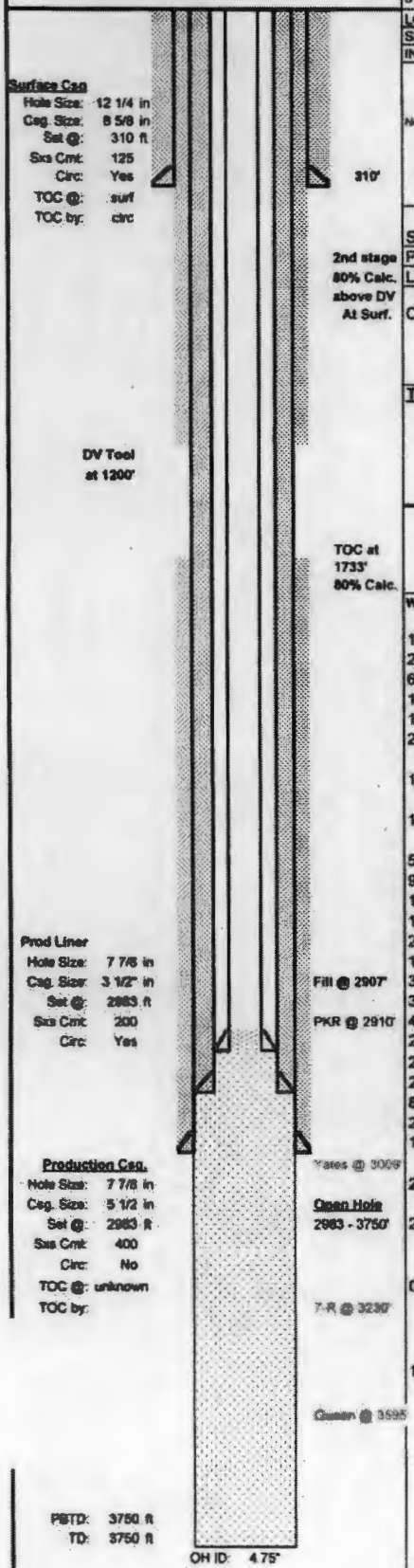
7-R @ 3249'

Queen @ 3610'

PBTD 3600'
TD 3600'

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME	Cooper Jal Unit					WELL NO	206
STATUS	Active		Injector			API#	30-025-09621
LOCATION:	1980 FNL & 330 FEL, Sec 24, T - 24S, R - 36E; Lea County, New Mexico						
SPUD DATE:		TD	3750	KB	3,310'	DF	3,310'
INT. COMP. DATE:	05/04/50	PBTD	3750	GL			

GEOLOGICAL DATA

ELECTRIC LOGS:

None Listed

CORES, DST'S or MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3009' 7-Rivers @ 3230' Queen @ 3595'

CASING PROFILE

SURF.	8 5/8" - 28#, J-55 set@ 310' Cmt'd w/125 sxs - circ cmt to surf.
PROD.	5 1/2" - 14#, J-55 set@ 2983' Cmt'd w/200 sxs - TOC @ 1733' 80% Calc. DV tool @1200' - pmp 200 sxs -
LINER	3 1/2" - 9.2 #/ft set @ 2932' Cmt'd w/ 200 sxs Class C - Cmt Circ'd 5 1/2" - TOC @ surf, 80% calc.

CURRENT PERFORATION DATA

CSG. PERFS:

OPEN HOLE :
2983 - 3750'

TUBING DETAIL 6/1/2011

ROD DETAIL

8	3	2', 2', 4' - 2 3/8" IPC TBG SUB
2900	91	2 3/8" IPC TBG
3	1	2 3/8" X 5 1/2" Arrowset 1
2911		

WELL HISTORY SUMMARY

19-May-46	Initial completion interval: (Yates/OH) 2983 - 3230': No stimulation. IP = 54 bopd (flowing)
20-Apr-61	Put on pump.
6-Mar-61	Producing 10 bopd & GOR=5860
1-Mar-62	Monthly Production: 141 bopm & 1,179 Mcfgpm
1-Apr-62	Cumulative Production: 111, 295 bbls oil & 589,535 Mcfg.
25-Jan-63	Frac'd OH (2983 - 3230') w/40,000 gals Isae oil & 100,000#'s 20/40 sand & 1,000#'s moth balls. Could not C/O after frac below 3070', so put on pump.
11-May-63	Never recovered load oil from previous frac due to unsuccessful pumping. Attempted to air-mist drill & run 4" FJ liner. Could not drlg below 3096' so set 4" liner from 2838 - 3096'.
19-Feb-73	Tag fill at 3066 inside 4" liner. Circ clean to 3116 & fished all of 4" liner (256') out of hole. Reverse circ sand clean to 3235' & jet washed OH.
5-Jul-73	Producing 11 bopd & 1 bwpd
9-Jun-74	Producing 36 bopd & 10 bwpd
12-Jul-74	C/O fill from 3100 - 3230' (130')
10-Sep-74	Producing 70 bopd & 13 bwpd
2-Apr-75	Producing 100 bopd & 6 bwpd
12-May-75	C/O fill from 3123 - 3230' (70')
3-Aug-75	Pumping 24 hrs, 129 oil & 0 wtr.
3-Sep-76	Producing 56 bopd & 109 bwpd
4-Aug-77	Producing 62 bopd & 119 bwpd
2-Oct-78	Producing 58 bopd & 143 bwpd
20-Dec-93	Replaced 1 jt 2 3/8" tbg & installed new rod pmp
24-Jun-94	Replaced 18 - 3/4" rod boxes
8-Feb-95	Repair rod part. Replaced 30 - 3/4" rod boxes. Change out pmp.
25-Jan-97	C/O fill from 3103 - 3230' (127'). Re-ran prod equip replaced 46- 3/4" rods & couplings.
15-Dec-97	C/O fill rom 3110 - 3230' (120'). Washed 4 3/4" OH from 2983 - 3230'. Acdz'd thru Sonic Hammer entire OH w/ 3,000 gals 15% NEFE HCL.AIR=4.3 bpm, PM=1700 - 1374'. ISIP=Vacuum
25-Jun-99	POOH w/ prod equipment. **Set CIBP @ 2820'** on tbg. Loaded well with pkr fluid. Dmp 35' cmt on top of CIBP. TOC and 2,785'. Test csg to 500 psi. Good tst. **Well TA'd 6 - 26- 99.**
24-Feb-11	RIH w/ 4 3/4" bit, tagged at 2,795'. Drilled cement plug and CIBP, cleaned out to 3,230'. Hydrotest tubing & setPKR @ 2,925'. RIH w/PKR on work string & set @ 2,925'. Test casing to 500# - Held. Acidized w/ 12,000 gals diverting w/ 15,000# rock salt. AIR= 6 BPMPavg= 750# ISIP= 0#. RIH with injection string (2 3/8" IPC TBG). Pull Press Chart for OCD.
02-May-11	POOH w/ injection string. RIH w/ 4 3/4" bit. **Deepen well to 3,750' in 11 days.** Acidized open hole w/ 20,000 gals 15%, 90%/10%, acid/xylene at 6.6 bpm, Diverted w/ 15,000#'s RS. Pavg=1150#, ISIP= 400 psig. MIT failed. Isolate casing @ 325 to 355'. RIH with 95 jts, 3 1/2" 9.2 #/ft, **supermax lnr, set at 2,932'.** Cemented with 200 sxs Class C cement. RIH with bit, **drilled float collar & float shoe & composite plug. Cleaned out to 3,760'.** RIH w/ injection string. Pulled MIT for OCD.
14-Jun-12	**Tagged fill @ 2907' with 1 3/8" sinker rod tool.**

PREPARED BY:	Larry S. Adams	Domingo Carrizales	UPDATED:	14-Jun-12

Field: Cooper Jal Unit

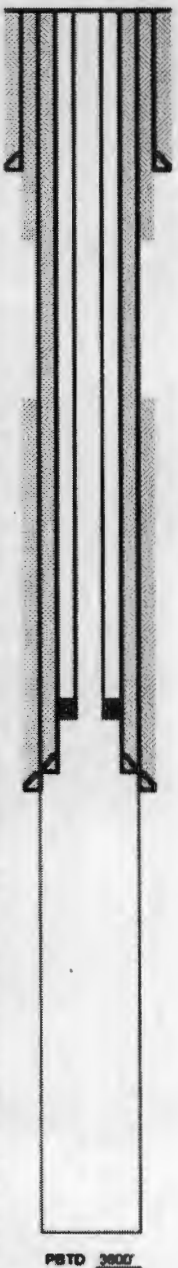
	Location:
Footage:	2310 FSL & 2310 FWL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,312'
KB:	3,325'
KB Calc:	13'
ck w/log?	Yes

Date	History
4-Apr-50	Initial completion 3001 - 3244' (Yates OH). No stimulation. IP=56 bopd, 0 bwpd, & 53 Mcfgpd. (flowing)
9-Sep-54	Frac OH w/2,000 gals lse oil carrying 3,000#'s sand. Re-frac OH w/14,000 gals lse oil carrying 18,000#'s sand.
14-Jul-57	C/O to 3244' & place on pmp.
22-Feb-59	C/O to 3244'. (No report on location of fill)
17-Nov-70	CONVERTED TO INJECTOR. C/O fill to 3244'.
7-Jul-89	C/O fill from 3030 - 3244' (214'). Acdz'd OH w/4,000 gals 15% NEFE HCL in 4 equal stages diverting w/500# rock salt blocks. Ran PKR on 2 3/8" CL tbg. Placed well on injection @ 445 bwpd, TP=875 psi.
11-Jan-94	RIH 4 3/4" bit, 12 - 3 1/2" OD DCs. Tagged @ 3235', getting returns out of bradenhead. Found holes in 5 1/2" csg, At 320' to 350'. Sqzd w/ 150 sacks class "c" w/2%. Circ'd w/ 22 sxs cmt. Drilled & test sqzd to 500#-held. Tagged junk at 3255'. Drilled junk & deepened well to new TD of 3600'. Ran GR-MSFL-DLL, GR-DSN-SDL, & GR-Borehole Compensated Sonic Logs. Acdz'd OH w/ 8,400 gals 20% NEFE HCL. Well DHC injection (Jal & L M). Begin injection @ 339 bwpd @ 450 psig.
4-May-95	Ran injection profile. Results: 73% fluid - 3080 -70', 11% fluid - 3300-11', & 16% fluid - 3528-43'.
6-Mar-97	Tagged fill @ 3538' (62'). Dumped sand in OH & PB fr 3538 - 3420'. Dmp cmt fr 3420-3400'. Acdz'd OH (3001'-3400') w/4,000 gals 15% using N2 foam as diverter using coiled tubing. AIR (fluid)=1.2 bpm. Ran PKR on 2 3/8" CL tbg. Set PKR @ 2952'. Test casing - good test. Initiated injection @ 486 bwpd, TP=250 psi.
14-Feb-02	Tag TD using SL unit (1 1/4" x 5' sinker bar). Tag fill @ 3048' (352' of fill)
23-May-02	Wash w/surfactant H2O. 3 passes & wash w/acid. Pump w/1240 gals. Pmp flush w/ acid. Flow Bk. Put on Inj @ 200 BWPD.
1-Oct-03	Administrave Order No. WFX-648. Approved Division Order No.R-4019 & R-4020 for Waterflood Expansion.
17-Nov-03	POOH w/ 2 3/8" IPC tbg & AD-1 pkr. RIH w/ 4 3/4" bit, 6 3 1/2" DCs & tagged @ 3148'. C/O to 3400'. Located 5 1/2" csg lk between 325' to 356'. Sqz'd w/200 sx Class C Neat w/2% CaCl. Hesitation sqz - final press was 330 psig, dropped 200# in 5 minutes. Drilled cmt fr 230' to 300'. Test sqz to 500 psig - bled to 300# in 5 minute. Recovered RBP. RIH w/ 5 1/2" Baker AD-1 Tension packer and set 2901'. Pressure annulus to 500 psig. Pull pressure chart for OCD filing.
28-Jan-04	POOH w/ 2 3/8" IPC tbg & lay down AD-1 pkr. RIH w/ 4.45" Junk Basket & CCL on W/L. Found end of csg @ 3001'. RIH w/Composite Bridge Plug & set @ 2980'. RIH w/72'-4" Lnr. Cmt w/ 200 sx Class C Neat cmt, circ'd w/ 34 bbls cmt. Test 5 1/2" csg to 500# - did not hold. D/O wiper plug, float shoe, & tagged Composite Bridge Plug @ 2970'. Test 4" lnr to 500# - held. Composite Bridge Plug & tagged @ 3400'. Circ'd clean & laid down work string & BHA. RIH w/ 4" Baker Model AD-1 PKR. Hydrotest tbg to 5000#. Locate PKR @ 2952', circ annulus w/ 50 bbls of inhibited 2% KCl wtr. Set PKR & test annulus to 500# - held. PBTD @ 3400'. Pulled chart for OCD.Prior rate & press: S/I. After rate & press: 230 BWPD @ 420 psig.
25-Mar-04	Pumped 30 bbls surfactant water. Acidized with 1000 gals 15% NEFE acid @ 2.5 BPM. Flushed with 12.5 bbls water. Prior rate & pressure: 288 BWPD @ 700 psig. After rate & pressure: 255 @ 500 psig.
4-Dec-04	Before Rate & Press. 279 bwpd at 820 psig. RIH w/1 1/4" Perf-Clean Tool on 1 1/4" CT. Washed OH (2975'-3400') w/ surfactant 2% KCl fresh water. Made 3 passes. TP= 3500#, Annulus Press= 100#. Acidized O H (2975'-3400') w/ 4,200 gals 15% NEFE HCl. Made 3 passes. TP= 3700psig, Annulus Press= 980#, ISIP= 770#. After Rate & Press: 208 bwpd @ 500 psig.
8-Nov-05	RIH with 1 1/4" x 5' sinker bar and tagged at 3,092'.
18-Apr-08	POOH w/sq Sinng & AD-1 PKR. RIH w/3 1/4" on 2 3/8" tbg, tagged fill @ 3107'. Bit kept plugging up. RIH w/Notch Collar. C/O fr 3107' to 3251', circ'd form. & oil. Next day tagged at 3251'. C/O to 3400'. RIH w/ 4" AD-1 PKR on 2-3/8" CL tbg. Discovered cracks in cement line through out tubing string. Laid down 91 joints CL tubing. RIH w/ AD-1 PKR on new 2 3/8" IPC tubing. Set PKR at 2,823', pressure annulus to 420 psig for 30 minutes. Pulled chart for OCD.
21-May-08	Acidized Jalmat w/ 71 bbls 15% NEFE HCl acid 3000# rock salt & d 29 Tons of CO2. Rate = 7.9 bpm @ 2627 psi. ISIP = 751 psig. Before Rate & Press: 253 bwpd at 733 psig. After Rate & Press: 341 bpd @ 660 psi.
20-Jan-09	POOH w/ injection string & AD-1 PKR. RIH with 3 1/4" on 2 3/8" tbg, tagged bridge @ 3089'. Cleaned out fr 3372' to 3,582'. Recovered 80% sand & 20% formation. Cleaned from 3450' to 3600'. Hydrotest tubing - no holes. Test annulus to 580#.
27-Apr-09	RU Gray Wireline. Tagged @ 3,058' with 1" sinker bar. RD wireline. Placed well on injection. Rate/Press: 539 bwpd/750#.
18-Mar-11	Nipple up BOP, pulled out w/ tbg, ran in w/1.992 spear, tagged @ 3110', laid down 4" pkr, ran in w/3-1/4" bit, 6 2-3/8" drill collars on 2 3/8" work string, tagged bridge @ 3110' and 3365', circulated down to TD @3600', circulated well clean. Set PKR at 2911'. RU Rising Star acidized open hole 3001-3600' w/20,000 gals 15% acid 90/10, 14,000 lbs salt. Laid down 2-3/8" work string, ran in w/2-3/8" IPC tbg, nipple down BOP. Circulated w/45 BBLS packer fluid, pressure test to 400 PSI on chart record test good.

Joints	Tubing Detail (top to bottom) Description	Footage	Depth
1	2-3/8" 4.7#, IPC, J-55, Tbg sub	6	6

CJU #211

Wellbore Diagram



PBTD 3600'
TD 3600'

Reservoir:	Cooper Jal
Well ID info:	CJU #211
API No:	30-025-08787
Init. Comp. Date:	4/4/1950

Hole Size:	11"
Surface Csg:	8-5/8", 29.75#, J-55
Set @	302'
Cement w/	125 sx
Circ:	Yes
TOC:	Surface

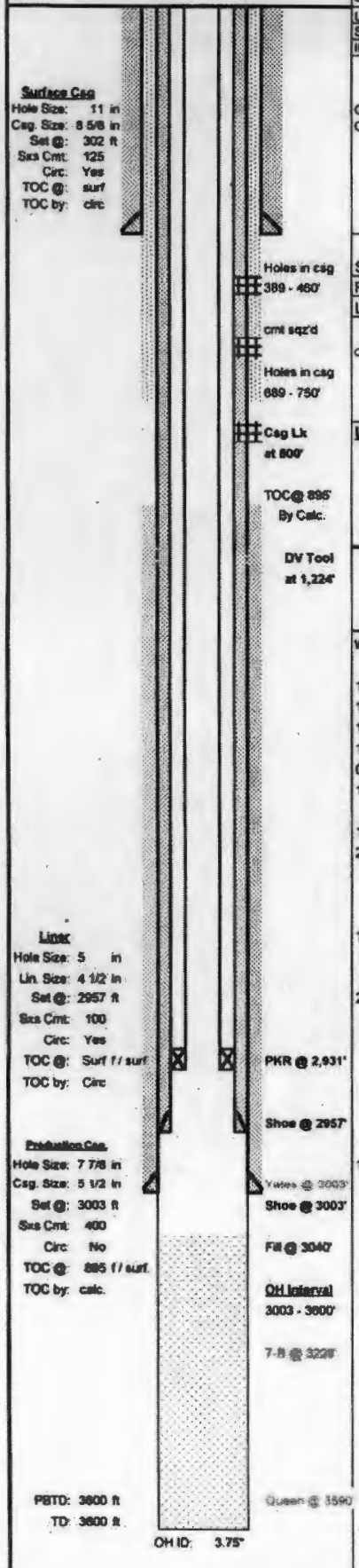
Hole Size:	7-7/8"
Prod. Csg:	5-1/2", 14#, J-55
Set at:	3001'
Cement:	400 sx
Circ:	No
TOC:	895' from surface by calc.

Hole Size:	7-7/8"
Liner:	4", 10.46#, Hydrill F.J.
Set at:	2970'
Cement:	200 sx Class C
Circ:	Yes
TOC:	Surface

pkr @ 2911'

OH Interval: 3001'-3400'
OH ID: 4-3/4"
Yates @ 3018'

WELLBORE SCHEMATIC AND HISTORY



CURRENT COMPLETION SCHEMATIC

LEASE NAME	Cooper Jal Unit				WELL NO	213 WIW
STATUS	Water Injector				API#	30-025-09623
LOCATION:	1980 FSL & 660 FEL, Sec 24, T - 24S, R - 36E, Lea County, New Mexico					
SPUD DATE:		TD	3600	KB 3,311'	DF	
INT. COMP. DATE:	03/16/50	PBTD	3600	GL 3,306'		

GEOLOGICAL DATA

ELECTRIC LOGS: GR-N (3-13-50 Lane Wells); Casing Inspection Log (10-7-94 Halliburton)

CORES, DST'S, or MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3003' 7-Rivers @ 3228' Queen @ 3590'

CASING PROFILE

SURF.	8 5/8" - 29.75#, J-55 set@ 302' Cmt'd w/125 sxs - circ cmt to surface.
PROD.	5 1/2" - 14#, J-55 set@ 3003' Cmt'd w/400 sxs - TOC @ 895' from surface by calculation.
LINER	4 1/2" - 14# J-55 set at 2,957'. Cmt'd with 100 sx - TOC at Surf by circulation

CURRENT PERFORATION DATA

CSG PERFS:

OPEN HOLE: 3003 - 3600'

Liner DETAIL

2922	67	4 1/2" 11.6# SJ Thread
2	1	4 1/2" Float Collar
31	1	4 1/2" 11.6# SJ Thread
2	1	4 1/2" Float Shoe
2957		

Tubing DETAIL 2/10/2012

6	1	2 3/8" J-55 4.7# EUE 8rd IPC Sub
2930	92	2 3/8" J-55 4.7# EUE 8rd IPC Tubing
3	1	4 1/2" x 2 3/8" Arrow Set Nickle Platted
2939		w/ On-Off Tool & w/ 1.78 F Profile

WELL HISTORY SUMMARY

16-Mar-50	Initial completion 3003 - 3220' (Yates OH): No stimulation. IP=66 bopd, 0 bwpd, & 76 Mcfgpd. (flowing)
11-Nov-54	C/O fill to 3220'
14-Aug-56	C/O fill to 3220'
17-Jul-66	C/O fill to 3220'
07-May-71	CONVERTED TO INJECTOR: C/O various bridges from 3098 - 3220'
17-Jul-87	C/O various bridges f/ 3098 - 3195' & fill (FeSO4, CACO3 & Formation) f/ 3205 - 3220'. Returned to injection at 880 bwpd with TP=800 psi.
14-Jan-89	Replaced tubing with new cement lined tubing string. Returned to injection.
26-Sep-94	Isolated 5 1/2" csg leak f/389'-421'. Cmt sqz'd csg leak w/ 150 sxs circulating cmt out 5 1/2" x 8 5/8" annulus. D/O & casing. Bad tst. Spot 50 sxs cmt across 389'-421' & sqz to 800 psi. WOC. D/O & tst csg. Bad tst. Ran Casing inspection log which showed holes in casing f/ 400 - 446', 492 - 498', & possible csg part 1225'-1230'. Attempt to cmt SQZ'd casing w/ 60 sxs cmt. D/O & tst csg. Bad test. Set CIBP @ 2,960' on WL. Dumped 50' cmt on top of CIBP. WOC. Tag TOC @ 2912'. TA'd well.
18-Apr-95	Circ well w/ gelled brine. Spot 25 sxs cmt from 2400 - 2200'. WOC. Tagged TOC @ 2160'. Spot 35 sxs cmt from 1350'-1013'. Spot 90 sxs cmt from 800' to surface. Cut off wellhead & cap casing. Installed Dry hole marker & cleaned location. NMOCD notified - well P&A'd 4-20-1995.
29-Dec-11	Drilled surface cement plug with 4 3/4" bit to 800 feet in 12 days. Press test Csg - failed. Drilled 2nd plug from 1,027' to 1,365' in 2 days. Drilled 3rd plug from 2,205' to 2,450'. Drilled 4th plug from 2,924' to top CIBP @ 2,960'. Drilled on CIBP and pushed to 3242'. Drilled CIBP and 5' of new formation. Drilled formation w/ 4 3/4" button bit from 3,247' to 3,433 in 5 days. Drilled w/ new 4 3/4" Milled Tooth bit f/ 3,435' to new TD 3,600' in 6 days. Logged well w/ GR-CCL & Csg Inspection Log. Set Composite Plug @ 2,958'. Test plug to 800 psig - good. RIH with 4 1/2" Liner to 2,957'. Pumped 50 sx - stop to mixer. Waited on cement. Pumped 100 sx Class C. Circulated 29 sxs, 7 bbls cmt to reverse pit. RIH with 3 7/8" bit. Drilled Float Collar, float shoe and Comp. Plug - tagged at 3,600'. RIH with 4 1/2" Arrow Set on 2 3/8" IPC at 2,931'. Performed MIT to 500# - okay. Acidized open hole with 18,000 gals 15% Star Acid (90% acid, 10% xylene). AIR= 5.8 bpm. ISIP= 1020#. Pmax= 2,921#.
14-Jun-12	Tagged fill @ 3040' with 1 3/8" sinker bar rod tool.

PREPARED BY:	Larry S. Adams	Domingo Carrizales	UPDATED: 22-Jun-12

Field: **Cooper Jal Unit**

	Location:
Footage:	330 FSL & 1650 FEL
Section:	13, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,315'
KB:	3,325'
KB Calc	10'
ck w/log?	n/a

Date	History
5-Jun-50	Initial completion interval: (Yates/7 RVRS, OH) 2,985 - 3,226': No stimulation. IP = 48 bopd, 0 bwopd, & 54 Mcfgpd (flowing)
1-Jun-65	TA'd well.
1-Aug-71	Convert to injector. C/O to 3150' (hole continued to cave in and bridge)
1-Sep-81	Ran injection profile. Fill tagged at 3101'. Did not C/O fill.
4-Feb-02	RIH with 1 1/4" x 5' sinker bar and tagged at 2,980'
2-May-02	RIH w/ CT & tag at 2985'. CO to 2989' - could not CO deeper.
9-Nov-05	RIH with 1 1/4" x 5' sinker bar and tagged at 2,973'
25-Jan-11	CO to TD w/ 4-3/4" bit - recovered oil & paraffin. Acidize w/ 10,000 gal 15% 90/10 acid & 17,500# RS. RWTI
14-Mar-12	Repair HIT / pkr leak.
15-Nov-13	Found Hole in csg at 414' - 429'. Perf 4 holes at 440' & cmt sqz to 500#. Tag cmt at 20' & DO. Broke out of cmt at 448'. Test to 500 psi and broke back with fluid coming around wellhead.

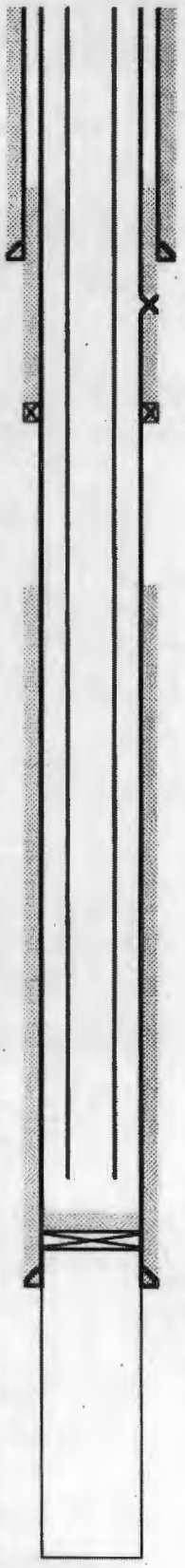
Joints	Tubing Detail (top to bottom) Description	Footage	Depth
92	2-3/8" 4.7#, IPC, J-55, 8rd EUE	2,890	2,890

Rods	Rod Detail (top to bottom) Description	Footage	Depth

Pumping Unit:
Updated: 12/9/13 MCB

CJU #234

Wellbore Diagram



PBTD 3226'
TD 3226'

Reservoir: Cooper Jal

Well ID Info:	CJU #234
API No:	30-025-09561
Spud Date:	6/6/1950

Hole Size: 11"
Surf. Csg: 8 5/8" - 28#, J-55
Set @ 304'
Cement w/ 125 sxs
Circ: Yes
TOC: Surface

TOC: 85' (Calc)

Found Hole in Csg @ 414' - 429' - 11/15/2013

DV Tool at 1161' (Cement w/ 200 sx)

TOC: 1930' (Calc)

Open Ended Tbg at 2,890'

CIBP at 2940' w/ cmt to 2905'

Yates @ 2888'
Hole Size: 7 7/8"
Prod. Csg: 5 1/2" - 14#, J-55
Set @ 2985'
Cement: 200 sxs
DV Tool: 200 sxs

7-R @ 3217'

Queen @ 3535'

Field: **Cooper Jal Unit**

	Location:
Footage:	990 FNL & 1650 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,318'
KB:	3,325'
KB Calc:	7'
ck w/log?	Yes

Date	History
17-Dec-49	OH complete 2993' - 3206' - no stimulation.
19-Jun-53	Cleaned out.
1-Oct-56	Cleaned out and placed on pump.
1-Feb-59	Cleaned out.
9-Mar-61	Deepend to 3560' and run 4-1/2" liner to 2871'. Sqz 100 sx around liner.
	Perf 3359' - 3400' w/ 2 SPF & frac'ed w/ 15000 gals and 1 ppg sand.
27-Jul-72	Found HIC 2' f/ surface - repair with Fibrglass Epoxy Patch.
12-Nov-74	Perf 3010' - 3291', PB w/ sand to 3,300' & acidize w/ 4000 gal 15% & BS.
10-Dec-74	Frac perfs at 3010' - 3291' w/ 40,000gals w/ 1.5 ppg sand. PBTD: 3300'.
21-Dec-79	Re-numbered well from CJU #131 to CJU #245 well.
8-Jul-89	Acidize perfs at 3010' - 3291' w/ 3000 gal 15% & 1200# RS in 3 stages.
4-Sep-92	Set CIBP at 3,350' w/ cmt to 3,300'. Perf 3,105' - 3,135' w/ 8 SPF & frac
	perfs at 3010' - 3192' w/ 56,000 gal 30# Spectra Frac gel & 231,200#
	12/20 Brady sand & 16,900# 12/20 Resin sand.
16-Oct-92	CO frac sand f/ 3034' - 3310'. Weld outer patch on csg at 2' below GL.
12-Mar-02	Change out rods, tbg & pump.
19-Sep-05	DO CIBP & CO to PBTD of 3,560'. RWTP.
28-Sep-05	Rings torn on plunger.
4-Oct-05	Tag fill at 3,539'. Long stroke pump & RWTP.
13-Oct-05	Long stroke pump & RWTP.
9-Jul-07	Hole in joint above SN.
11-Sep-07	Hole in jt 6 & 8 above pump. Busted 3 jts while hydrotesting.
25-Aug-08	Body Break in 47th - 3/4" rod. Replaced plunger.
19-Jul-09	Tag fill at 3,534'. Ran pressure bomb - 271# @ 3000'. Burst jt #94.
21-Mar-11	CO fill to 3564' & perf 3000' - 3344'. Frac well & screened out w/
	154,000# sand pumped. CO to PBTD of 3,560' & RWTP.
1-Sep-11	Upsize from 1-3/4" pump to 2-1/4" pump.
10-Sep-11	Rod part at 2nd rod from surface.
15-Sep-11	Box break #36-7/8" rod. Run new KD 7/8" and 3/4" rods.
5-Oct-11	Change out 35 rod boxes due to wear and pitting. Install RG on 3/4" rods.
7-Oct-11	Change out 42 - 7/8" boxes (wear & pitting). Replace all 3/4" rods.
22-Nov-11	Hydrotest to 7000# & found hole in jt above TAC.
30-May-12	Hydrotest to 7000# & found split in 85th jt.
3-Oct-12	Tag fill at 3,360'. Hydrotest & had split in 12th jt. Replace 30 x 7/8" cplgs.
6-Nov-12	LD MA due to pits. Hydrotest - split on 9th jt f/ WB. WB was cut inside.
1-Feb-13	Box break on 87th rod. Change out 26 x 3-4" boxes.
15-Feb-13	Broken coupling on 37th rod.

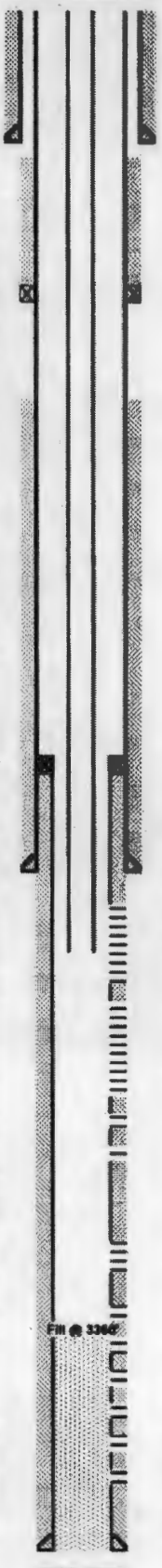
	Tubing Detail (top to bottom)		
Joints	Description	Footage	Depth
80	2 7/8" 6.5#,SM tbg.	2,525	2,525
1	2 7/8" 6.4#, EUE 8rd tbg.	3	2,528
10	2 7/8" 6.4#,SM J-55, 8rd EUE tbg.	315	2,843
1	2 3/8" 6.4#, Lift Sub.	4	2,847
1	2 1/2" x 1 3/4" x 24' working barrel w/ SS.	24	2,871
1	2 7/8" Lift Sub.	1	2,872
1	2 7/8" x 20' Spirit D-Sander.	20	2,892
1	2 7/8" 6.4#, J-55, 8rd EUE tbg, mule shoe.	120	3,012

	Rod Detail (top to bottom)		
Rods	Description	Footage	Depth
1	26' x 1/1/4" polish rod w/ 7/8" pin.	21.00	21.00
1	1 1/4" x 1 1/2" x 16' liner.	0.00	21.00
2	6', 4' - 7/8" pony rods.	10.00	31.00
35	1" KD steel rods.	875.00	906.00
51	7/8" steel rods.	1,275.00	2,181.00
29	1 1/2" sinker bars.	650.00	2,831.00
1	1" Lift Sub.	1.00	2,832.00
1	2 1/4" x 4' Grooved plunger w/ 2 1/2" SV.	4.00	2,836.00

Pumping Unit:
Updated: 1/13/14 MCB

CJU #245 (131)

Wellbore Diagram



Reservoir: Cooper Jal

Well ID Info:	CJU #245 (131)
API No:	30-025-09825
Spud Date:	11/19/1949

Hole Size: 10-3/4"
Conductor: 8-5/8", 28#
Set @ 285'
Cement w/ 125 sx.
Circ:
TOC: Surface

TOC: 334' (Calc)

DV Tool at 1,191' (cement w/ 150 sx)

TOC: 1850' (Calc)

TOL @ 2,871'

Hole Size: 7-7/8"
Prod. Csg: 5-1/2" 14#
Set @ 2,985'
Cement: 200 sx at shoe & 150 sx at DV Tool

Yates @ 3012'
Perf 3,000' - 3,009' w/ 2 SPF - 3/21/2011
Perf 3,010' - 3,018' w/ 1 SPF - 11/12/1974
EOT @ 3,012'
Perf 3,044' - 3,060' w/ 1 SPF - 11/12/1974
Perf 3,019' - 3,089' w/ 2 SPF - 3/21/2011

Perf 3,077' - 3,092' w/ 2 SPF - 3/21/2011
Perf 3,093' - 3,104' w/ 1 SPF - 11/12/1974
Perf 3,105' - 3,135' w/ 8 SPF - 8/31/1992
Perf 3,136' - 3,154' w/ 2 SPF - 3/21/2011
Perf 3,155' - 3,161' w/ 1 SPF - 11/12/1974
Perf 3,162' - 3,168' w/ 2 SPF - 3/21/2011

Perf 3,176' - 3,184' w/ 1 SPF - 11/12/1974

Perf 3,200' - 3,220' w/ 1 SPF - 11/12/1974

7-R @ 3226'

Perf 3,271' - 3,273' w/ 2 SPF - 3/21/2011
Perf 3,278' - 3,291' w/ 1 SPF - 11/12/1974

Perf 3,340' - 3,344' w/ 2 SPF - 3/21/2011

Perf 3,359' - 3,362' w/ 2 SPF - 3/9/1961

Perf 3,370' - 3,372' w/ 2 SPF - 3/9/1961

Perf 3,397' - 3,400' w/ 2 SPF - 3/9/1961

Perf 3,449' - 3,453' w/ 2 SPF - 3/9/1961

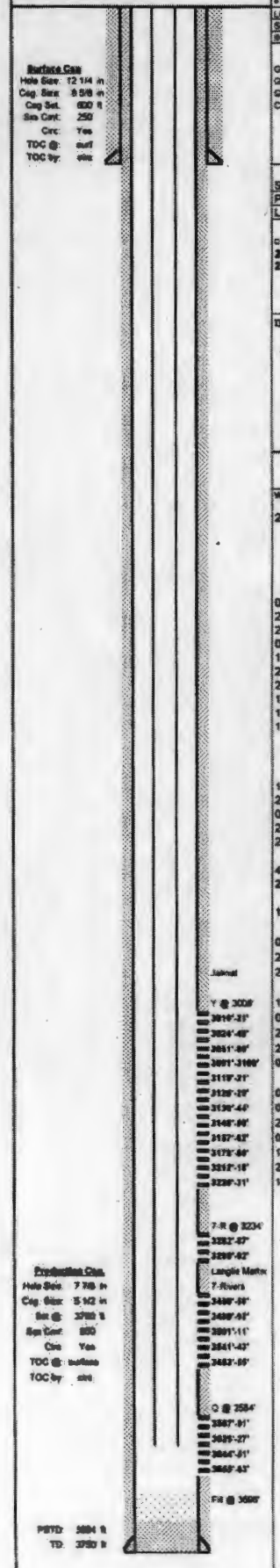
Perf 3,479' - 3,486' w/ 2 SPF - 3/9/1961

Hole Size: 4-7/8"
Prod. Liner: 4-1/2" - 10.5#
Liner Set at: 3560'
Cement: 100 sx (squeeze around liner)

Queen @ 3585'

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME:	Cooper Jal Unit			WELL NO.	403
STATUS:	Active	Oil		API#	30-025-32286
LOCATION:	150 FNL & 100 FWL, Sec 19, T - 24S, R - 37E, Lea County, New Mexico				
SPUD DATE:	11/13/93 TD	3750	KB 3,319'	DF	
INIT. COMP. DATE:	02/11/94 PBTD	3694	GL 3,309'		

GEOLOGIC DATA

ELECTRIC LOGS:
GR-DLL-MSFL (11-20-93 Halliburton)
GR-SDL-DSN-CSNG (11-20-93 Halliburton)
GR-FWS (11-20-93 Halliburton)
Computer Analyzed Log (11-20-93 Halliburton)
GR-CCL (11-28-93 Halliburton)
GR-CCL (10-6-97 Schlumberger)

CORES, DSTS, or MUD LOGS:
Core 1: 2985 - 3009' (80' recovery)
Core 2: 3009 - 3118' (80' recovery)
Core 3: 3116 - 3175' (60' recovery)
Core 4: 3175 - 3237' (60' recovery)

HYDROCARBON BEARING ZONE DEPTH TOPS:
Yates @ 3008' 7-Rivers @ 3234' Queen @ 3584'

CASING PROFILE

SURF:	8 5/8" - 24#, WC-50, ST&C set@ 400'. Cmt'd w/250 sks - circ cmt to surface.
PROD:	5 1/2" - 15.5#, WC-50, LT&C set@ 3750'. Cmt'd w/850 sks - circ cmt to surface.
LINER:	None

CURRENT PERFORATION DATA

CSG. PERFS: OPEN HOLE:
24-Nov-93 Perf'd L M f/3450'-58', 3480'-92', 3501'-11', 41'-43', 53'-55', 3567'-91', 3625'-27', 44'-51', & 3655'-83' w/ 2 spf (110 holes)
24-Nov-93 Perf'd Jalmat f/3010'-21', 3024'-40', 3051'-80', 3091'-3109', 3119'-21', 3126'-29', 3139'-44', 3148'-50', 3153'-65' 3175'-82', 3176'-80', 3212'-16', 3228'-31', 3282'-87', & 3290'-92' w/ 2 spf (222 holes total)

TUBING DETAIL — 12/23/2011

Length (ft)		Detail
10		KB
3020	111	2 7/8" J-55 6.5# 8rd tubing
4	1	3 1/2" Lift Sub
30	1	2 7/8" Stator
31	1	2 7/8" J-55 6.5# 8rd tubing
4	1	5 1/2" x 2 7/8" TAC
3099		

ROD DETAIL — 12/22/2011

Length (ft)		Detail
13	1	1 1/4" x 16' PR w/ 7/8" pin
6	1	1 1/4" x 1 1/2" x 14' liner
25	1	1" steel rod
8	2	2', 8' - 1" Steel Subs
3475	139	1" KD rods guided
29	1	Rotor
6	1	1 1/4" x 6' Gas Anchor
3585		

WELL HISTORY SUMMARY

24-Nov-93 IC: Perf'd Langlie Mattix f/ 3450'-58', 3480'-92', 3501'-11', 41'-43', 53'-55', 3567'-91', 3625'-27', 3644'-51' and 3655'-83' with 2 spf (110 holes). Frac'd with 29,000 gals XLG 2% KCL carrying 138,000#'s 16/30 brady sand. Pump test 24 hours - 1 BOPd, 114 BWPD, & 24 MCFPD. Perf'd Jalmat f/ 3010'-21', 24'-40', 51'-80', 3091'-3109', 3119'-21', 26'-29', 39'-44', 48'-50', 53'-55', 57'-62', 3176'-80', 12'-16', 28'-31', 82'-87', 3282 - 87' & 3290 - 92' w/ 2 spf (222 holes total). Frac'd w/ 43,000 gals XLG 2% KCl carrying 220,000# 12/20 sand. Pump tst 24 hrs - 32 bopd, 183 bwpd, & 11 Mcfgpd. Commingled all perfs: IP=33 bopd, 207 bwpd, & 23 MCFPD.
05-Jan-94 MWOCD Potential test: 32 bopd, 183 bwpd, & 11 Mcfgpd
29-Apr-94 Replaced rod pump.
21-May-94 Replaced rod pump.
03-Mar-94 Replaced rod pump. Tst tbg. Good tst.
16-Aug-94 C/O 30' of fill. Replaced rod pump.
21-Jan-95 Repaired rod part - replaced rod pump, 47 - 3/4" boxes, 40 -7/8" boxes, & 36 - 1" boxes. Tst tbg. Good tst.
23-Sep-96 Repaired rod part - replaced rod pump and 8 - 3/4" rods.
10-Oct-97 Set CIBP @ 3420' & dump'd 35' of cmt on top. TOC-3385'. Repaired rod part - replaced rod pmp & ran new string of rods.
12-Nov-98 Set CIBP @ 2850'. 35' of cmt on top. TOC-2911'. Displaced csg w/pkr fluid & tst csg to 550# - Okay. Well T/A'd 11/16/98.
11-Nov-02 Re-enter T/A'd Well. RIH w/ 4 3/4" bit & 6 - 2 1/2" Drill Collars on 2 7/8" tubing. Tagged cmt @ 2933'. Test csg to 550# - held. Drilled cmt & CIBP. Tagged CIBP at 3045'. Tagged cmt of second plug at 3382', drilled cmt & CIBP at 3421'. Drilled & pushed to 3,695'. Circ'd, drilled & pushed CIBP to 3695'. Circ'd well clean. 2790 bbls of water to complete job. Used 5 gallons Corrosion Inhibitor and ran Production Equipment. Status change to Producing.
18-Nov-02 Lay 1150' of 2" poly flowline from CJU #403 to CJU #202 and tie in.
27-Dec-02 POOH w/ rods & pump. Pump was stucked. POOH with 2 7/8" tubing. Bailed out sand to 3695', RIH with production string.
08-Jan-03 POOH with rods, pump, and 101 - 2 7/8" tubing. Changed out pump. Placed well on production.
23-May-03 R/P body break 114 rods from surface. Change rd design to reduce rod load & slow down unit spm. Pump was good.
29-Jul-03 POOH with rods, pump, and tubing. Changed out pump. Hydrotest tubing in hole - busted 3 joints. Tagged bottom at 3692', tally out of hole. RIH with pump, rods, and tubing. Added 13 joints to tubing string.
4-Dec-03 POOH & laid dwn sub pmp, RIH w/ new 114 jts 2 7/8" tbg & tagged @ 2704'. Set TAC w/12,000#. RIH w/pmp & rods. PWOP.
26-May-04 POOH w/ rods & pump. Tagged fill at 3696' & tally out of hole. Hydrotest tbg in hole to 7,000#. Set TAC with 16,000#. RIh w/ pmp & rods. Laid down 6 jts due to outside corrosion. Changed out 12 - 7/8" & 18 - 3/4" boxes due to wear. PWOP.
16-Dec-04 POOH with rods without stucked pump. POOH with 2 7/8" tubing. Hydrotest tubing in hole - found 1 split 94th joint. Laid down 8 12 joints due to pits. RIH with production string with Super Max blast joint. PWOP.
08-Jan-05 Unseat pump, pumped 40 bbls water with soap. PWOP.
27-Dec-05 POOH w/ rods, pump and tubing. Had parted 7/8" (box break) - rod # 93. RIH w/ tubing, pump and rods. PWOP.
29-Jun-06 POOH with rods and pump. POOH with 2 7/8" tubing. Hydrotest tubing in hole to 7000# - found hole on joint above SN.RIH with and rods. Load and test pump to 500#. PWOP.
14-Mar-07 Stripped rods string out off tubing. Found hole on joint above SN. RIH with tubing, rods and pump. PWOP.
04-Jan-08 POOH with rods pump and tubing. Found hole on joint above SN. Hydrotest tubing in hole to 7000#. RIH with pump and rods. F
28-Aug-09 POOH with rods, pump and tubing. Hydrotest tubing down hole to 7000# - found split on 112 th. RIH with pump and rods. PWO
22-Mar-10 POOH with parted 22nd - 7/8" (box break). Re-set pump PWOP.
06-Apr-10 POOH with rods and pump. Scanalog tubing: 7 green, and 1 red @ bottom of prod string. Hydrotest tubing in hole to 7000# - good. RIH with pump and rods. PWOP.
02-Jun-10 POOH with rods, plunger and tubing. Hydrotest tubing to 7000# - found split on 104th joint. RIH with plunger and rods. PWOP.
08-Sep-10 Replaced parted polished Rod. PWOP.
21-Sep-10 POOH with rod, pump and tubing. Hydrotest tubing to 7,000 psig - found split in 110th joint. RIH with plunger and rods. PWOP.
02-Feb-11 POOH with plunger and tubing. Hydrotest tubing to 7,000 psig - found hole on 111 joint & bad pit on 110 joint. PWOP.
18-Feb-11 POOH with rods, pump and tubing. RIH with stator on tubing. RIH with rotor and rods. PWOP.
21-Dec-11 POOH with rods, pump and tubing. Ran BHP Survey to 3,669'. Hydrotest tubing - okay. PIH with rotor and rods. PWOP.
18-Jan-13 POOH w/ rods, pump & tbg. Parted 67th rod, body break. Pump rate was low. POOH w/ rotor, RIH w/ rods & replacement rotor. PW

PREPARED BY:	Larry S. Adams	Domingo Carrizales	UPDATED:	08-Jan-12

Field: Cooper Jal Unit

	Location:
Footage:	510 FNL & 2310 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,314'
KB:	3,325'
KB Calc:	11'
ck wrlog?	N/A

Date	History
11-Nov-93	Selectively perforated 3423' - 3655' (70 holes) & frac'd w/ 63,200 gals
	x-link gel & 136,000# 16/30 sand. Selectively perforated 3013' - 3279'
	(196 holes) & frac'd w/ 43,000 gals x-link gel & 220000# 12/20 sd.
14-Jan-94	Rings, ball and seat were sand cut. Pump was plugged with sand.
9-Feb-94	Changed out pump.
1-Feb-94	Changed out pump.
28-Apr-94	Parted polish rod below clamp. Change pump.
11-Oct-95	HIT - jt above SN. Tag for fill - no fill.
1-Jan-98	Based in wtr decline - Langlie Mattix was TA'd in 1998. See 6/3/03 notes.
15-Dec-00	Pumped 500 gal 15% HCl to release stuck pump.
8-Jun-02	Tag fill at 3326'. CO w/ notch collar to 3386' - could not make more hole.
3-Jun-03	CO fill 3383' - 3390' & found CIBP at 3390' - no record of when set.
	Could not drill out. Beat down to 3665'.
24-Jun-03	Replaced K-Bars.
5-Mar-04	Body break in 21st 3/4" rod.
2-Feb-05	HIT - jt above SN.
30-Oct-06	HIT - jt above SN. Changed out 10 1" rods due to pitting.
1-Feb-07	HIT on jt 105. Burst 5 jts while hydrotesting.
16-Jul-10	Split in 109th jt & burst 113th jt.

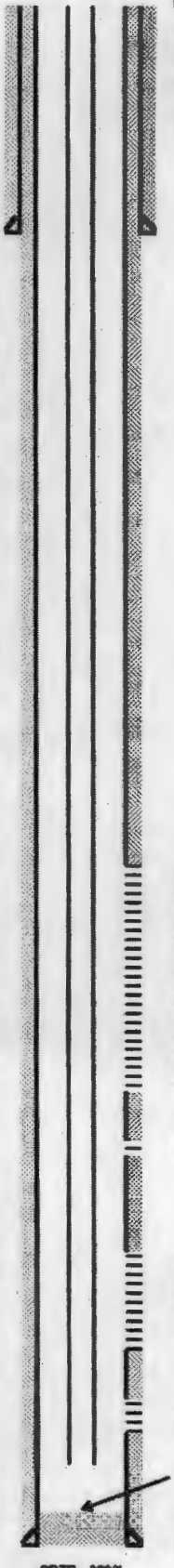
Joints	Tubing Detail (top to bottom) Description	Footage	Depth
94	2-7/8" 6.5#, J-55 8rd	2,961	2,961
1	2-7/8" x 5-1/2" TAC	3	2,964
21	2-7/8" 6.5#, J-55 8rd	646	3,610
1	2-7/8" Blast Joint	31	3,641
1	1 - 2-7/8" SN	1	3,642
1	2-7/8" Perf Sub	4	3,646
1	2-7/8" Mud Anchor	31	3,677

Rods	Rod Detail (top to bottom) Description	Footage	Depth
1	26' x 1-1/4" polish rod w/ 7/8" pin	18.00	18.00
1	1-1/4" x 1-1/2" x 12' liner	0.00	18.00
67	1" Grade D rods	1,675.00	1,693.00
55	7/8" Grade D rods	1,375.00	3,068.00
24	1-1/4" K-Bars	600.00	3,668.00
1	2-1/2" x 1-3/4" x 20' RHBC pump	20.00	3,688.00
1	1 1/4" x 16' 50 slot Gas Anchor	0.00	3,688.00

Pumping Unit:
Updated: 12/18/13 MCB

CJU #404

Wellbore Diagram



PBTD 3692'
TD 3750'

Reservoir:	Cooper Jal
Well ID Info:	CJU #404
API No:	30-025-32216
Spud Date:	10/19/1993

Hole Size:	12-1/4"
Surface Csg:	8-5/8" - 24#, WC-50 ST&C
Set @	1190'
Cement - Lead:	400 sx Class C w/ 4% Gel + 2% CaCl (13.5 ppg) (1.74 c
Tail:	200 sx Class C w/ 2% CaCl2 (14.8 ppg) (1.32 cu ft/sx)
Circ:	Yes (32 Sacks)
TOC:	Surface

TOC: Circ to Surface

Yates @ 3005'

3013'-3016'
3018'-3024'
3029'-3041'
3049'-3069'
3083'-3094'
3104'-3108'
3109'-3113'
3115'-3122'
3131'-3136'
3142'-3145'
3167'-3171'
3204'-3213'
3219'-3222'
3219'-3222'

7-R @ 3223'

3272'-3279'

3423'-3429'
3454'-3459'
3485'-3486'
3502'-3205'
3511'-3515'
3557'-3560'

Queen @ 3630'

3591'-3596'
3649'-3655'

Pushed CIBP to 3,686'

Hole Size:	7-7/8"
Prod. Csg:	5-1/2" - 15.5# WC-50, LT&C
Set @	3750'
Cement - Lead:	575 sx Poz H w/ 6% Gel + 5% Salt + 1/4# Flocele (12.4
Tail:	350 sx Poz H w/ 2% CaCl2 (15.6 ppg) (1.18 cu ft/sx)
Circ:	Yes (35 sx)

Field: Cooper Jal Unit

	Location:
Footage:	2522 FNL & 400 FEL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3303'
KB:	3315'
KB Calc:	12'
ck w/log?	yes

Date	History
27-Oct-94	Selectivsly perf 3435' - 3668' w/ 2 SPF (50 holes). Frac perfs w/ 29000 gal XLG & 136000# 16/30 sd. Set RBP & perf 3132' - 3163' w/ 4 SPF (124 holes). Acidize w/ 2000 gal & 168 BS & frac w/ 43000 gal XLG & 220000# 12/20 sand. Recover RBP & commingle.
24-May-96	Set CIBP at 3400' & dump cmt to 3365'. Set RBP (3125) & selectivsly perf 3016' - 3112' w/ 4 SPF (180 holes). Acidize w/ 3000 gals 15% & 250 BS.
22-Oct-99	Acidized perfs at 3018' - 3163' w/ 4000 gals 15% using Sonic Hammer.
10-Aug-01	Acidized perfs at 3018' - 3163' w/ 5000 gals 15% using Sonic Hammer.
28-Dec-01	Change out pump.
6-Nov-03	Box break (3/4" rod #90). Replace 18 x 3/4" rods & 44 x 3/4" boxes - wear.
22-Mar-04	Change out liner in polish rod.
6-Oct-04	Box break in 7/8" rod #51 from surface. LD 47 3/4" rods due to wear.
29-Nov-04	Body break in 3/4" rod #98 from surface.
3-Jan-05	Body break in 3/4" rod #108 from surface.
6-Feb-05	LD 36 x 3/4" rods due to pits. Split in tbg jt #94. Scan - 79 B, 15 G & 5 R.
14-Aug-06	Change pump.
15-Jan-08	Hole in 13th jt from surface.
15-Sep-08	DO CIBO and CO to 3,750'. Selectively perf 3123' - 3713' w/ 3 SPF and acidize all perfs w/ 12500 gal NEFE + 156 Tons CO2 & 15000# RS.
16-Jan-09	112th - 3/4" rod was unscrewed. Fish and hang.
28-May-09	Tag at 3,610' w/ bar.
24-Jun-11	Fish Polish rod.
13-Jan-12	60th 7/8" rod was parted - body break.
15-Feb-12	Split in Blast Jt.
11-Dec-12	Broke pin in 4th - 7/8" rod.
30-Jan-13	Parted at fishing neck on 1-1/2" k-bar (124th rod from surface)
4-Feb-13	Parted at fishing neck on 1-1/2" k-bar (125th rod from surface)
5-Mar-13	Body break in 99th - 7/8" rod
19-Jul-13	Pin break at 53rd 7/8" rod.
30-Jul-13	Polish rod came unscrewed.
8-Aug-13	Replaced rod pump w/ PC pump.
5-Sep-13	Rod part on sub above rotor.

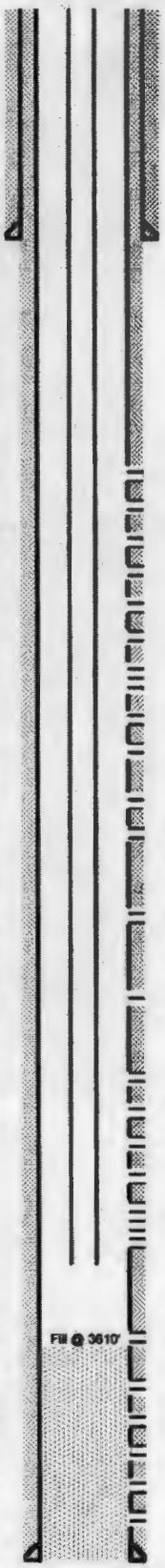
Joints	Tubing Detail (top to bottom) Description	Footage	Depth
124	2 7/8" 6.5#, J-55, 8rd EUE tbg.	3,319	3,319
1	X-over	1	3,320
24	4-1/2" PC Stator	35	3,355
2	Sub	2	3,357
1	2 7/8" 6.5#, J-55, 8rd EUE tbg.	32	3,389
1	2-7/8" x 5-1/2" TAC	3	3,392

Rods	Rod Detail (top to bottom) Description	Footage	Depth
1	1-1/4" Polish Rod	26.00	26.00
5	2 x 6', 2 x 4' & 1 x 2' - 1" Pony Rods	22.00	48.00
132	1" Rods	3,300.00	3,348.00
	PC Rotor	34.00	3,382.00

Pumping Unit:
Updated: 02/10/14 MCB

CJU #406

Wellbore Diagram



PBTD 3750'
TD 3750'

Reservoir:	Cooper Jal
Well ID Info:	CJU #406
API No:	30-025-32898
Spud Date:	7/19/1994

Hole Size:	12-1/4"
Surface Csg:	8-5/8" - 24#, WC-50 ST&C
Set @	410'
Cement:	250 sx Class C w/ 2% CaCl2 (14.8 ppg, 1.34 yield)
Circ:	Yes (60 Sacks)
TOC:	Surface

Yates @ 3014'

Perf 3,018' - 3,022' w/ 4 SPF - 5/21/1996

Perf 3,030' - 3,040' w/ 4 SPF - 5/21/1996

Perf 3,057' - 3,083' w/ 4 SPF - 5/21/1996

Perf 3,088 - 3,094' w/ 4 SPF - 5/21/1996

Perf 3,100' - 3,112' w/ 4 SPF - 5/21/1996

Perf 3,123' - 3,126' w/ 3 SPF - 9/9/2008

Perf 3,132' - 3,163' w/ 4 SPF - 10/4/1994

Perf 3,166' - 3,178' w/ 3 SPF - 9/9/2008

Perf 3,182' - 3,200' w/ 3 SPF - 9/9/2008

Perf 3,214' - 3,226' w/ 3 SPF - 9/9/2008

Perf 3,234' - 3,241' w/ 3 SPF - 9/9/2008

7-R @ 3244'

Perf 3,284' - 3,296' w/ 3 SPF - 9/9/2008

Perf 3,354' - 3,368' w/ 3 SPF - 9/9/2008

Perf 3,414' - 3,418' w/ 3 SPF - 9/9/2008

Perf 3,435' - 3,439' w/ 2 SPF - 8/23/1994

Perf 3,467' - 3,473' w/ 2 SPF - 8/23/1994

Perf 3,498' - 3,502' w/ 2 SPF - 8/23/1994

Perf 3,498' - 3,502' w/ 2 SPF - 8/23/1994
Perf 3,520' - 3,524' w/ 3 SPF - 9/9/2008
Perf 3,527' - 3,530' w/ 2 SPF - 8/23/1994

Queen @ 3602'

Perf 3,605' - 3,609' w/ 2 SPF - 8/23/1994

Perf 3,641' - 3,645' w/ 3 SPF - 9/9/2008

Perf 3,664' - 3,668' w/ 2 SPF - 8/23/1994

Perf 3,672' - 3,682' w/ 3 SPF - 9/9/2008

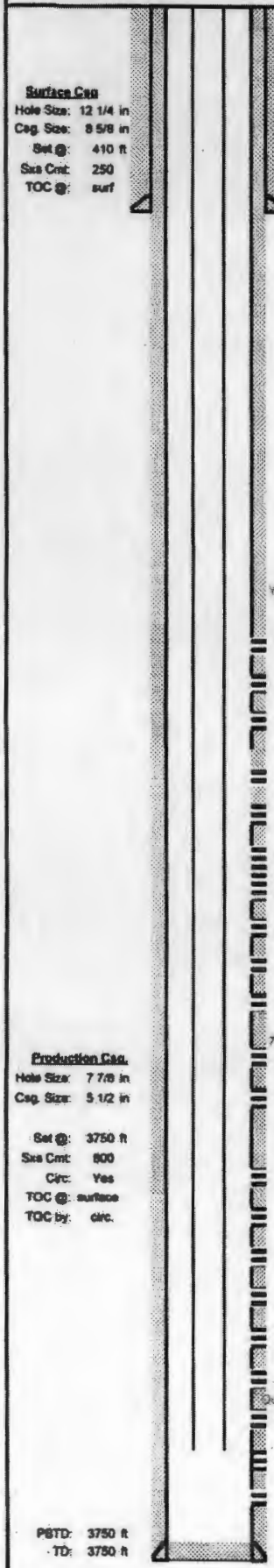
Perf 3,694' - 3,696' w/ 3 SPF - 9/9/2008

Perf 3,706' - 3,713' w/ 3 SPF - 9/9/2008

Hole Size:	7-7/8"
Prod. Csg:	5-1/2" - 15.5# CF-50, LT&C
Set @	3750'
Cement - Lead:	600 sx (35:65) Poz:H w/ 6% Gel + 5% Salt (12.6 ppg)
Tail:	350 sx Class H (15.6 ppg)
Circ:	Yes (283 sx)

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME	Cooper Jal Unit				WELL NO.	407
STATUS:	Active	Oil			API#	30-025-32569
LOCATION:	2540 FSL & 1640 FEL, Sec 24, T - 24S, R - 36E, Lee County, New Mexico					
SPUD DATE:	07/29/94	TD	3750	KB	3,325'	DF
INT. COMP. DATE:	10/01/94	PBTD	3750	GL	3,314'	

GEOLOGICAL DATA

ELECTRIC LOGS:

GR-DLL-MSFL (8-9-94 Halliburton)
GR-DSN-CSNG (8-9-94 Halliburton)
GR-FWS (8-9-94 Halliburton)
GR-CCL from 3683 - 2600' (7-27-96 Halliburton)

CORES, DST'S or MUD LOGS:

Core 1: 3275 - 3335' (recovered 60')
Core 2: 3335 -67' (recovered 32')
Core 3: 3367 - 3401' (recovered 34')
Core 4: 3401 - 14' (recovered 13')
Core 5: 3415 - 75' (recovered 60')
Core 6: 3475 - 3535' (recovered 60')
Core 7: 3535 - 75' (recovered 35')

HYROCARBON BEARING ZONE DEPTH TOPS:

Yates @3019' 7-Rivers @ 3240' Queen @ 3611'

CASING PROFILE

SURF. 8 5/8" - 24#, WC-50, ST&C set@ 410'. Cmt'd w/250 sxs - circ cmt to surface.
PROD. 5 1/2" - 15.5#, WC-50, LT&C set@ 3750' Cmt'd w/800 sxs - circ cmt to surface.
LINER. None

CURRENT PERFORATION DATA

CSG PERFS / OPEN HOLE

01-Oct-94 **Perf'd Jalmat f/ 3144 - 3172' w/ 4 spf (112 holes total)**
01-Oct-94 **Perf'd L. M. f/ 3400'-04', 20'-26', 44'-46', 3473'-82', 3503'-11', 3523'-48', 3611'-16', 3649'-54', & 3670'-78' 2 JHPF (72', 144 hole**
Isolated below CIBP @ 3350'
26-Jul-96 **Perf'd Jalmat f/ 3036 - 40', 3048 -58', 3066 - 78', 3104 - 14' w/ 4 spf (160 holes total).**
Note: Langlie Mattix perfs info came from Form C-105 dated 5/8/95 and perfs pick on Halliburton's Spectral Density Dual Spaced Neutron Spectral Gam
26-Aug-08 **Perf'd 7-R f/ 33352'-56', & 3286'-98'; Perf'd Y f/ 3236'-39', 3221'-23', 3180'-88', 30'-34', 80'-88', & 3130'-34', 36 feet, 108 holes.**

TUBING DETAIL 3/14/12

Length (ft)		Detail
3286	108	3 1/2" J-55, 8rd EUE tbg.
6	1	2 7/8" Tbg Sub
41	1	3 1/2" Stator
31	1	2 7/8" J-55, 8rd EUE tbg.
3	1	2 7/8" j-55 TAC
3367	btm	

ROD DETAIL 3/14/12

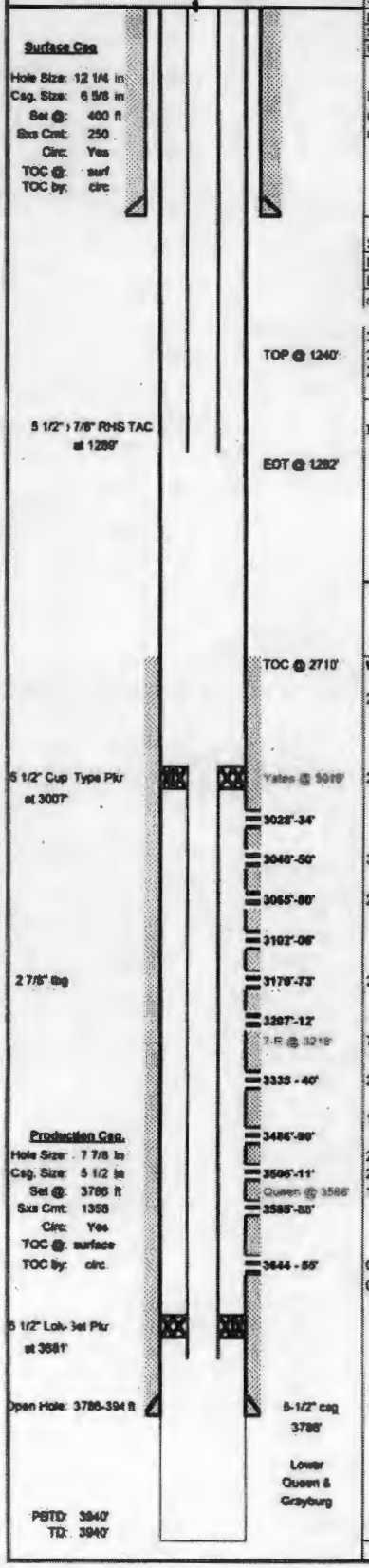
Length (ft)		Detail
15	1	16' x 1 1/4" polish rod (7/8" pin)
14	2	6', 8' - 1" steel pony rods
3275	131	7/8" New KD steel rods
34	1	Rotor
3338		btm

WELL HISTORY SUMMARY

1-Oct-94 **Perf'd Jalmat f/ 3144 - 3172' w/ 4 spf (112 holes total) Frac'd w/43,000 gals XLG 2% KCL carrying 220,000#'s 12/20 sand. PM=1 660 - 1089 psi, AIR=30 bpm, & ISIP = 1497 psi. PWOP. IP = 80 bopd, 149 bwpd, & 79 Mcfgpd. Perf'd Langlie Mattix f/ 3400'-04', 3420'-26', 3444'-46', 3473'-82', 3503'-11', 3523'-48', 3611'-16', 3649'-54', & 3670'-78' w/ 2 JHPF (72 ft 144 holes). Frac'd Langlie Mattix / 29,000 gals XLG 2% KCl carrying 136,000#'s 16/30 sand. No test noted.**
5-Dec-94 Changed out rod pump & gas anchor.
######## Repaired rod part & changed out rod pump.
26-Jul-96 Ran GR-CCL f/ 3683'-2800'. **Set CIBP @ 3350'.** Dump 10' cmt on top. **PBTD=3340'. Perf'd Yates f/ 3036'-40', 3048'-58', 3066'-78', 3104'-14' w/ 4 spf (160 holes).** Acdz'd perfs 3036'-3114 w/3,000 gals 15% NEFE HCL dropping 240 - 7/8" RCN ball sealers. AIR= 7.5 bpm at 850 psi. ISIP=vacuum. **After WO: 47 bopd, 84 bwpd, & 17 Mcfgpd.**
10-Feb-97 Change out rod pump.
19-Aug-98 Tagged btm @ 3340' - no fill. Tst tbg. Good tst. Replaced rod pump.
02-Nov-98 Replaced rod pump.
20-Mar-01 Changed out rod pump, 15 - 3/4" rod boxes, & 5 - 7/8" rod boxes.
27-Jun-01 Tagged fill @ 3302' (22'). Change out pump, 43 - 3/4" rod boxes, 42 - 7/8" rod boxes, & 7 - 1" rod boxes.
21-Mar-03 Tally out of hole flipping tubing. Hydrotest tubing going hole.
######## Rod Part 3/4" body break rod # 92 f/ surface. Replaced 19- 3/4" rods. Upsize pump to 1 1/2" ins. X 24' f/ CJU # 413.
30-Apr-04 POOH w/ rods & pump. Scanalog tubign out of hole. Replaced 40 green and 4 red w/ new joints of 2 7/8" tubing. PWOP.
13-Oct-06 Changed out polish rod liner.
18-Aug-08 POOH w/rod, pump & tbg. RIH w/4 3/4" bit 6 - 3 1/2" DCs. Tagged @ 3200'. Had trouble w/swivel & Reverse Unit. D/O cmt & CIBP. C/O to 3670' - recovered scale & frac sand. C/O to 3750'. Tagged 36' of fill - over night. Ran GR-CCL f/ 3714' to 2800'. **Perf'd 7-R f/ 33352'-56', & 3286'-98'; Perf'd Yates f/ 3236'-39', 3221'-23', 3180'-88', 3130'-34', 36 feet, 108 holes.** RIH w/ 5 1/2" PKR on 2 7/8" W/O (hydrotest to 7000#). Set PKR @ 2984'. Treat Jal & LM w/ 10,500 gals 15% HCl NEFE & 150 tons CO2. Divert w/ 12,500# RS. AIR= 10 bpm. Pavg= 3350#. ISIP= 800 psi# well back. PWOP. **IP: 12 BO, 22 MCF & 271 BW.**
09-Jan-09 POOH w/ rods, pump & tubing - found hole on 1st jt above SN. Hydrotest tbg 7000# - okay. RIH w/ pump & rods. PWOP.
03-Jun-09 POOH w/ rods, pump & tbg. RIH w/ Gray WL Tag Bar. **Tagged @ 3683'.** RIH w/ Press Gradient Tool. Took press survey at 500' increments. Hydrotest tbg to 7000# - found hole on jt above SN. RIH w/ pump & rods. PWOP. **Press @ 3000' = 335 psig.**
01-Jul-09 POOH with rods, pump and tubing. Hydrotest tubing to 7000# - burst 28th joint. RIH with pump and rods. PWOP.
09-Jul-09 POOH w/ rods, plunger & tbg & work barrel, laid down 7 jts - 2 7/8" tbg. Laid down 10-3/4" rods. Spaced out plunger. PWOP.
07-Sep-11 POOH with rods, pump & tubing. Took gradient survey. Hydrotest tubing to 7,000# - good. RIH with plunger & rods, PWOP.
17-Feb-12 POOH with unscrewed 114th rod. PWOP.
22-Feb-12 POOH w/ production string. Laid down tubing. Hydrotest tubing w/ Stator to 7,000 psig psig - good. RIH w/ rods & Rotor.PWOP.
14-Mar-12 POOH rods, Rotor, tubing , and Stator. RIH with Stator, tubing, Rotor and rods. PWOP.

PREPARED BY: Larry S. Adams Domingo Carrizales | UPDATED: 21-Mar-12

WELLBORE SCHEMATIC AND HISTORY



LEASE NAME	Cooper Jal Unit					WELL NO.	410 WSW
STATUS:	Water Supply Well					API#	30-025-32867
LOCATION:	1429 FNL & 1450 FWL, Sec 24, T - 24S, R - 36E; Lea County, New Mexico						
SPUD DATE:	05/09/95	TD	3786	KB	3,338'	DF	
INT. COMP. DATE:	05/22/95	PBTD	3735	GL	3,324'		

GEOLOGICAL DATA

ELECTRIC LOGS: DLT-MSFL-SLD (5-18-95 Halliburton)
CSL from 2700 - 3776' (5-18-95 Halliburton)
GR-CCL (5-21-95 Halliburton)

CORES, DST'S or MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3016' 7-Rivers @ 3216' Queen @ 3586'

CASING PROFILE

SURF.	8 5/8" - 24#, WC-50, ST&C set@ 423'. Cmt'd w/250 sxs - circ cmt to surface.
PROD.	5 1/2" - 15.5#, WC-50, LT&C set@ 3786'. Cmt'd w/1358 sxs - circ cmt to surface.
LINER.	None

CSG. PERFS / OPEN HOLE

22-May-95 **Perf'd L.M. Queen** f/ 3486 - 90', 3506 - 11', 3585 - 88', 3644 - 55' w/4 spf (92 holes total)
22-May-95 **Perf'd Jal Yates** f/ 3065 - 3080 w/ 4 spf (64 holes total)
25-Jul-96 **Perf'd Jalmat** f/3028'-34', 3040'-50', 3102'-06', 3170'-73', 3207'-12', 3216'-26' & 3335'-40', 4 spf (200 holes total).

CURRENT PERFORATION DATA

TUBING DETAIL — 5/10/2008

1232	39	2 7/8" J-55, 6.5#, 8rd Tbg
1	1	2 7/8" x 3 1/2" Crossover
8	1	3 1/2" LIR Sub
15	1	3 1/2" Stator
2	1	3 1/2" x 12' Tag Bar
33	1	2 7/8" J-55, 6.5#, 8rd Tbg
3	1	2 7/8" x 5 1/2" TAC RHR w/45 K shear pin
1292		

Top of Pump (Stator) is at 1240'.

ROD DETAIL — 3/21/2004

5	1	1 1/4" x 16' w/7/8" pin
1225	49	1" Steel Rods w/ 87 Rod Guides
10	1	Rotor
1240		

WELL HISTORY SUMMARY

22-May-95 IC: **Perf'd Queen** f/ 3486 - 90', 3506 - 11', 3585 - 88', 3644 - 55' w/4 spf (92 holes total). Frac'd w/34,600 gals. XL borate gel carrying 142,000#'s 20/40 brady sand. Pump tst for 23 hours: 15 bo, 39 BW & 33 MCF. **Perf'd Yates** 3065 - 3080' w/ 4 spf (64 holes total). Frac'd w/43,000 gals XLG 2% KCL carrying 216,000#'s 12/20 sand. Commingled all perfs - **IP=31 bopd, 235 bwpd, & 47 Mcfgpd (pumping).**

25-Jul-96 Set CIBP@ 3450' on WL & dump 10' cmt on top. PBTD=3440'. **Perf'd Yates** f/ 3028'-80', 3102'-73', 3207'-26', 3335'-40'. Acdz'd perfs 3102'-3340' w/2000 gals 15% NEFE HCl & 200 7/8" RCN BSs. AIR - 9 BPM at 1170#. ISIP - vacuum. Acdz'd perfs 3028 - 3050' w/1300 gals 15% NEFE HCL & 110 7/8" RCN ball sealers. AIR= 9 BPM @ 980 psig. @ 980 psig. ISIP=430, P5min=vacuum. **After WO: 15 bopd, 166 bwpd, & 12 Mcfgpd**

31-Aug-98 **Set CIBP @ 3000'.** Circ well w/pkr fluid & tst csg to 500 psi. Good tst. Dmp 35' cmt on CIBP. TOC @ 2965'. **Well TA'd 9-31-98.**

26-Mar-01 Displaced wellbore with gelled brine. Spot 30 sxs cmt from 2985 - 2750'. WOC. Tagged TOC @ 2710'. Spot 25 sxs cmt from 1400 - 1200'. WOC. Tagged TOC @ 1130' Circulate 55 sxs from 475' to surface inside 5 1/2" casing. Cut off wellhead and cap 5 1/2" casing. Installed Dry hole marker & cleaned location. NMOCD notified - well **P&A'd 3-28-2001.**

20-Dec-03 **Re-entered P&A'd Well.** Drilled out cmt plugs, CIBPs, & float shoe w/ 4 3/4" bit. **Deepened f/ 3,788' to 3,940' TD.** Swabbed test OH. Swabbed f/ 500 feet, fluid level didn't changed, recovered 166 bbls water. Ran sub pump on 2 3/8" tbg. Pump (set at 70 HZ) rate 3100 BFPD, fluid level dropped f/ 500' to 820'.

7-Jan-04 POOH with sub pump. Found water in both protectors and motors. Ran repaired pump in hole. **Test: 3100 BWPD (1/8/04).**

21-Jan-04 POOH w/sub pump & took in for inspection. RIH w/5 1/2" Lock Set Pkr w/ a 20/64" choke to 3722'. Set PKR and released from pkr. RIH with sub pump to 3600', bottom of motor at 3702'. Placed on production.

12-Feb-04 POOH w/ sub pump & took in for inspection. POOH w/ Lock Set PKR & changed out choke to 18/64". Set packer at 3722', RIH w/ sub pump to 3600', bottom of motor at 3702'. Placed well on pump at 2100 BFPD.

2-Mar-04 POOH w/sub pmp & took in for insp. RIH w/sub pmp to 3535', btm of motor @ 3646'. PWOP @ 2100 BFPD.

21-Mar-04 POOH w/ sub pump. Redress sub pump & RIH. Good pump action. Clay/oil emusion was plugging the pump.

13-May-04 POOH w/ 2 3/8" tbg & sub pump. POOH w/PKR & choke. RIH w/5 1/2" Lok-set Packer, 21 jts 2 7/8" IPC and 5 1/2" Cup Type Packer. Set with 2 3/8" on/off tool. **Bottom packer was set @ 3681', top packer set at 3007'.** RIH with 5 1/2" RHR Tubing Anchor Catcher, 1 joint 2 7/8" tubing, Stator, 39 joints 2 7/8" tubing. RIH with Rotor, 49 - 1" rods with rods guides. PWOP. **IP: 2 BOPD & 2200 BWPD (5/20/04).**

09-Jul-07 Latched on to parted rod. PWOP.

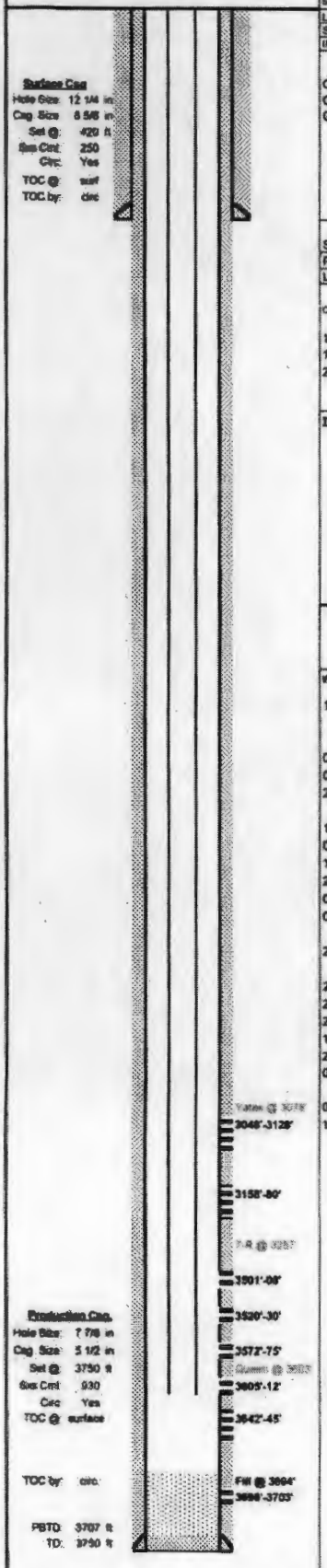
08-May-08 POOH with Sub Pump. RIH with Sub Pump. Monitor well for 2 hrs @ 42 Hz. Rate = 1380 bwpd @ 425 psi.

Production Csg.
Hole Size: 7 7/8 in
Csg. Size: 5 1/2 in
Set @: 3786 ft
Sxs Cmt: 1358
Circ: Yes
TOC @: surface
TOC by: circ.

PREPARED BY:	Larry S. Adams	D. Carrizales	UPDATED: 09-Jun-08

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME:	Cooper Jal Unit					WELL NO.	419
STATUS:	Active	Oil				API#	30-025-32551
LOCATION:	230 FSL & 500 FEL, Sec 12, T - 24S, R - 36E, Lea County, New Mexico						
SPUD DATE:	09/31/94	TD	3750	KB	3,327'	DF	3,326'
INT. COMP. DATE:	10/05/94	PBTD	3707	GL	3,315'		

GEOLOGICAL DATA

ELECTRIC LOGS:
GR-DSN-SDL-CSNG (9-7-94 Halliburton)
GR-DLL-MSFL-LSS (9-7-94 Halliburton)
GR-CCL (7-23-96 Rotary Wireline)

CORES, DST'S, w/ MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS:

Yates @ 3078' | 7-Rivers @ 3257' | Queen @ 3603'

CASING PROFILE

SURF.	8 5/8" - 24#, CF-50, ST&C set@ 420'. Cmt'd w/250 sxs - circ cmt to surface.
PROD.	5 1/2" - 15.5#, WC-50, LT&C set@ 3750'. Cmt'd w/930 sxs - circ cmt to surface.
LINER:	None

CURRENT PERFORATION DATA

CSG. PERFS:

OPEN HOLE:

13-Sep-94 Perf'd Landis Mattix f/ 3501'-08', 20'-30', 72'-75', 3605'-12', 42'-46', & 3698'-3703', w/ 2 spf (70 holes total)
13-Sep-94 Perf'd Jalmat f/ 3158 - 80' w/ 4 spf (88 holes total)
22-Jul-96 Perf'd Jalmat f/ 3048 - 3128' w/ 4 spf (172 holes total)

TUBING DETAIL — 1/6/12

Length (ft)		Detail
0	KB	
2981	95	2 7/8" 6.5#, J-55, 8rd EUE tbg.
3	1	5 1/2" x 2 7/8" TAC w/ 20,000#
535	18	2 7/8" 6.5#, J-55, 8rd EUE tbg.
4	1	2 7/8" Lift Sub
24	1	2 7/8" Tubing Pump
4	1	2 7/8" Lift Sub
20	1	2 7/8" Desander
62	2	2 7/8" Mud Anchor
3633		btm

ROD DETAIL — 1/6/12

Length (ft)		Detail
20	1	1 1/4" x 26' polish rod w/ 7/8" pin
0	1	1 1/4" x 1 1/2" x 16' liner
8	2	2', 6' - 1" pony rods
1075	43	1" steel rods
1225	49	7/8" steel rods
650	26	3/4" steel rods
575	23	1 1/2" K-Bar
4	1	2 1/4 " x 4' rod plunger
0	1	2 1/2" Sanding Valve & 1 1/4" x 12' GA
3567		btm

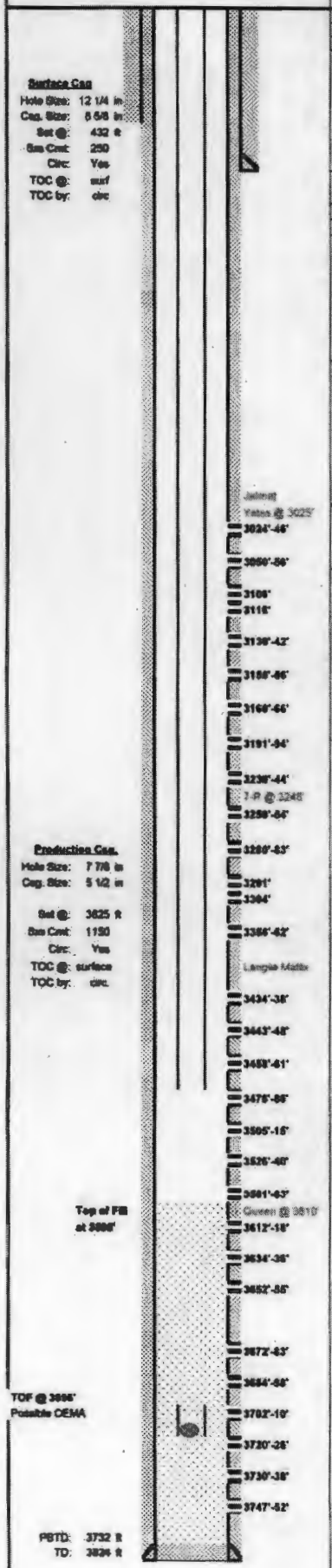
WELL HISTORY SUMMARY

13-Sep-94 IC: Perf'd L. M. f/3501'-08', 20'-30', 72'-75', 3605'-12', 42'-45', & 3698 - 3703' w/ 2 spf (70 holes total). Frac'd w/ 26,000 gals XLG 2% KCL carrying 108,000#'s 12/20 sand. Perf'd Yates f/ 3156 - 80' w/4 spf (88 holes total). Frac'd w/43,000 gals XLG carrying 220,000#'s 12/20 sand.
All perfs: IP=71 bopd, 120 bwpd, & 83 Mcfgpd (pumping)
09-Jan-95 C/O frac sand from 3650 - 3700' using bailer. Returned to production.
04-Nov-95 Change out rod pump and 12 bad rod boxes.
22-Jul-96 **Set CIBP @ 3480' & dump 10' cmt on top. PBTD=3440'. Perf'd Yates f/ 3048'-3128', 3156'-3180', w/ 4 spf (172 holes total). Acidized perfs w/3,000 gals** 15% NEFE HCL dropping 240 7/8" RCN ball sealers. AIR=10 bpm @ 1695 psi. ISIP= vacuum. **After WO: 88 bopd, 232 bwpd, & 14 Mcfgpd.**
11-Jan-97 Change out rod pump.
05-May-97 Tagged fill @ 3357' (83'). Did not Clean out.
18-Jun-98 Changed out 79 jts 2 7/8" tbg, 33- 3/4" rod boxes, 43-7/8" rod boxes, 40-1" rod boxes, & rod pump.
24-Mar-99 Changed out 10 - 3/4" rods. Tagged fill @ 3312' (127').
04-Oct-99 Changed out MA. **Opened Langlie Mattix and downhole commingled with Jalmat zone.**
02-Dec-03 POOH w/ rods, pump, & tubing. RIH w/ 4 3/4" bit, 6 - 3 1/2" drill collars on 2 7/8" work string. Tagged fill at 3267', cleaned out to 3436' - recovered frac sand; drilled to 3436' - recoved hard plastic & ball sealers. Drilled cement and CIBP. Cleaned out to 3707'. RIH with 2 7/8" tubing, pump, and rods. Placed well on production.
24-Jan-04 POOH with one rod.Pump 75 bbls 2% KCl water w/surfactant 122. Hung well, pumped and load well w/10 bbls produced water. PWOP. Well was trashed up.
22-Mar-04 POOH w/Rods parted 126th 3/4"r od body break flshed and repaired & returned pump. Put well back on Prod.
29-Jun-05 POOH w/ rods & pump. Tagged at 3693, 14' of fill. Did not cleaned out. Laid down 5 joints due to pitting. PWOP.
28-Dec-09 POOH with rod (parted @ ON/Off Tool). Pooh with tubing and plunger. RIH with tubing, plunger and rods. PWOP.
19-Feb-10 POOH with parted 111th - 3/4" (body break) rods & pump. Ran Pessure Gradient every 500', tagged at 3687'. Hydrotest tubing to 7000#. RIH with pump and rods. PW
28-Nov-11 POOH with parted 90th 7/8" (body break) rods pump & tubing. Ran Pessure Gradient every 500', **tagged at 3694'.** Hydrotest tubing
05-Jan-12 POOH with parted #3 K-Bar, fished all K-Bars & pump. Laid down with 12 K-Bars due to pitting. POOH with tubing. Ran pressure survey, tagged at 3,681'. RIH with t pump and rods.PWOP.
01-Jun-12 POOH with parted 111th - 3/4" (body break) rods & pump. RIH with pump and rods. PWOP.
19-Feb-13 POOH w/ rods, body break shoulder, 3/4" rod. POOH w/ rods. RIH w/ plunger & rods, replaced 10- 3/4", 20- 7/8" & 35- 1" couplings. PWOP.

PREPARED BY: Larry S. Adams | Domingo Carrizales | UPDATED: 14-Jun-12

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME	Cooper Jal Unit				WELL NO	420
STATUS:	Active	Oil			API#	30-025-33458
LOCATION:	2310 FNL & 2310 FEL, Sec 24, T - 24S, R - 36E; Lea County, New Mexico					
SPUD DATE:	07/16/96	TD	3824	KB	3,329'	DF
INT. COMP. DATE:	08/07/96	PBTD	3732	GL	3,313'	

GEOLOGICAL DATA

ELECTRIC LOGS: PE,CNL,LDT,ML, SFL, BCS, & GR (7-25-96 Schlumberger)
GR-CCL from 3730 - 2730' (8-1-96 Schlumberger)

CORES, DST'S or MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS:

Tansil @ 2675' Yates @ 3025' 7-Rivers @ 3248' Queen @ 3610'

CASING PROFILE

SURF.	8 5/8" - 24#, WC-50, ST&C set@ 432'. Cmt'd w/250 sxs - circ cmt to surface.
PROD.	5 1/2" - 15.5#, WC-50, LT&C set@ 3825' Cmt'd w/1150 sxs - circ cmt to surface.
LINER:	None

CURRENT PERFORATION DATA

CSG PERFS: OPEN HOLE:

01-Aug-96 **Perf'd Jal** f/3050'-58', 66'-90', 3106'-3111', 50'-56', 91'-94', 3230'-34', 3294'-3304', & 3358'-62' w/ 4 spf (232 holes)
05-Oct-05 **Perf'd K. M.** f/ 3747'-52', 3730'-38', 3720'-26', 3702'-10', 3684'-86', 3672'-82', 3652'-55', 3634'-36', 3612'-18' 3581'-83', 26'-40', 05'-15', 3476'-86'; **Perf'd Jal** f/3280'-83', 32'-54', 25'-44', 3130'-42' & 3024'-46', 145 holes.
12-Oct-05 **Perf'd 7-Rivers** f/ 3456'-61', 3443'-48', & 3434'-38', 12 feet, 2 JHPF.
16-Sep-06 **Ran GRN/CCL. Perf'd 7-Rivers/Jal** f/ 3291'-3300', 3 JSPF; **Perf'd Yates/Jal** f/ 3160'-66', & 3106'-16' 3 JSPF.

TUBING DETAIL — 5/16/2012

Length		Detail
3440	111	3 1/2" J-55, 9.3# Supermax Tbg
8	1	3 1/2" J-55, Supermax Sub
34	1	3 3/4" Stator
31	1	3 1/2" J-55, Supermax Tbg
3	1	2 7/8" x 5 1/2" TAC
3516		

ROD DETAIL — 5/16/2012

Length		Detail
12	1	1 1/4" x 16' Polish Rod w/ 7/8" Pin
0	1	1 1/4" x 1 1/2" x 14' liner
8	1	8'- 1" pony rod
3425	137	1" steel rods
34	1	1 1/2" Rotor
3479		

WELL HISTORY SUMMARY

01-Aug-96 Ran GR-CCL from 3730 -2730'. **Perf'd** f/ 3050'-56', 3066'-90', 3106'-11', 50'-56', 91'-94', 3230'-34', 3294'-3304', 3358'-62', w/ 4 spf (232 holes). Frac w/ 51,000 gals 30# borate carrying 258,000#'s 12/20 brady sand. **Pump tst 24 hrs - 36 bopd, 253 bwpd, 33 Mcfgpd.**
04-Jun-97 Converted well from PC pump system to rod pump system.
30-Sep-98 L/D production equipment. Set CIBP @ 3000'. Displaced csg with packer fluid & tst to 500 psi. **Well TA'd 10-1-98.**
14-Nov-03 RIH w/ Sand Line Drill Bailer & tagged CIBP @ 2994'. Drilled out & **pushed down CIBP to 3690'.** RIH w/ 108 - 2 7/8" tubing string. RIH with 2 1/2" x 2 1/4" x 4' plunger and 135 steel rods. PWOP. **Well test: 28 BOPD, 232 BWPD, & 12 MCFPD.**
15-Apr-04 POOH w/ rods, pump, & tubing. Hydrotest tubing in hole to 7,000#, found hole on the 74th joint. RIH with pump and rods. PWOP.
12-Jul-04 POOH w/ rods & pump. Scanalog tbg out of hole. Found 1 yellow, 26 blue, 60 green, & 21 red due to pitting. RIH w/Super max (60) tbg. Shut in due to defective collars. Finish running in hole w/ Supermax tbg.Tagged fill @ 3670'. RIH w/ pump & rods. PWOP.
30-Sep-05 POOH w/ prod string. RIH w/ 4 3/4" bit & 10 - 3 1/2" DCs on 2 7/8" tbg, tagged at 3668'. **C/O to 3782',** recovered scale, cast iron **Perf'd L. M.** f/ 3612'-18', 3581'-83', 26'-40', 05'-15', 3476'-86'; **JAL** f/ 3280'-83',50'-54', 35'-44', 3130'-42' & 3024'-46', 145 holes. Spot and acidized Langlie Mattix (3476'-3747') w/ 3500 gals 15% NEFE. Diverted with 150 BSs, excellent ball action (Pmax= 6500#). Frac'd LM (3476'-3747') w/ 35K gals XL gel & 81,500# 16/30 mesh sand. Pavg= 2450# @ 31 bpm. ISIP= 1532#. Did not pump 6 ppg. Spot and acidized Jalmat (3050'-3362') with 1000 gals NEFE 15% acid. Frac'd Jalmat with 29K gals 30# XL gel plus 65,000# 16/30 mesh sand. Pmax= 2075# @ 30 bpm ISIP= 1484#. POOH with frac packers. Cleaned out with notch collar to 3784'. Perf'd 7-R f/ 3458'-61', 3443'-48', and 3434'-38', 12 feet, 2 JHPF. RIH with 2 7/8" super max tubing, pump and rods. PWOP.
26-Oct-05 POOH w/ rods & stuck pump. POOH w/ tubing. RIH with tubing plunger and rods.
30-May-05 Replaced parted 106th - 3/4" rod (body part). POOH with rods and plunger. RIH with plunger and rods. PWOP.
20-Jul-06 POOH with parted 114 - 3/4" (body break). Replaced rod. PWOP.
7-Aug-06 POOH w/ Plunger & Standing Valve. Plunger had severe scaring. RIH w/ 3 additional jts.**Tagged possible fish @ 3694'.** Attempt to screw onto fish, twice - failed. RIH with production string. PWOP.
9-Sep-06 POOH w/rods, pump, & tbg. RIH w/4 3/4" cut-rite shoe & wash pipe. Tagged fish @ 3595' Recovered fish (2 7/8" OEMA). RIH w/ 4 3/4" bit - tagged fill @ 3636'. **C/O to 3696'** - encountered junk. **Top of Junk @ 3690'.** Recovered frac sand & scale. **Ran GRN/CCL. Perf'd 7-Rivers/Jal** f/ **3291'-3300', 3 JSPF; Perf'd Yates/Jal** f/ **3160'-66', & 3106'-16' 3 JSPF.** RIH & set PKR @ 2965'. Foam CO2 Acid Frac w/5000 gals 15% NEFE HCl acid plus 78 Tons CO2 @ 10.2 bpm. Pave= 2107'. Flowed back, recovered water, CO2 & oil (12% - 15%). Hydrotest prod tbg in hole, plunger & rods. **After W/O Test: 17 BOPD, 31 MCF & 428 BWPD.**
06-Jan-10 POOH w/ rods & plunger. **Tagged fill @ 3667'.** POOH w/ tubing. Hydrotest tubing in hole to 7000#. RIH w/ plunger & rods. PWOP.
30-Sep-10 POOH with rods and plunger. Laid down 28 - 3/4" rods and 16 - 1 1/4" K-Bars. RIH with plunger and rods. PWOP.
24-Jun-11 Fished polished rod, rods and plunger. RIH with new plunger and rods. PWOP.
29-Sep-11 Replaced parted parted polished rod. E=Re-spaced well. PWOP.
01-Feb-12 POOH laying rod string and plunger. Ran Press survey, tagged at 3,695'. RIH with tubing, rotor and new rods. PWOP.
14-May-12 POOH with rods and rotor. POOH with tubing, joint #111 was parted. Recover fish (28' of 34' Stator). Recovered the rest of fish. Hydrotest tubing in hole to 7,000# - good. Ran in hole rotor on rods. PWOP.

PREPARED BY:	Larry S. Adams	D. Carrizales	UPDATED:	23-May-12

Field: **Cooper Jal Unit**

	Location:
Footage:	980 FNL & 2280 FWL
Section:	Sec. 24, T-24S, R-36E
Block:	
Survey:	
County:	Lea, New Mexico
Lat:	
Long:	
	Elevations:
GL:	3,322'
KB:	3,333.5'
KB Calc:	11.5'
ck w/log?	N/A

Date	History
24-Sep-13	Ran CBL & CNL
8-Oct-08	Selectively perforate 3279' - 3719' (582 holes) & acid frac w/ 7200 gal 15% HCl + 93 tons CO2 + 72000# RS.
29-Oct-08	Set RBP at 3264', selectively perforate 3022' - 3241' (358 holes) & acid frac w/ w/ 9000 gal 15% HCl + 114 tons CO2 + 150000# RS. Unset RBP.
1-Jan-09	Tag PBTD w/ WL and take pressure readings every 500'.
22-Mar-10	Set RBP at 3262' & frac perfs 3022' - 3241' w/ 93,174 Mscf N2, 194,000# sand & 200 BS. Recover RBP. CO 3713' - 3722' & RWTP.
24-Sep-10	Body part - 108th rod (3/4"). Replaced 6 K-Bars & several rod boxes.
2-Nov-10	Body part - 108th rod (3/4").
23-Feb-11	Body part - 93rd rod (3/4").
13-Apr-11	Body part - 112th rod (3/4").
21-May-11	Parted polish rod.
30-May-12	Body part due to pitting - 108th rod (3/4").
9-Jul-12	CO 3635' - 3648' & torqued up.
22-Jul-13	Body part at 1475' (7/8"). R&R pump & replace 1-3/4" rod + 15-7/8" box.
13-Sep-13	Rod Part.

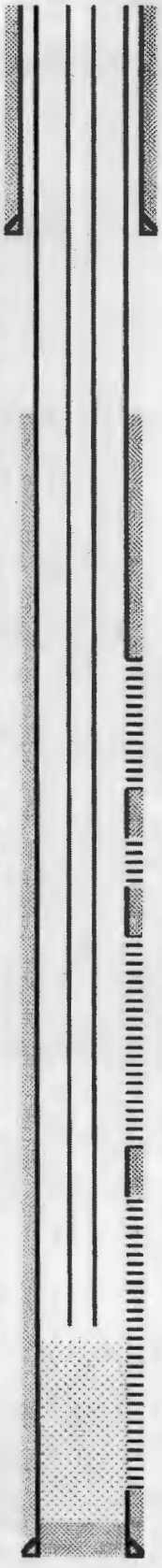
Joints	Tubing Detail (top to bottom) Description	Footage	Depth
98	2-7/8" 6.5#, J-55 Super Max	3,100	3,100
1	2-7/8" x 5-1/2" TAC	4	3,104
13	2-7/8" 6.5#, J-55 Super Max	410	3,514
1	2-7/8" Super Max Blast Joint	31	3,545
1	1 - 2-7/8" SN	1	3,546
1	2-1/2" Cavins Desander	20	3,566
1	2-7/8" Perf Sub	4	3,570
1	2-7/8" Mud Anchor	60	3,630

Rods	Rod Detail (top to bottom) Description	Footage	Depth
1	26' x 1-1/4" polish rod w/ 7/8" pin	22.00	22.00
1	1-1/4" x 1-1/2" x 14' liner	0.00	22.00
2	2' & 8' pony rods	10.00	32.00
39	7/8" KD rods	975.00	1,007.00
71	3/4" KD rods	1,775.00	2,782.00
30	1-1/2" K-Bars	750.00	3,532.00
1	On/Off tool	1.00	3,533.00
1	2-1/2" x 2" x 20' RWBC pump	20.00	3,553.00
	1-1/4" x 1' Gas Seperator	0.00	3,553.00

Pumping Unit:
Updated: 12/18/13 MCB

CJU #511

Wellbore Diagram



PBTD 3723'
TD 3773'

Reservoir: Cooper Jal

Well ID Info:	CJU #511
API No:	30-025-39104
Spud Date:	9/10/2008

Hole Size: 12-1/4"
Surface Csg: 8-5/8" - 24#, LS42 ST&C
Set @ 1185'
Cement - Lead: 270 sx "C" + 2% CaCl2 + 3# Gilsonite + 0.25% R-38
Tail: 250 sx "C" + 2% CaCl2 + 3# Gilsonite + 0.25% R-38
Circ: Yes (124 Sacks)
TOC: Surface

TOC: 1520' (CBL 9/24/2008)

Yates @ 3022'

3022'-3054'
3082'-3088'
3098'-3118'
3126'-3142'
3146'-3160'
3164'-3200'
3202'-3234'
3238'-3241'

7-R @ 3279'

3279'-3293'
3306'-3310'
3324'-3326'

3346'-3353'
3366'-3376'
3390'-3392'
3398'-3402'
3424'-3426'
3434'-3442'
3448'-3450'
3456'-3465'
3468'-3478'
3480'-3482'
3490'-3507'
3515'-3530'
3532'-3534'

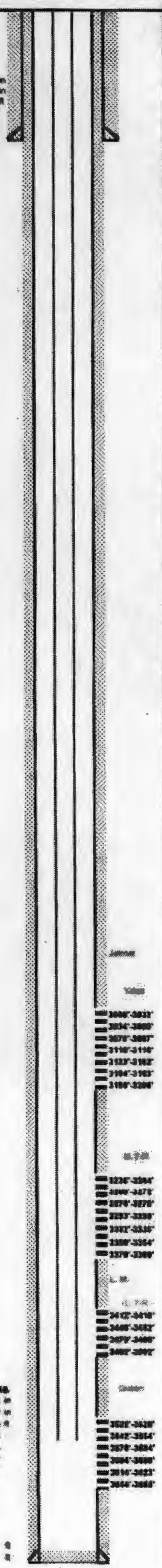
Queen @ 3541'

3541'-3544'
3552'-3556'
3563'-3567'
3572'-3585'
3592'-3601'
3609'-3617'
3626'-3628'
3631'-3636'
3640'-3642'
3649'-3652'
3655'-3657'
3659'-3661'
3666'-3670'
3674'-3689'
3696'-3698'
3700'-3702'
3709'-3714'
3717'-3719'

Hole Size: 7-7/8"
Prod. Csg: 5-1/2" - 15.5# J-55, LT&C
Set @ 3763'
Cement - Lead: 120 sx 50/50 Poz C w/ 10% Gel + 5% Salt
Tail: 300 sx 50/50 Poz C w/ 2% Gel + 5% Salt
Circ: No

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



Surface Csg.
Hole Size: 12 1/4 in
Csg. Size: 8 5/8 in
Set @: 1170 ft
Sxs Cmt: 500
Circ: Yes
TOC @: surf
TOC by: circ

Production Csg.
Hole Size: 7 7/8 in
Csg. Size: 5 1/2 in
Set @: 3700 ft
Sxs Cmt: 625
Circ: no
TOC @: 487
TOC by: circ

PBTD: 3688' ft
TD: 3745' ft

LEASE NAME	Cooper Jal Unit			WELL NO	512
STATUS	Active	Oil		API#	30-025-39103
LOCATION	1800 FNL & 300FEL, Sec 24, Unit J, T - 24-S, R - 36-E; Lea County, New Mexico				
SPUD DATE	09/23/08	TD	3745'	KB	3311'
INT. COMP. DATE		PBTD	3688'	GL	3299'

DF: 3310 KB: 12

GEOLOGICAL DATA

ELECTRIC LOGS:
CNL Gamma Ray / CCL Log- from 3688' - 1150' (10-7-08 Gray Wireline)
Radial Cement Bond, Gamma Ray / CCL Log from 3688' - 250' (10-7-08 Gray Wireline)

CORES, DST'S, or MUD LOGS:

HYDROCARBON BEARING ZONE DEPTH TOPS:

Tansill @ 2805' | Yates @ 2878' | Upper 7 Rivers @ 3228' | Lower 7 Rivers @ 3387' | Queen @ 3580'

CASING PROFILE

SURF. 8 5/8" - 24#, LS42, LT&C set @ 1150'. Cmt'd w/500 sxs Class C w/ 2% CaCl - circ'd w/ 94 sx cmt to surface
PROD. 5 1/2" - 15.5#, Grade J55, LT&C set@ 3700'. Cmt'd w/ 625 sxs Class H w/ 5% Salt + 300 sxs Class H w/ 5% Salt -
LINER None — did not circ cmt to surf

CURRENT PERFORATION DATA

CSG. PERFS: — OPEN HOLE:
06-Oct-08 Perf'd (L. M.) (Q) # 3644-55', 14'-23', 3594'-96', 78'-84', 42'-54', & 22'-28', L. M. (7-R) # 3492'-3502', 70'-80', 46'-52', 12'-18', 3376'-80', 50'-54', 3332'-38', 3293'-3298', 76'-78', 60'-72', & 3236'-3244'; Jal (Y) # 3186'-3206', 3164'-3183', 3127'-3162', 3110'-3110', 3076'-3197', 3034'-3069' & 3000'-3032, 293 ft, 414 (0.45") holes
Note: Q & 7-Rivers @ 2 spf, Yates @ 1 spf, 120 degrees.

TUBING DETAIL 10/7/08

Length (ft)		Detail
0		KB
2929	93	2 7/8" 6.5#, J-55, Super Max tbg.
4	1	2 7/8" x 5 1/2" TAC
598	19	2 7/8" 6.5#, J-55, Super Max tbg.
1	1	2 7/8" SN
4	1	2 7/8" Perf Sub
15	1	2 7/8" OPMA
3551		

ROD DETAIL 6/14/12

Length (ft)		Detail
22	1	26' x 1 1/4" polish rod w/ 7/8" Pin Spray Metal
0	1	1 1/4" x 1 1/2" x 14' Liner
1325	53	7/8" New KD Rods rods
1575	63	3/4" New KD Rods rods
575	23	1 1/4" weight Bars
2	1	1" Guid Sub
1	1	2 1/2" X 2" X 20' RWBC pump
20	1	1 1/4" x 1 1/2" X 20' GA De-Sander
3520		

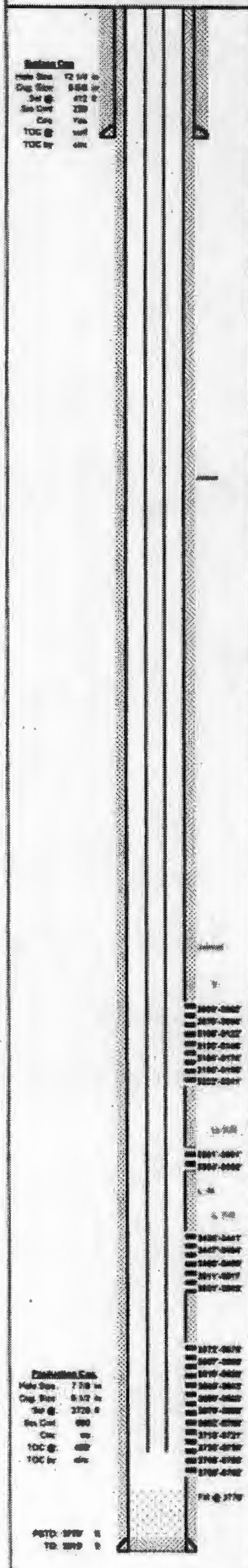
WELL HISTORY SUMMARY

15-Oct-08 Ran Compsated Neutron Log (9/24/08) from 3724' (PBTD) to 1150'. Perf'd (L. M.) (Q) # 3644'-55', 14'-23', 3594'-96', 78'-84', 42'-54', & 22'-28', (L. M.) (7-R) # 3492'-3502', 70'-80', 43'-52', 12'-18', 3376'-3380', 50'-54', 3332'-38', 3293'-3298', 76'-78', 60'-72', & 3236'-3244'. Jalmat (Y) # 3186'-3206', 3164'-3183', 23'-62', 3110'-3110', 3076'-3097', 34'-69 & 3000'-3032, 293 ft, 414 (0.45") holes. Note: Q & 7-Rivers @ 2 spf, Y. @ 1 spf. 120 degrees. Foam Acid Frac'd L. M. w/ 13,000 gals 15% NEFE acid + 170 Tons CO2 Diverted w/ 12,500# rock salt. AIR= 12 bpm. Pavg= 2700#. ISIP= 380#. Well Flowed for 6 hours. kill wells. RIH with production string. PWOP.
18-Dec-08 POOH w/prod string. RIH w/RBP & PKR. Set RBP @ 3228' & Pkr @ 3225'. Test to 1000#. POOH w/PKR. PWOP.
10-Jan-09 POOH with production string. Stimulated down 5 1/2" casing with 154,677# sand and 1.27 MMSCF nitrogen. Dropped 85 - 7/8" frac balls. Pavg= 2200 psig. ISIP= 1904 psig. Next day SITP= 450 psig. Opened well, bled down to 25 psig in 5 hrs. No fluid recovery. Next day. Slight blow, pumped 300 bbls 2% KCL. RIH w/ 4 3/4" bit, tagged @ 3145'. Pumped 400 bbls 2% KCl - no returns. Rigged up AIR Unit - cleaned # 3222' to top of RBP. RIH w/ prod string. PWOP.
01-Sep-09 POOH w/rods (parted @ Pull Rod), pump & tbg. Tagged @ 3208'. Tagged sand @ 3208'; circ'd clean w/Foam Air. Recovered frac sand & ball sealers. POOH with RBP. RIH with Notched Collar, tagged @ 3688' (PBTD). Hydrotest tubing in hole to 7000#. PWOP.
06-Oct-09 POOH w/ rods & pump. Tagged bottom 3,652'. POOH w/ tubing. Hydrotest tubing to 7000#. RIH w/ pump & rods. PWOP.
16-Feb-10 POOH w/ rods, pump and tubing. Ran Pressure Gradient Test taking reading every 500'. Tagged at 3,643'. Hydrotest tubing to 7000# - found split on 101th and burst 7 joints. RIH with pump & rods. Replaced 83 - 3/4" and 34 - 7/8" boxes due to pitting. PWOP.
08-Mar-11 POOH w/ rods and pump. GIH w/ repaired pump and rods. seat pump, check space hang well on. well pumping ok.
07-Jun-12 POOH with parted 108th - 3/4" rod (body break). POOH with rods and pump. PWOP.
14-Jun-12 POOH with parted 98th - 3/4" rod (body break). Laid bottom 20 rods due to being flat. POOH with rods and pump. PWOP.

PREPARED BY: Jim Kidd [illegible] UPDATED: 26-Jun-12

WELLBORE SCHEMATIC AND HISTORY

CURRENT COMPLETION SCHEMATIC



LEASE NAME	Cooper Jal Unit			WELL NO.	914
STATUS	Active	Oil		API#	30-025-39102
LOCATION	[illegible] Lea County, New Mexico				
SPUD DATE	[illegible]	TD	[illegible]	[illegible]	[illegible]
INT. COMP. DATE		PBTD	[illegible]	[illegible]	[illegible]

GEOLOGICAL DATA

ELECTRIC LOGS

CNL- from 3780' - 1150' (10-20-08) Gray Wireline

Cement Top @ 412 Log from 3779' - 22' (10-20-08) Gray Wireline

HYDROCARBON BEARING ZONE DEPTH TOPS

Tansill @ [illegible] Yates @ [illegible] Upper 7 Rivers @ [illegible] Lower 7 Rivers @ [illegible] Queen @ [illegible]

CASING PROFILE

SURF. 8 5/8" - 24#, Grade 55, LT&C set @ 412'. Cmt'd w/[illegible] sxs Class C w/ 2% CaCl - circ'd [illegible] sx cmt to surface.

PROD. 5 1/2" - 15.5#, Grade 55, LT&C set @ 3729'. Cmt'd w/ [illegible] sxs Class H w/ 5% Salt + [illegible] sxs Class H w/ 5% Salt - did not circ cmt to surface.

LINER None

CURRENT PERFORATION DATA

CSG. PERFS OPEN HOLE :

08-Oct-08 Perf'd (L. M.) (Q) @ 3758-62', 43-53', 20-30', 18-21', 3692-3708', 3679-88', 59-62', 47-43', 19-26', 3687-90' & 3572-75'
Perf'd (L. M.) 7-Rivers, @ 3531'-43', 11-17', 3480-88', 47-54', 36-41', 3354-62', & 3291-3300'.
Perf'd Jalmat (Y) @ 3222-3241', 3186-3199', 54-74', 30-46', 08-22', 3070-3084' & 3030-3062', 262', 380 (0.45") holes.
Note: Q & 7-R @ 2 spf, Y @ 1 spf, 120 degrees.

09-Dec-09 Ran GR/CCL log. Perf'd 7-Rivers @ 3354-3362', & 3291'-3301', 2 spf Perf'd Yates @ 3222-3241', 3186-3199', 54-74', 30-46', 08-22', 3070-3084', & 3030-3062', 262', 380 (0.45") holes. Note: Q & 7-R @ 2 spf, Yates @ 1 spf, 120 degrees.

TUBING DETAIL [illegible] **ROD DETAIL** [illegible]

Length (ft)		Detail	Length (ft)		Detail
8		KB	22	1	26' x 1 1/4" polish rod w/ 7/8" Pin Spray Metal
2999	[illegible]	2 7/8" 6.5#, J-55, Super Max tbg	8	1	1 1/4" x 1 1/2" x 14' Liner
4	1	2 7/8" x 5 1/2" TAC	2	1	2' - 7/8" pony rods
730	23	2 7/8" 6.5#, J-55, Super Max tbg	1175	47	7/8" New KD Rods rods
31	1	2 7/8" x 3 1/2" x 31' Blast Jt	[illegible]	77	7/8" New KD Rods rods
1	1	2 7/8" x 1.10' SN	[illegible]	20	7/8" New KD Rods rods
4	1	2 7/8" Perf Sub	1	1	on/off Tool
63	1	2 7/8" BPMA	[illegible]	1	2 1/2" x 1 1/2" X 20' pump w/ HVR
3738			[illegible]	1	1 1/4" x 1 1/2" x 20' Gas Anchor De-Sander
			[illegible]		

WELL HISTORY SUMMARY

08-Oct-08 Ran Compensated Neutron Log (9/24/08) from 3724' (PBTD) to 1150'. Perf'd (L. M.) (Q) @ 3758-62', 43-53', 30-37', 18-21', 3692-3708', 3679-88', 59-62', 47-43', 19-26', 87-90', & 3572-75'. Perf'd (L.M.) (7-Rivers) @ 3531-3543', 11-17', 3480-3488', 47-54', 36-41', 3354-3362', & 3291'-3301'. Perf'd Jalmat (Yates) @ 3222-3241', 3186-3199', 54-74', 30-46', 08-22', 3070-3084', & 3030-3062', 262', 380 (0.45") holes. Note: Q & 7-R @ 2 spf, Y @ 1 spf, 120 degrees. Foam Acid Frac'd Lanto Matrix with 10,500 gals 15% NEFE acid plus 130 Tons CO2. Diverted with 12,400# rock salt. AIR= 13 bpm. Pavg= 3180#, ISIP= 500#. Well Flowed - 3% to 12% oil cut. RIH with tubing, pump and rods. PWOP.

9-Dec-09 POOH with rods, pump and tubing. RIH with WL plug and PKR. Set RBP @ 3417' and PKR @ 3385'. Test to 1000# - leaked off 50# in 5 mins. Reset RBP @ 3414' - test to 1000# (Okay). Ran GR/CCL log. Perf'd 7-Rivers @ 3354'-3362', & 3291'-3301', 2 spf. Perf'd Yates @ 3222-3241', 3186-3199' 3154-3174', 3130-3146', 3108-3122', 3070-3084', & 3030-3062'. 1 spf, 120 degree. Frac'd Yates & 7-Rivers down casing w/ 175,000# sand, total Nitrogen= 1.5 MMSCF. AIR= 28 bpm. Nitro Rate= 53 bpm Pavg= 2585 psig. ISIP= 1500 psig. Flowed back - recovered 83 bbls. (3% oil cut) fluid in 7 hrs. Next day: SITP= 800#. Flowed 112 bbls (30% oil cut) in 10 hours. Third Day: recovered 138 bbls (30% oil cut) in 10 hrs. Fourth Day: recovered 52 bbls (30% oil cut) in 5 hrs. Next day SITP= 540#. RIH w/ Rat Tool, tagged sand at 3314'. POOH w/ RBP. RIH with 4 3/4" bit, tagged fill at 3751'. C/ to PBTD @ 3779'. Hydrotest tubing to 7000#. RIH w/ pump & rods. PWOP.
Test Before: 7 BOPD, 38 BWPD and 7 MCFPD. Test After: 70 BOPD, 179 BWPD and 76 MCFPD.

3-Mar-10 POOH with rods, pump and tubing. Stripped out of hole with rods & pump. RIH with tubing, pump and rods. PWOP.

PREPARED BY: Jim Kidd Operator Companies UPDATED: 24-Mar-10

Geological Description

Yates, Seven Rivers and Queen Formations, Artesia Group

Cooper Jal Unit #121

Geologic parameters

Average Depth:	Top of Yates formation averages approximately 3000' subsurface.
Average Thickness:	Gross thickness from top Yates to base Queen is approximately 700-800'. Net porous intervals vary from 30 to 100' in several horizons.
Reservoir and trap:	Reservoir units in the Yates, Seven Rivers and Queen formations are arkosic sandstones with variable amounts of dolomite and anhydrite cements. Trapping is a combination of structure over low amplitude anticlines and stratigraphic pinchouts of porous units. Porosity varies laterally and vertically due to occlusion by anhydritic and calcareous cements.
Reservoir Quality:	Porosity: 4%-18%; Permeability: 0.5mD to 100mD.

Advantages for water injection:

1) This well is a corner well of a 5-spot, 20 acre pattern which will have a producer in the center. The 20 acre pattern is an ideal size to achieve an efficient recovery for this type of water flood.

2) The injection interval is deep below the surface, allowing for generally low surface water injection pressures because of the great hydrostatic fluid column.

3) To our knowledge, there is no evidence of any faults to the surface in this area. It can be expected that the impermeable Salado and Castile salt and anhydrite layers between the Rustler and Yates formations will provide a sufficient barrier to any fluid migration to potential underground sources of drinking water. The attached page from the New Mexico Office of the State Engineer shows very few water wells within the ½-mile radius. The water wells are drawing from an aquifer in the 140-180 foot depth and the proposed injector is sufficiently cased and cemented in order to isolate the well from this fresh water zone.

4) The Yates, 7-Rivers, and Queen formations are sufficiently porous and permeable to allow for a high volume of water injection capacity without approaching or exceeding fracture pressures. A 15% HCL acid stimulation using up to 10,000 gallons over the entire perforated and open hole injection intervals is planned prior to initiating water injection.

Planned maximum injection rate: 2,000 BWPD

Planned maximum injection pressure: 1,200 psi

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Well Drill Dates & Depths)

(R=POD has been replaced and no longer serves this file, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters) (in feet)

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Cnty	POD Number	Code	Grant	Source	q q q 6416	4	Sec	Twn	Rng	X	Y	Distance	Start Date	Finish Date	Depth Well	Depth Water
CP 01174		MON	0	LE	CP 01174 POD1				2	4	2	24	24S 36E	668517	3564680	0				
				LE	CP 01174 POD2				2	4	2	24	24S 36E	668517	3564680	0				
				LE	CP 01174 POD3				2	4	2	24	24S 36E	668517	3564680	0				
				LE	CP 01174 POD4				2	4	2	24	24S 36E	668517	3564680	0				
CP 00103		PLS	3	LE	CP 00103				3	4	4	13	24S 36E	668366	3565227*	567		07/31/1963	152	
CP 01188		MON	0	LE	CP 01188 POD1				2	1	4	24	24S 36E	668131	3564233	590				
				LE	CP 01188 POD2				3	2	4	24	24S 36E	668359	3564067	632				
CP 00521		DOL	3	LE	CP 00521					2	2	23	24S 36E	666865	3564903*	1666				
CP 00564		DOL	3	LE	CP 00564			Shallow		2	2	23	24S 36E	666865	3564903*	1666	03/07/1977	03/10/1977	180	160
CP 01132		GEO	0	LE	CP 01132 POD1				1	3	2	25	24S 36E	668082	3562905	1827				
				LE	CP 01132 POD2				1	2	4	25	24S 36E	668471	3562698	1981				

Monitoring wells

Monitoring wells Checked

— Diversion

— Cooper/No log

— 1980 well / Fred Cooper 165 to 180' / TD 180'

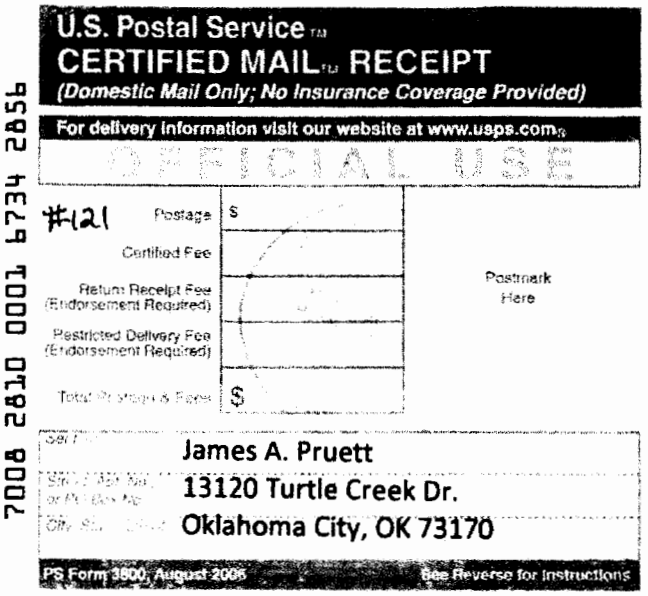
Record Count: 11

UTMNAD83 Radius Search (in meters):

Easting (X): 668517 Northing (Y): 3564680 Radius: 2000

Sorted by: Distance

***UTM location was derived from PLSS - see Help**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13120 Turtle Creek Dr.
Oklahoma City, OK 73170
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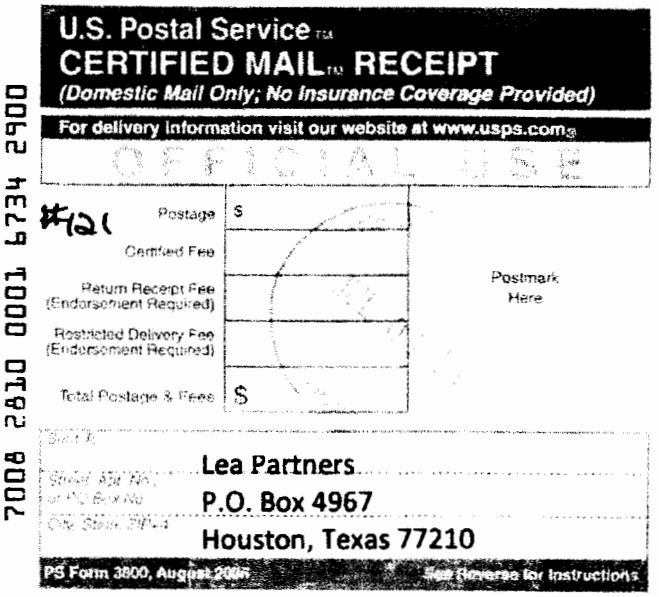
See Reverse for Instructions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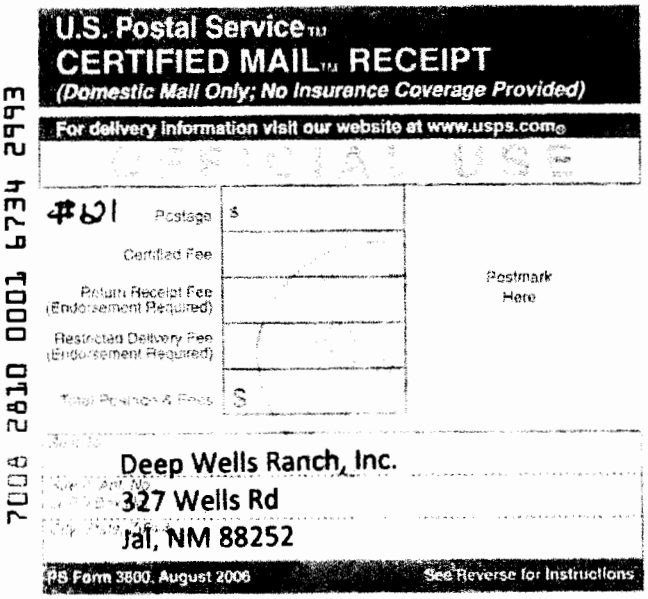
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7008 2810 0001 6734 2993
Deep Wells Ranch, Inc.
327 Wells Rd
Jal, NM 88252
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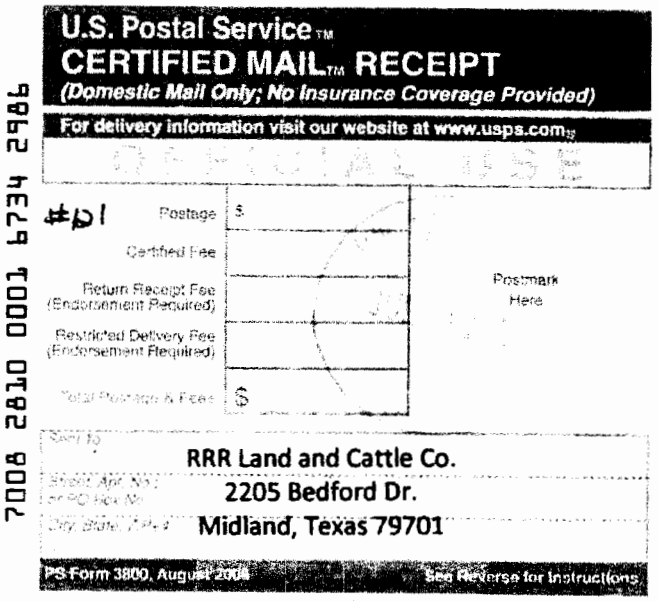
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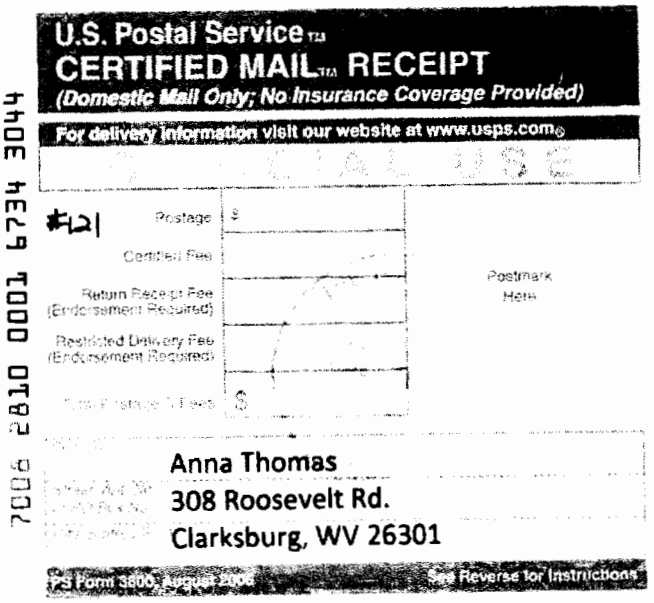
7008 2810 0001 6734 2986
RRR Land and Cattle Co.
2205 Bedford Dr.
Midland, Texas 79701
PS Form 3800, August 2006
See Reverse for Instructions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7008 2810 0001 6734 3044
Anna Thomas
308 Roosevelt Rd.
Clarksburg, WV 26301
PS Form 3800, August 2006
See Reverse for Instructions

Affidavit of Publication

State of New Mexico,
County of Lea.

I, DANIEL RUSSELL
PUBLISHER
of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period

of 1 issue(s).
Beginning with the issue dated
March 06, 2014
and ending with the issue dated
March 06, 2014

PUBLISHER
Sworn and subscribed to before me
this 6th day of
March, 2014

Notary Public

My commission expires
February 28, 2016
(Seal)

OFFICIAL SEAL
YEZENIA CALDERON
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires: 2-28-16

This newspaper is duly qualified to publish legal notices or advertisments within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said publication has been made.

LEGAL NOTICE
March 6, 2014

NOTICE OF APPLICATION FOR FLUID INJECTION WELL PERMIT

APPLICANT: Legacy Reserves Operating LP
P.O. Box 10848
Midland, Texas 79702

CONTACT: Martin Staelens (281) 465-8387

Legacy Reserves Operating LP is applying to the New Mexico Oil Conservation Division for a permit to inject fluid into a formation which is productive of oil and gas. Injection will be into the Yates, 7-Rivers, and Queen zones of the Jal Mat and Langlie Mattix fields. This well is in a water flood and is a corner well in a 5-spot pattern where the central producer is producing oil and water from all three of these zones.

The applicant proposes to inject fluid into the Yates, 7-Rivers, and Queen formations in the Cooper Jal Unit, well number 121. The proposed water injection well is located 990' FNL, 1650' FEL, Section 24, Township 24 South, Range 36 East, approximately 6 miles north of Jal, New Mexico in Lea County. Water will be injected into strata in the subsurface depth interval of 3018' to 3750' for the purpose of secondary oil recovery. The proposed maximum permitted water injection rate is 2,000 barrels of water per day (BWPD) at a maximum pressure of 1,200 pounds per square inch (psi).

LEGAL AUTHORITY: Statewide Rules and Regulations of the New Mexico Oil Conservation Division.

Requests for a public hearing from persons who can show they are adversely affected, or requests for further information concerning any aspect of the application should be submitted in writing, within fifteen days of publication, to the New Mexico Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505.
#28826

67110800 00131968
LEGACY RESERVES OPERATING LP
PO BOX 10848
MIDLAND, TX 79702

5.9 Compliance Issues

C-108 Review Checklist: Received 04/08/14 Add. Request: 06/20/14 Reply Date: 07/01/14 Suspended: — [Ver 13]

PERMIT TYPE: WFX / PMX / SWD Number: 931 Permit Date: 08/28/14 Legacy Permits/Orders: R-4019/4020 R-9983

Well No. 121 Well Name(s): Cooper Jal Unit

API : 30-0 25-09645 Spud Date: 12/08/1948 New or Old: Old (**UIC Class II Primacy 03/07/1982**)

Footages 990 FNL / 1650 FEL Lot — or Unit B Sec 24 Tsp 24S 36E Rge 36E County Lea

General Location: 6 miles North of Jal Pool: Two Jalmat; Tansill-Yates-Seven Rivers 33820 / Langlie Mattix; Seven Rivers-Queen-Grayburg Pool No.: 37240

BLM 100K Map: Jal Operator: Legacy Reserves Operating OGRID: 240974 Contact: Martin Staelens

COMPLIANCE RULE 5.9: Total Wells: 1560 Inactive: 9 Fincl Assur: Yes Compl. Order? No **IS 5.9 OK?** Yes **Date:** 08/28/2014

Inactive wells > 10 for last two months

WELL FILE REVIEWED ✓ Current Status: Active producer - dual completion (DHC-5540)

WELL DIAGRAMS: NEW: Proposed ○ or **RE-ENTER:** Before Conv. ✓ After Conv. ✓ Logs in Imaging: None

Planned Rehab Work to Well: None - use existing perfs and open-hole segment

Well Construction Details:	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Stage Tool	Cement Sx or Cf	Cement Top and Determination Method
Planned — or Existing ✓ Surface (conductor)	17 1/2 / 13 3/8	0 to 30		30	Cir. to surface
Planned — or Existing ✓ Interm/Prod (surface)	12 1/4 / 9 5/8	0 to 1179	None	550	Cir to surface
Planned — or Existing ✓ Interm/Prod	8 5/8 / 7	0 to 3017	None	350	Calculated 685'
Planned — or Existing ✓ Prod/Liner	6 1/8 / 4 1/2	2966 to 3543	None	400	Calculated/TOL at 2966'
Planned — or Existing — Liner	—	—	—	—	—
Planned — or Existing ✓ OH / PERF	Perf Open Hole 3560	3018 to 3750	Inj Length 732		

Injection Stratigraphic Units:	Depths (ft) 3750	Injection or Confining Units	Tops
Adjacent Unit: Litho. Struc. Por.	—	—	—
Confining Unit: Litho. Struc. Por.	—	Tansill	—
Proposed Inj Interval TOP:	3018	Yates - SR	—
Proposed Inj Interval BOTTOM:	3750	Queen	—
Confining Unit: Litho. Struc. Por.	—	Grayburg	—
Adjacent Unit: Litho. Struc. Por.		Capitan Reef	—

Completion/Operation Details:

Drilled TD 3750 PBTD 3750

NEW TD — NEW PBTD —

NEW Open Hole ✓ or NEW Perfs ✓

Tubing Size 2 3/8 in. Inter Coated? Yes

Proposed Packer Depth 2940 ft

Min. Packer Depth 2918 (100-ft limit)

Proposed Max. Surface Press. 1200 psi

Admin. Inj. Press. 1007 (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P ✓ Noticed? NA **BLM Sec Ord** ✓ WIPP ✓ Noticed? NA **SALT/SALADO** T: — B: — **CLIFF HOUSE** NA

FRESH WATER: Aquifer Alluvial / Capitan (below) Max Depth 180' / +3750 ft **HYDRO AFFIRM STATEMENT By Qualified Person** ✓

NMOSE Basin: Capitan **CAPITAN REEF:** thru ○ adj ✓ NA ○ **No. Wells within 1-Mile Radius?** 1 FW Analysis No

Disposal Fluid: Formation Source(s) Yates/SR/Q - Lower GB/ Above, based on Resree Analysis? On file On Lease ✓ Operator Only ○ or Commercial ○

Disposal Int: Inject Rate (Avg/Max BWPD): 800/2000 Protectable Waters? No Source: Historical System: Closed ✓ or Open ○

HC Potential: Producing Interval? — Formerly Producing? — Method: Logs/DST/P&A/Other — 2-Mile Radius Pool Map ✓

Water flood in two zones - already in existance

AOR Wells: 1/2-M Radius Map? Yes Well List? Yes Total No. Wells Penetrating Interval: 31/all Horizontals? 0

Penetrating Wells: No. Active Wells 31 Num Repairs? 0 on which well(s)? (add request) Producers in Unit Diagrams? Yes

Penetrating Wells: No. P&A Wells 0 Num Repairs? 0 on which well(s)? — Diagrams? NA

NOTICE: Newspaper Date 03/06/2014 Mineral Owner Private Surface Owner Private / RRR N. Date 07/01/2014

RULE 26.7(A): Identified Tracts? Yes Affected Persons: Lea Partners / RRR Land & Cattle / Deep Wells Ranch / Anna Thomas N. Date 07/01/2014

Permit Conditions: Issues: None - BLM had protested WFX-888 due to proximity of P&A well

Add Permit Cond: None / pressure to be admin 0.2 psi/ft gradient.

DAILY INACTIVE STATUS REPORT ***Date:*** 8/28/2014

OPERATOR	OGRID	MAX	I/A	BONDING		
Alamo Resources	274841	5	2			
Apache	873	10	3			15-03188 re-entry 8/13
BOPCO	260737	7	4			
Burnett	3080	5	2			
CFM	280554	5	18	9	Eddy and Chaves Counties	
Chevron Mid-Continent	241333	7	1			
Chevron USA	4323	10	7			
CHI	4378	2	2			
Cimarex / Colorado	162683	10	7			
Cimarex Energy Co	215099	5	0			
COG	229137	10	0			25-25518 re-entry 5/13
ConocoPhillips	217817	10	1			
DC Energy	268370	2	5			
Devon	6137	10	5			
Endeavor Resources LP	190595	5	6	1	05-20806	
Endurance	270329	5	4			
EOG	7377	5	0			
Hal J Rasmussen	9809	2	4	4	25-27936, 25-33021,25-07258,25-02541	
KC Resources	122912	2	7	1	15-20421	
Kaiser-Francis	12361	2	2			
Legacy	240974	10	9			
Legend	258894	2	2			
Lime Rock Res 11-A, LP	277558	5	4			
Linn Operating	269324	10	0			
LRE	281994	7	0			
Mack Energy	13837	5	2			25-31114 re-entry 4/13
Manzano	231429	2	3			
Matador	228937	2	2			
Mewbourne	14744	7	5			
Murchison	15363	5	2			
Nadel & Gussman	155615	5	6			
Nadel & Gussman/Heyco	258462	5	3	1	15-22000	
Nearburg	15742	5	2			
Occidental	157984	7	4			
Oxy USA Inc.	16696	10	2			
Oxy LP	192463	7	4			
Paladin	164070	2	2	1	25-03152	
Premier	17985	2	2			
Primal Energy Corp	154303	2	9	5	1 - Eddy County; 4 - Lea County	
Quantum	243874	5	3			
RKI	246289	5	5			
Seely Oil	20497	2	7	1	25-34195	
SM Energy	154903	5	3			
Vanguard	258350	5	4			
Wildcat Energy LLC	209564	2	2			
XTO	5380	10	7			
Yates Petroleum	25575	10	10			

Goetze, Phillip, EMNRD

From: Mindy Cassard <mcassard@legacylp.com>
Sent: Tuesday, July 01, 2014 3:06 PM
To: Goetze, Phillip, EMNRD
Cc: Martin Staelens
Subject: Injection Permit - Cooper Jal Unit #131, API ##30025096450000
Attachments: Supplement documents to complete - 121 convert to inj.pdf; Certified Receipts - convert to inj 121.pdf

Mr. Goetze,

Attached is the additional requested information for the Injection Permit for well #121 Cooper Jal Unit API #30025096450000.

The attached documents include the following:

- Wellbore Diagram for all the offset wells
- Corrected offset well list
- Edited Geological Summary
- List of Active and Inactive water wells from New Mexico Office of State Engineer.
- Certified receipts of notification to offset surface owners

Please feel free to contact Martin Staelens at 281.465.8387 or mstaelens@legacylp.com with any questions or clarification.

Thank you,
Mindy Cassard
Legacy Reserves LP
The Woodlands, Texas
281.465.8387 office