

(July 1992)

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

(Other instructions on reverse side)

OMB NO. 1004-0136
Expires: February 28, 1995

OCD-HOBBS**APPLICATION FOR PERMIT TO DRILL OR DEEPEN****1a. TYPE OF WORK**DRILL ☒DEEPEN ☐**b. TYPE OF WELL**OIL WELL ☒GAS WELL ☐OTHER ☐SINGLE ZONE ☒MULTIPLE ZONE ☐**2. NAME OF OPERATOR**POGO PRODUCING COMPANY (RICHARD WRIGHT 432-685-8140) *<17891>***3. ADDRESS AND TELEPHONE NO.**

P.O. BOX 10340 MIDLAND, TEXAS 79702-7340 (432-685-8100)

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)

At surface

1980' FNL & 990' FEL SECTION 21 T23S-R37E LEA CO. NM

At proposed prod. zone SAME

*Unit H***14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE***

Approximately 12 miles Southeast of Eunice New Mexico

15. DISTANCE FROM PROPOSED*LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. 990'
(Also to nearest drlg. unit line, if any)**16. NO. OF ACRES IN LEASE**

1520

17. NO. OF ACRES ASSIGNED TO THIS WELL

40

18. DISTANCE FROM PROPOSED LOCATION*

TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 200'

19. PROPOSED DEPTH

3700'

20. ROTARY OR CABLE TOOLS

ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

3303' GR.

22. APPROX. DATE WORK WILL START*

WHEN APPROVED

23.**PROPOSED CASING AND CEMENTING PROGRAM***Cuckan Controlled Water Basin*

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
26"	Conductor 20"	NA	40'	Redi-mix cement to surface
12 1/4"	J-55 8 5/8"	24#	1100'	800 Sx. circulate to surface
7 7/8"	J-55 4 1/2"	11.6#	3700'	750 Sx. Est 1000' from surface

1. Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 12 1/4" hole to 1100'. Run and set 1100' of 8 5/8" 24# J-55 ST&C casing. Cement with 800 Sx. of Class "C" cement + 1/2# Flocele/Sx. + 2% CaCl, circulate cement to surface.
3. Drill 7 7/8" hole to 3700'. Run and set 3700' of 4 1/2" 11.6# J-55 ST&C casing. Cement with 750 Sx. of Class "C" cement + additives, estimate top of cement 500' from surface.

Witness Surface Casing

**APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED**

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone, if any. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

Joe T. Janice

TITLE Agent

DATE 03/19/06

(This space for Federal or State office use)

PERMIT NO. _____

APPROVAL DATE: _____

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
CONDITIONS OF APPROVAL IF ANY:

APPROVED BY

/s/ Tony J. Herrell

TITLE

FIELD MANAGER

DATE

MAY 31 2006

*See Instructions On Reverse Side

APPROVAL FOR 1 YEAR

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

DISTRICT I

1625 N. FRENCH DR., HOBBBS, NM 88240

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

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-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-37923	Pool Code 37240	Pool Name LANGLIE MATTIX-7RIVERS, QUEEN, GRAYBURG
Property Code 14908 302650	Property Name C.E. LAMUNYON FEDERAL	Well Number 88
OGRID No. 17891	Operator Name POGO PRODUCING COMPANY	Elevation 3303'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	21	23-S	37-E		1980	NORTH	990	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

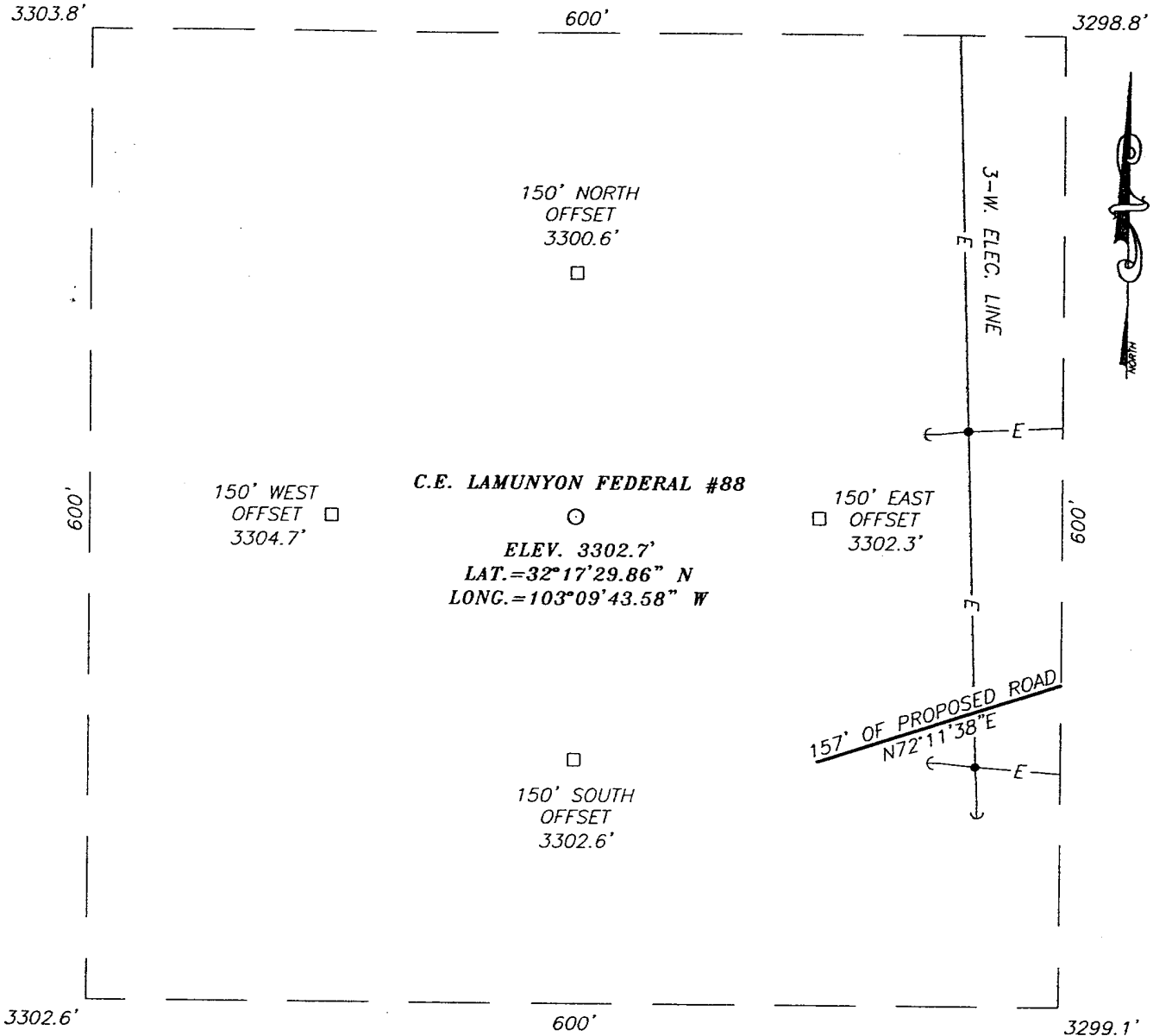
	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Joe T. Janica</i> Signature Date Joe T. Janica 03/19/06 Printed Name Agent</p>
	<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>MARCH 06, 2006</p> <p>Date Surveyed MR</p> <p>Signature & Seal of Professional Surveyor <i>Gary Eidson</i> 3/15/06 06.11.0436</p> <p>Certificate No. GARY EIDSON 12641</p>

GEODETC COORDINATES
NAD 27 NME

Y=471787.4 N
X=861931.2 E

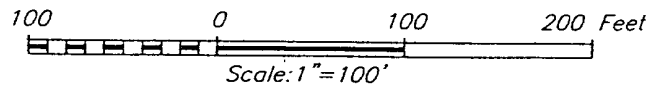
LAT.=32°17'29.86" N
LONG.=103°09'43.58" W

SECTION 21, TOWNSHIP 23 SOUTH, RANGE 37 EAST, N.M.P.M.,
 LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD. E-11
 (TEAGUE SWITCH ROAD) AND ST. HWY. 18, GO
 NORTH APPROX. 1.52 MILES. TURN RIGHT AND GO
 EAST APPROX. 0.3 MILES. TURN RIGHT AND GO
 SOUTHEAST APPROX. 0.53 MILES. TURN LEFT AND
 GO EAST APPROX. 0.23 MILES. TURN LEFT AND
 GO NORTH APPROX. 0.2 MILES. TURN RIGHT AND
 GO NORTHEAST APPROX. 0.25 MILES. TURN RIGHT
 AND GO SOUTHEAST APPROX. 0.53 MILES. TURN
 LEFT AND GO EAST APPROX. 0.37 MILES. TURN
 RIGHT AND GO SOUTH APPROX. 0.2 MILES. VEER
 RIGHT AND GO SOUTH APPROX. 0.25 MILES. THIS
 LOCATION IS APPROX. 425 FEET WEST.



POGO PRODUCING COMPANY

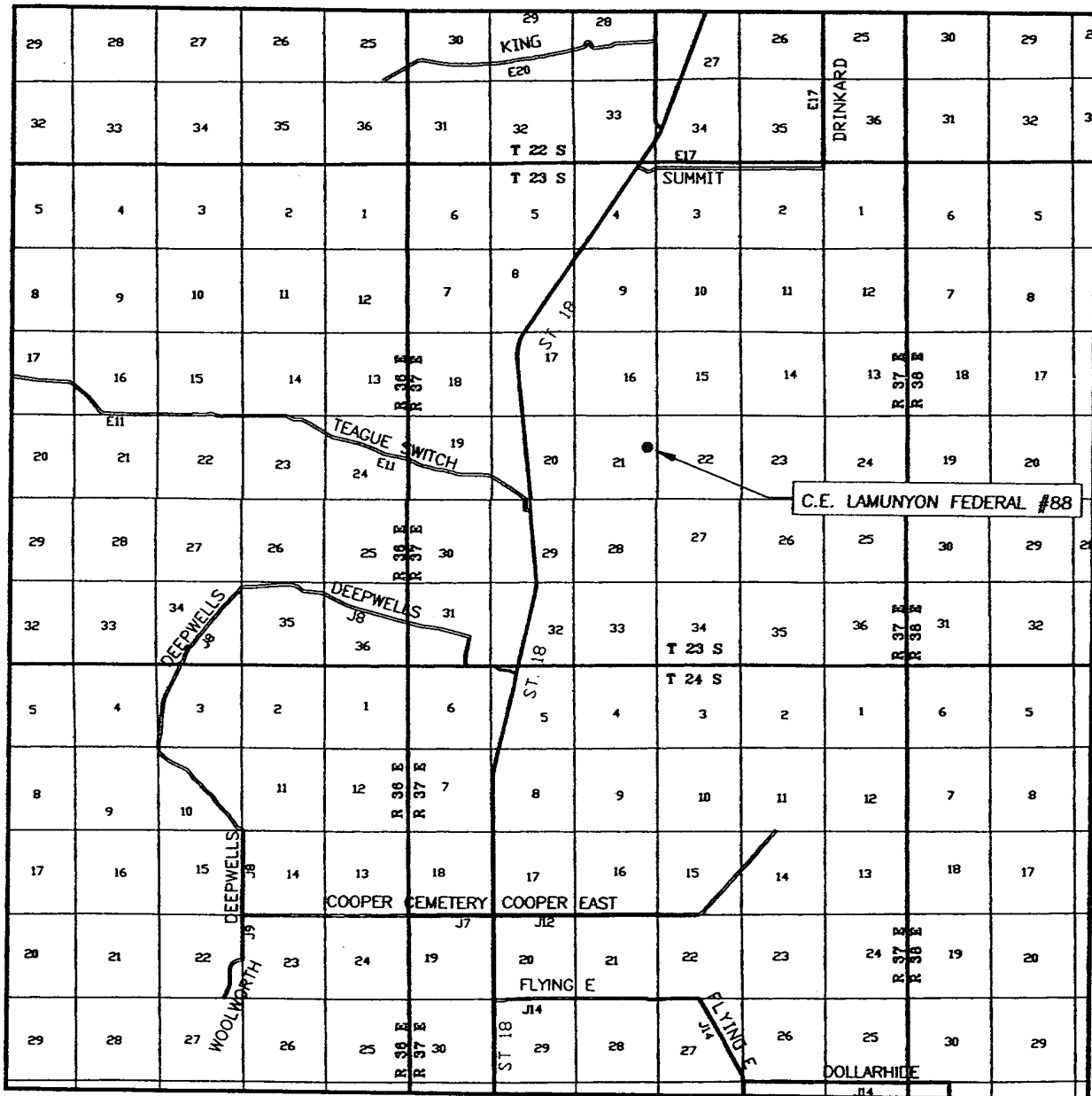
C.E. LAMUNYON FEDERAL #88
 LOCATED 1980 FEET FROM THE NORTH LINE
 AND 990 FEET FROM THE EAST LINE OF SECTION 21,
 TOWNSHIP 23 SOUTH, RANGE 37 EAST, N.M.P.M.,
 LEA COUNTY, NEW MEXICO.

Survey Date: 03/06/06	Sheet 1 of 1 Sheets
W.O. Number: 06.11.0436	Dr. By: M.R.
Date: 03/09/06	Disk: CD#1
06110436	Scale: 1"=100'



PROVIDING SURVEYING SERVICES
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO
 HOBBS, N.M. 88240
 (505) 393-3117

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 21 TWP. 23-S RGE. 37-E

SURVEY N.M.P.M.

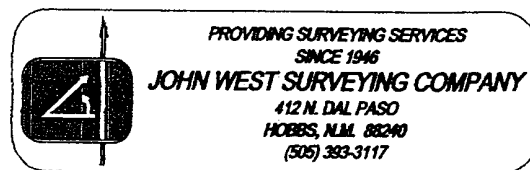
COUNTY LEA STATE NEW MEXICO

DESCRIPTION 1980' FNL & 990' FEL

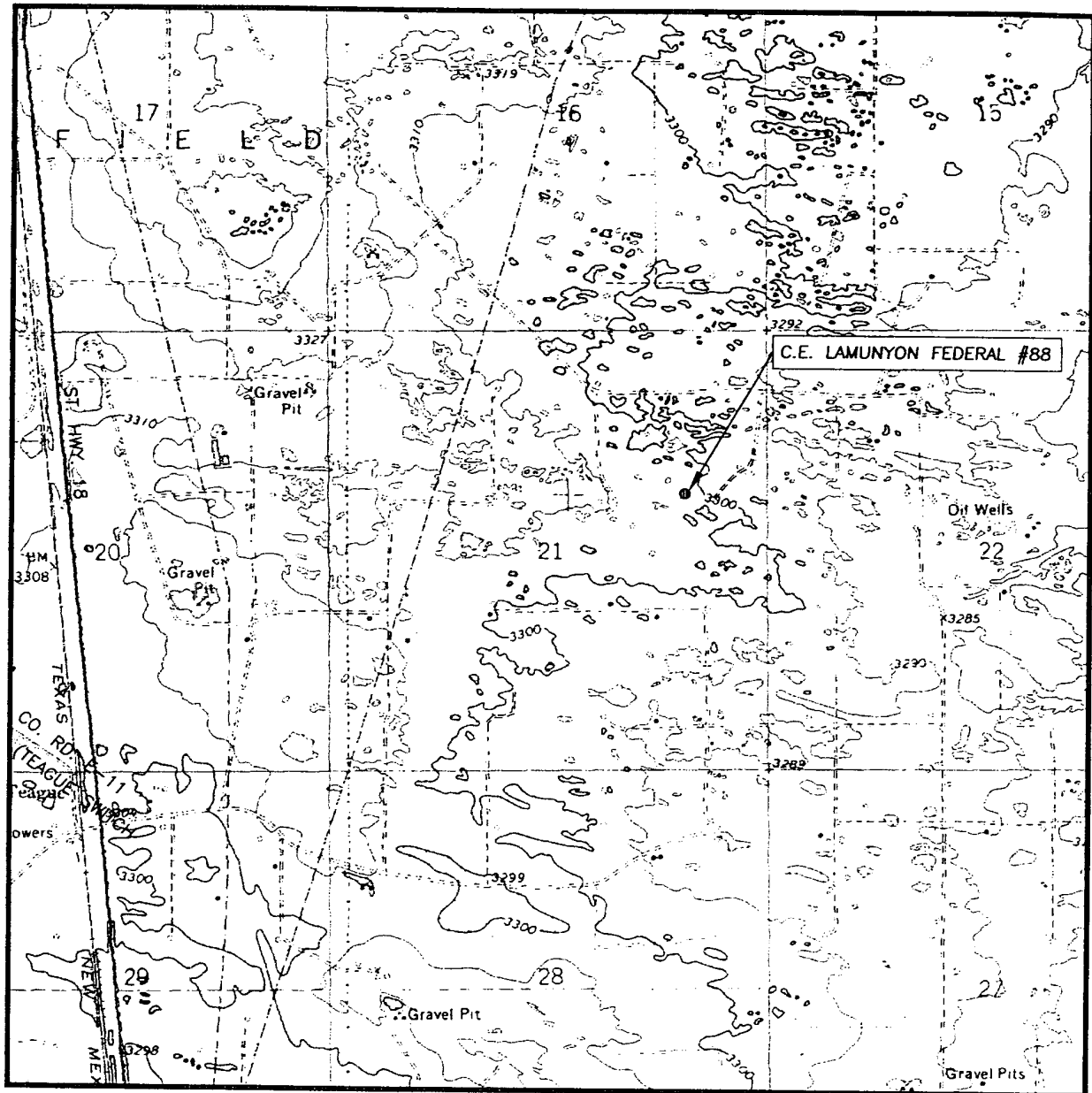
ELEVATION 3303'

OPERATOR POGO PRODUCING COMPANY

LEASE C.E. LAMUNYON FEDERAL



LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
RATTLESNAKE CANYON, N.M. - 10'

SEC. 21 TWP. 23-S RGE. 37-E

SURVEY _____ N.M.P.M.

COUNTY LEA STATE NEW MEXICO

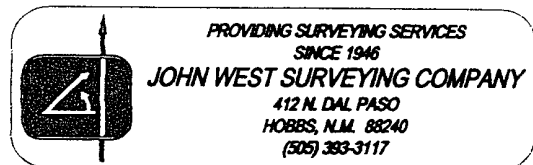
DESCRIPTION 1980' FNL & 990' FEL

ELEVATION 3303'

OPERATOR POGO PRODUCING COMPANY

LEASE C.E. LAMUNYON FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
RATTLESNAKE CANYON, N.M.



APPLICATION TO DRILL

POGO PRODUCING COMPANY
C.E. LAMUNYON FEDERAL # 88
UNIT "H" SECTION 21
T23S-R37E LEA CO. NM

In response to questions asked under Section II of Bulletin NTL-6 the following information on the above well is provided for your consideration.

1. Location of well: 1980' FNL & 990' FEL SECTION 21 T23S-R37E LEA CO. NM
2. Ground Elevation above Sea Level: 3303' GR.
3. Geological age of surface formation: Quaternary Deposits:
4. Drilling tools and associated equipment: Conventional rotary drilling rig using drilling mud as a circulating medium to remove solids from hole.
5. Proposed drilling depth: 3700'
6. Estimated tops of geological markers:

Rustler Anhydrite	1000'	Queen	3300'
Top of Salt	1129'	Penrose	3375'
Yates	2535'	Grayburg	3550'
7 Rivers	2782'	TD	3700'
7. Possible mineral bearing formations:

Yates	Gas	Penrose	Gas
7 Rivers	Oil	Grayburg	Oil
Queen	Oil		
8. Casing Program:

Hole Size	Interval	OD of Casing	Weight	Thread	Collar	Grade
26"	0-40'	20"	NA	NA	NA	Conductor
12½"	0-1100'	8 5/8"	24#	8-R	ST&C	J-55
7 7/8"	0-3700'	4½"	11.6#	8-R	ST&C	J-55

APPLICATION TO DRILL

POGO PRODUCING COMPANY
C.E. LAMUNYON FEDERAL # 88
UNIT "H" SECTION 21
T23S-R37E LEA CO. NM

9. CEMENTING & CASING SETTING DEPTHS:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
8 5/8"	Surface	Run and set 1100' of 8 5/8" 24# J-55 casing. Cement with 800 Sx. of Class "C" cement + 1/4# Flocele/Sx, + 2% CaCl, circulate cement to surface.
4 1/2"	Production	Set 3700' of 4 1/2" 11.6# J-55 ST&C casing. Cement with 750 Sx. of Class "C" cement + additives, estimate top of cement 500' from surface.

10. PRESSURE CONTROL EQUIPMENT:

Exhibit "E" shows a 2000 PSI working pressure B.O.P. , consisting of a stripper head instead of an annular preventor, blind rams, and pipe rams. This B.O.P. stack is being used due to the sub-structure height limitations of the drilling rig being used to drill this well. Pressures encountered during the drilling of this well are not expected to exceed 1850 PSI at total depth. Pogo requests that a 3rd party tests this B.O.P. according to API specifications, after the 8 5/8" casing is set. Exhibit "E-1" shows a manually operated choke manifold, as no remote B.O.P. closing equipment will be necessary.

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD
40-1100'	8.4-8.7	29-32	NC	Fresh water add paper to control seepage.
1100-3700'	10.0-10.5	29-38	NC*	Brine water use paper to control seepage and high viscosity sweeps to clean hole.

* Water loss may have to be controled in order to have good hole conditions in order to run logs, and casing.

APPLICATION TO DRILL

POGO PRODUCING COMPANY
C.E. LAMUNYON FEDERAL # 88
UNIT "H" SECTION 21
T23S-R37E LEA CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

- A. Open hole logs: Dual Laterolog, SNP LDT MSFL Caliper from TD back to 8 5/8" casing shoe. Run Gamma Ray and Neutron logs from 8 5/8" casing shoe back to surface.
- B. No DST's are planned
- C. No mud logger or cores are planned.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H²S in this area. If H²S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 1700 PSI, and Estimated BHT 185°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 7 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The 7-R's, Yates, GB formations will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as an Oil well.

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:
 - A. Characteristics of H₂S
 - B. Physical effects and hazards
 - C. Proper use of safety equipment and life support systems.
 - D. Principle and operation of H₂S detectors, warning system and briefing areas.
 - E. Evacuation procedure, routes and first aid.
 - F. Proper use of 30 minute pressure demand air pack.
2. H₂S Detection and Alarm Systems
 - A. H₂S detectors and audio alarm system to be located at bell nipple, end of bloopie line (mud pit) and on derrick floor or doghouse.
3. Windsock and/or wind streamers
 - A. Windsock at mudpit area should be high enough to be visible.
 - B. Windsock at briefing area should be high enough to be visible.
 - C. There should be a windsock at entrance to location.
4. Condition Flags and Signs
 - A. Warning sign on access road to location.
 - B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H₂S present in dangerous concentration. Only emergency personnel admitted to location.
5. Well control equipment
 - A. See exhibit "E"
6. Communication
 - A. While working under masks chalkboards will be used for communication.
 - B. Hand signals will be used where chalk board is inappropriate.
 - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephoned will be available at most drilling foreman's trailer or living quarters.
7. Drillstem Testing
 - A. Exhausts will be watered.
 - B. Flare line will be equipped with an electric ignitor or a propane pilot light in case gas reaches the surface.
 - C. If location is near any dwelling a closed D.S.T. will be performed.

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

8. Drilling contractor supervisor will be required to be familiar with the effects H_2S has on tubular goods and other mechanical equipment.
9. If H_2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H_2S scavengers if necessary.

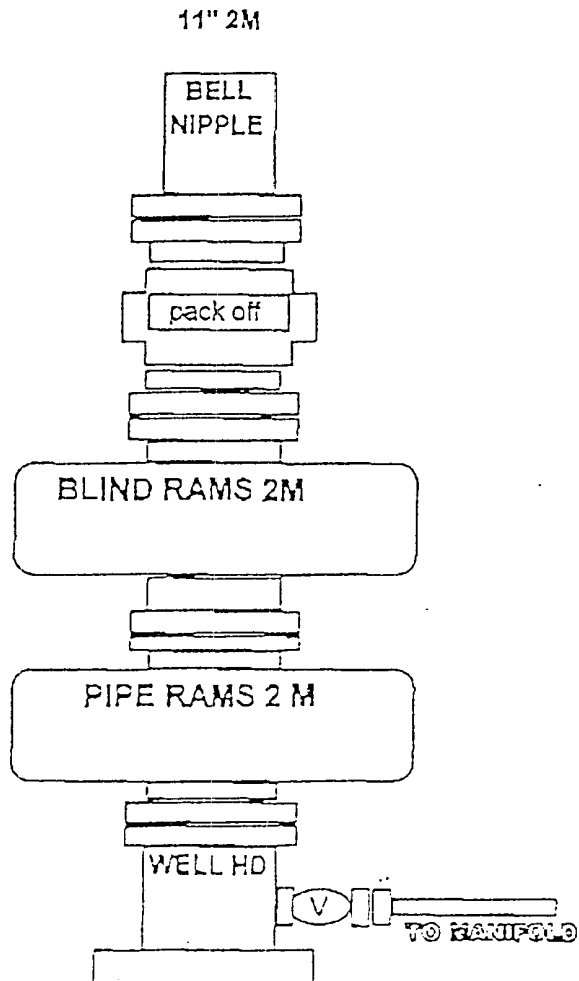


EXHIBIT "E"
 SKETCH OF B.O.P. TO BE USED ON

POGO PRODUCING COMPANY
 C.E. LAMUNYON FEDERAL # 88
 UNIT "H" SECTION 21
 T23S-R37E LEA CO. NM

CHOKE MANIFOLD

3000 PSI WP

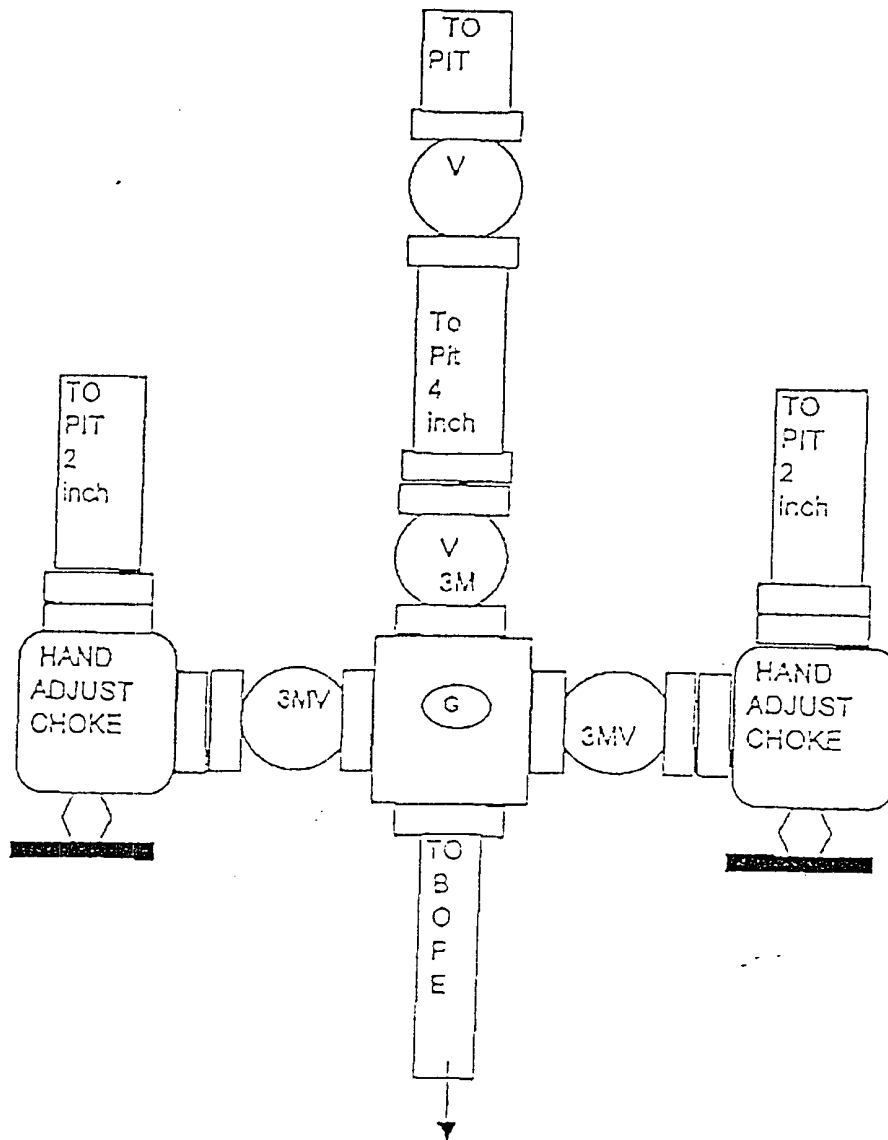


EXHIBIT "E-1"
CHOKE MANIFOLD & CLOSING UNIT

POGO PRODUCING COMPANY
C.E. LAMUNYON FEDERAL # 88
UNIT "H" SECTION 21
T23S-R37E LEA CO. NM

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOC District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: <u>POGO PRODUCING COMPANY</u> Telephone: <u>432-685-8100</u> e-mail address: <u>wrightc@pogoproducing.com</u>		
Address: <u>P.O. Box 10340, Midland, TX 79702-7340</u>		
Facility or well name: <u>C. E. Lamunyon #88</u> API # <u>30-025-37923</u> U/L or Qtr/Qtr <u>H</u> Sec <u>21</u> T <u>23S</u> R <u>37E</u>		
County: <u>Lea County</u> Latitude <u>32:17:29.86N</u> Longitude <u>103:09:43.58W</u> NAD: 1927 <input checked="" type="checkbox"/> 1983 <input type="checkbox"/>		
Surface Owner: Federal <input checked="" type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Indian <input type="checkbox"/>		
Pit Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/> Liner type: Synthetic <input checked="" type="checkbox"/> Thickness <u>12</u> mil Clay <input type="checkbox"/> Pit Volume <u>16000</u> bbl	Below-grade tank Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not. _____	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet	(20 points)
	50 feet or more, but less than 100 feet	(10 points)
	100 feet or more	(0 points) 0
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes	(20 points)
	No	(0 points) 0
	Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet
200 feet or more, but less than 1000 feet		(10 points)
1000 feet or more		(0 points) 0
Ranking Score (Total Points)		0

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☐ offsite ☐ If offsite, name of facility _____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface _____ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOC guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: 06/06/06

Printed Name/Title Cathy Wright, Sr. Eng Tech

Signature

Cathy Wright

Your certification and NMOC approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Printed Name/Title _____

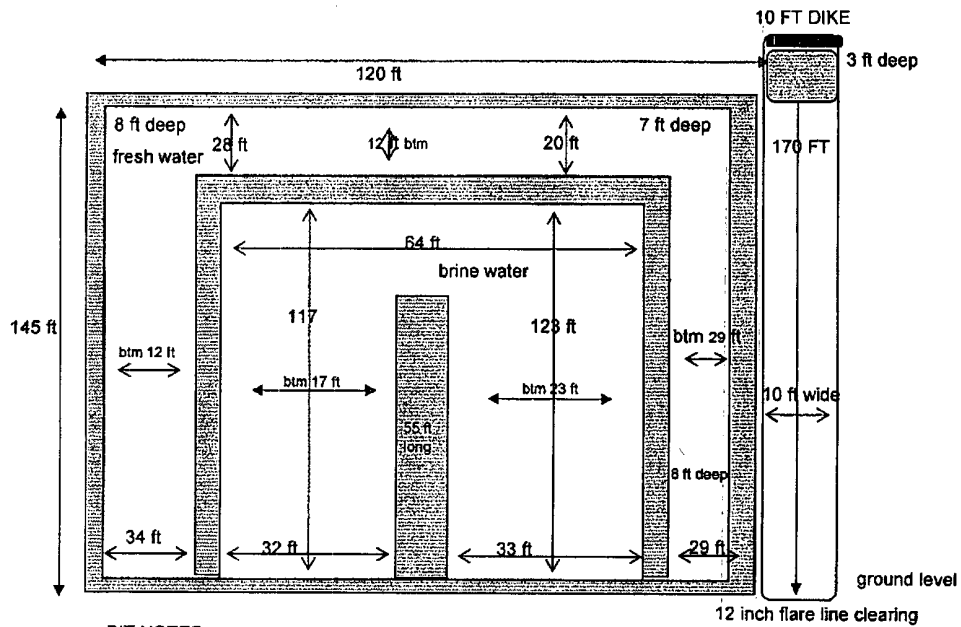
Signature _____

Date: _____

PETROLEUM ENGINEER

JUN 07 2006

POGO Producing Company
C. E. Lamunyon Federal #88
Approximate Pit Dimensions
 H/21/23S/37E, Lea County, New Mexico



PIT NOTES:

Pit will be lined with 12 mil Black plastic w/ UV protection.
 Pit walls are 6 ft to 8 ft wide.
 Pit is 8 ft deep below ground level plus 2 ft walls
 Pit walls are 2 ft above ground level.
 Caliches mined from pit used to make Well Pad.
 Fresh Water volume to ground level = ± 7950 bbls
 Brine Water volume to ground level = ± 7730 bbls
 12 inch Flare line laid on gradual descending graded ROW away from rig to avoid fluid trapping
 Fresh water well = (Nad 27) 32° 16' 17" N & 103° 10' 29" W "Published data"
 This well produces from a depth greater than 100 ft.

Pit equals approx 16000 bbls

REL 2006

Water
Resources

National Water Information System:
Web Interface

Data Category:
Site Information

Geographic Area:
New Mexico



Site Map for New Mexico
USGS 321617103102901 23S.37E.28.133424

Available data for this site

Site map



Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°16'17", Longitude 103°10'29" NAD27
Land-surface elevation 3,315.40 feet above sea level NGVD29
The depth of the well is 150 feet below land surface.
This well is completed in the ALLUVIUM,BOLSON DEPOSITS AND OTHER SURFACE DEPOSITS (110AVMB) local aquifer.

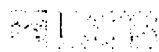
Location of the site in New Mexico.	Site map.
ZOOM IN 2X, 4X, 6X, 8X, or ZOOM OUT 2X, 4X, 6X, 8X.	
Maps are generated by US Census Bureau TIGER Mapping Service.	

Questions about data?
Feedback on this web site
NWIS Site Inventory for New Mexico: Site Map
<http://waterdata.usgs.gov/nm/nwis/nwismap?>

[Top](#)
[Explanation of terms](#)

http://nwis.waterdata.usgs.gov/nm/nwis/nwismap/?site_no=321617103102901&

6/6/2006



Ground-water levels for New Mexico

Search Results -- 1 sites found

Search Criteria

site_no list =

- 321617103102901

Save file of selected sites to local disk for future upload

USGS 321617103102901 23S.37E.28.133424

Available data for this site

Ground-water: Field measurements

GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°16'17", Longitude 103°10'29" NAD27
Land-surface elevation 3,315.40 feet above sea level NGVD29
The depth of the well is 150 feet below land surface.
This well is completed in the ALLUVIUM,BOLSON DEPOSITS AND OTHER SURFACE DEPOSITS (110AVMB) local aquifer.

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

USGS 321617103102901 23S.37E.28.133424

Ground-Water Level, in feet below surface

116.00

116.50

117.00

117.50

118.00

118.50

Altitude of Water Level, in feet above sea level

3199.00

3198.50

3198.00

3197.50

3197.00

1970

1976

1982

1988

1994

2000

2006

----- Provisional Data Subject to Revision -----

Breaks in the plot represent a gap of at least one calendar year between two consecutive points.

[Download a presentation-quality graph](#)

Questions about data?

Top

http://nwis.waterdata.usgs.gov/nm/nwis/gwlevels/?site_no=321617103102901&

6/6/2006

Great Circle Calculator.

By Ed Williams

You need Javascript enabled if you want this page to do anything useful! For Netscape, it's under Options/Network Preferences/Languages.

Compute true course and distance between points.

Enter lat/lon of points, select distance units and earth model and click "compute". Lat/lons may be entered in DD.DD, DD:MM.MM or DD:MM:SS.SS formats.

Note that if either point is very close to a pole, the course may be inaccurate, because of its extreme sensitivity to position and inevitable rounding error.

Input Data

Lat1		Lon1	
32:17:29.86	N	103:09:43.58	W
Lat2		Lon2	
32:16:17	N	103:10:29	W

Output

Course 1-2	Course 2-1	Distance
207.794079	27.7873407	1.372660700

Distance Units: Earth model:


Compute lat/lon given radial and distance from a known point

Enter lat/lon of initial point, true course and distance. Select distance units and earth model and click "compute". Lat/lons may be entered in DD.DD, DD:MM.MM or DD:MM:SS.SS formats.

Note that the starting point cannot be a pole.

Input data

Lat1		Lon1	
0:00.00	N	0:00.00	W
Course 1-2		Distance 1-2	
360		0.0	

 The sender of this message has requested a read receipt. [Click here to send a receipt.](#)

Mull, Donna, EMNRD

From: Phillips, Dorothy, EMNRD
To: Mull, Donna, EMNRD
Cc:
Subject: RE: Financial Assurance Requirement
Attachments:

Sent: Wed 6/7/2006 9:09 AM

None appear on Jane's list and all have blankets.

From: Mull, Donna, EMNRD
Sent: Wednesday, June 07, 2006 8:40 AM
To: Phillips, Dorothy, EMNRD
Cc: Macquesten, Gail, EMNRD; Sanchez, Daniel J., EMNRD
Subject: Financial Assurance Requirement

Dorothy,

Is the Financial Assurance Requirements for these Operators OK?

Pogo Producing Co (17891)
Mewbourne Oil Co (14744)
Manzano LLC (231429)
Texland Petroleum-Hobbs LLC (113315)
Marathon Oil Co (14021)
Melrose Operating Co (184860)

I have checked the Inactive well list for each Operator.

Please let me know. Thanks and have a nice day. Donna