DATE IN 2-11-05	SUSPENSE	ENGINEER JONES	LOGGED IN 2-11-05	TYPE SWD	APP NO. pSEM0504251885

? 3/10/05 2/20/05

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]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[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 _____

[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.

Print or Type Name	Signature	Title	Date

e-mail Address _____

APPLICATION FOR AUTHORIZATION TO INJECT

PNM GAS RESOURCES

SAN YSIDRO #6
625 FT. FNL & 1420 FT. FWL
SEC. 20, TWN. 15N, RNG 1E

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: _____Secondary Recovery ___ ___Pressure Maintenance __XX__Disposal _____Storage
Application qualifies for administrative approval? __XX__Yes _____No

II. OPERATOR: PNM Gas Resources

ADDRESS: 414 Silver Ave. SW Albuquerque, NM 87158

CONTACT PARTY: Joel Levine PHONE: 505-241-4527

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? _____Yes __XX__No
If yes, give the Division order number authorizing the project: _____

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.).

2005 FEB 11 PM 45

*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: Joel Levine TITLE: Senior Engineer

SIGNATURE: _____ DATE: _____

E-MAIL ADDRESS: JLEVINE@PNM.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: X - Appropriate logging file 2-72 NMOCD

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

Side 1

INJECTION WELL DATA SHEET

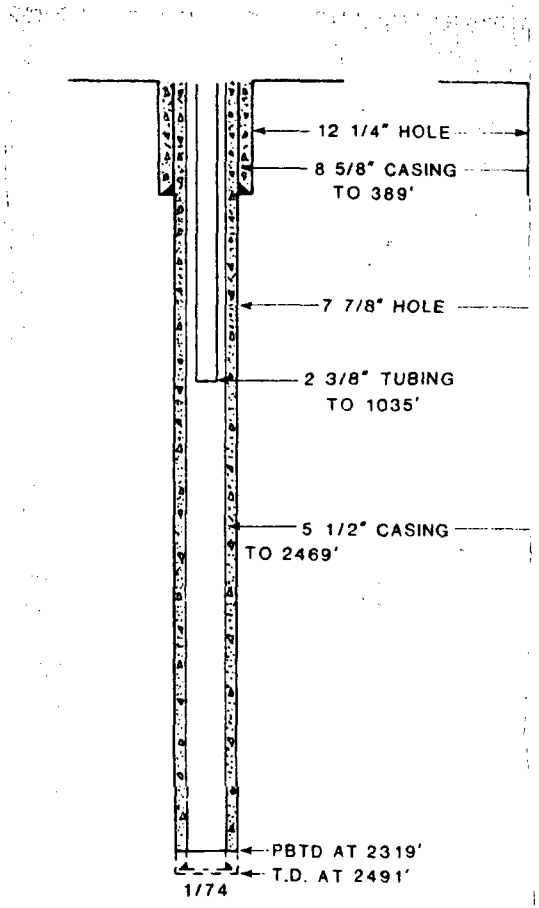
OPERATOR: PNM Gas Resources

WELL NAME & NUMBER: San Ysidro #6

WELL LOCATION: 625' FNL and 1,420' FWL | C | 20 | 15N | 1E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC



WELL No. 6

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12 - 1/4" Casing Size: 8 - 5/8"

Cemented with: 325 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulate

Intermediate Casing

Hole Size: _____ Casing Size: _____

Cemented with: _____ sx. *or* _____ ft³

Top of Cement: _____ Method Determined: _____

Production Casing

Hole Size: 7 - 7/8" Casing Size: 5 1/2"

Cemented with: 630 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Circulate

Total Depth: 2,467'

Injection Interval

Perforated 2,208 feet to 2,228'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: 2 3/8" EUE Lining Material: EUE

Type of Packer: Baker Model "G"

Packer Setting Depth: About 2,158' (50' above injection level)

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

Additional Data

1. Is this a new well drilled for injection? _____ Yes XX No

   If no, for what purpose was the well originally drilled? For gas injection and gas withdrawal of gas storage

2. Name of the Injection Formation: Aqua Zarca

3. Name of Field or Pool (if applicable): Not applicable

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: Entrada Sandstone - approximately 400'

APPLICATION FOR AUTHORIZATION TO INJECT
PNM GAS RESOURCES
SAN YSIDRO #6

ATTACHMENT III. WELL DATA

A. TABULAR DATA

NAME:	SAN YSIDRO #6
LOCATION:	625' FNL & 1420' FWL SEC. 20, T-15-N, R – 1E SANDOVAL COUNTY, NM
SURFACE CASING :	8-5/8" 24# SET @450". CEMENTED WITH 365 SACKS OF CEMENT & CIRCULATED TO SURFACE
PRODUCTION CASING:	5-1/2" 15.5# K-55 CASING TO TOTAL DEPTH OF 2500'. CEMENTED IN TWO STAGES WITH A STAGE COLLAR SET AT 1101' USING 360 SACKS OF CEMENT IN THE FIRST STAGE AND 270 SACKS OF CEMENT IN THE SECOND STAGE. CEMENT WAS CIRCULATED TO SURFACE.
INJECTION TUBING:	2" EUE
PACKER:	BAKER MODEL "G" TENSION PACKER SET AT ~ 2158" OR 50' ABOVE UPPERMOST PERFORATION

B. ADDITIONAL INFORMATION

1. INJECTION INTERVAL IS THE AQUA ZARCA SANDSTONE. EXISTING DEPTHS ~ 2180' TO 2310"

2. THE INJECTION INTERVAL (AQUA ZARCA SANDSTONE) WAS PERFORATED AT DEPTHS OF 2208' TO 2228" AT 4 SHOTS PER FOOT

3. THE WELL (SAN YSIDRO #6) WILL BE CONVERTED TO A WATER INJECTION FOR WATER DISPOSAL PURPOSES

4. ONLY THE INJECTION INTERVAL WAS PERFORATED

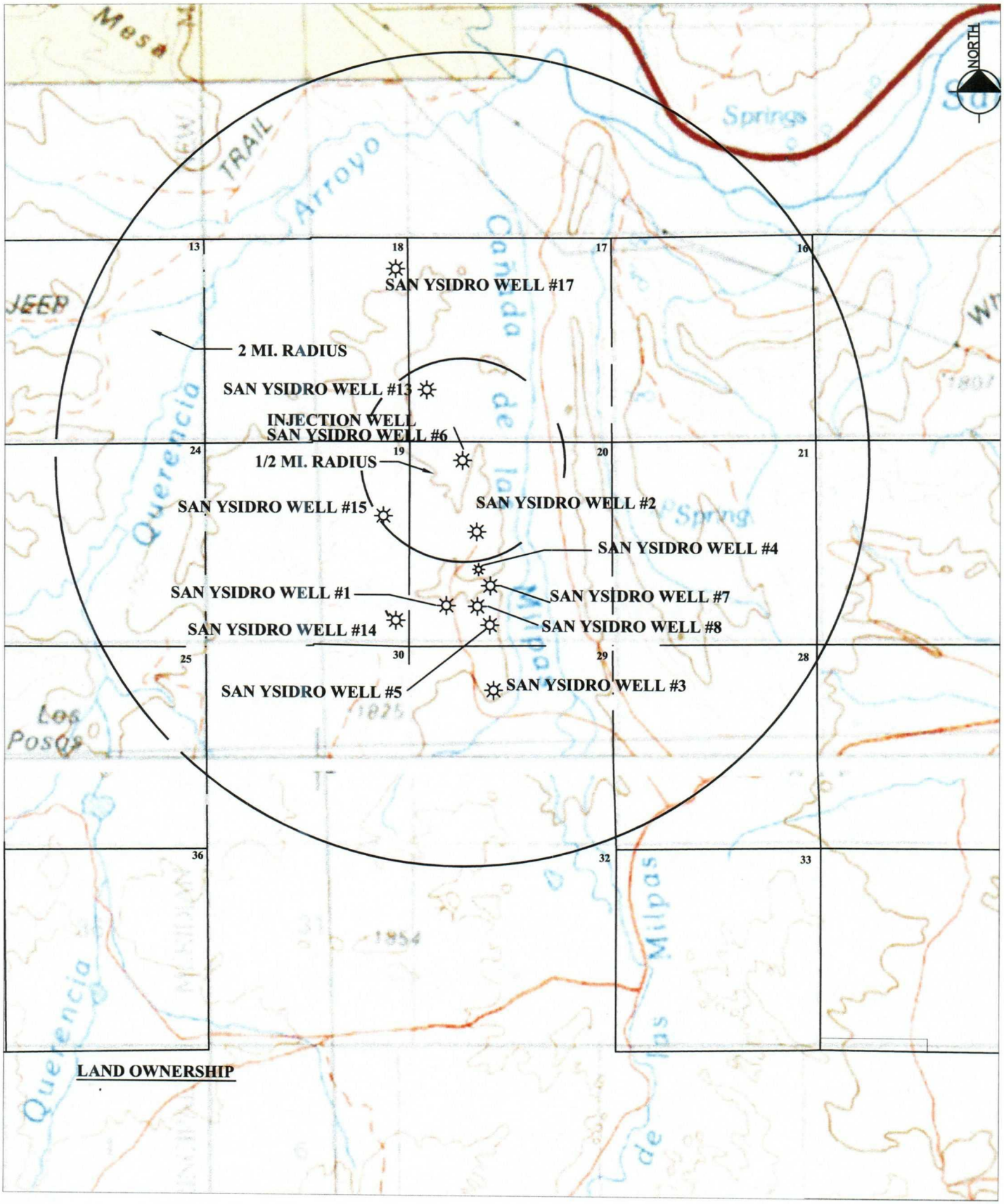
APPLICATION FOR AUTHORIZATION TO INJECT
PNM GAS RESOURCES
SAN YSIDRO #6

5. THERE ARE NO OIL & GAS INTERVAL ZONES IN THE IMMEDIATE AREAS OF INJECTION WELL. ENTRADA FORMATION IN OTHER AREAS (295' TO 400'); TOLDILTO FORMATION (85' TO 294')

APPLICATION FOR AUTHORIZATION TO INJECT
PNM GAS RESOURCES
SAN YSIDRO #6

ATTACHMENT V.

- MAP THAT IDENTIFIES ALL WELLS WITHIN 2 MILE RADIUS & ½ MILE RADIUS DRAWN AROUND THE INJECTION WELL
- MAP THAT IDENTIFIES ALL LEASES WITHIN 2 MILE RADIUS & ½ MILE RADIUS DRAWN AROUND THE INJECTION WELL



LEGEND:

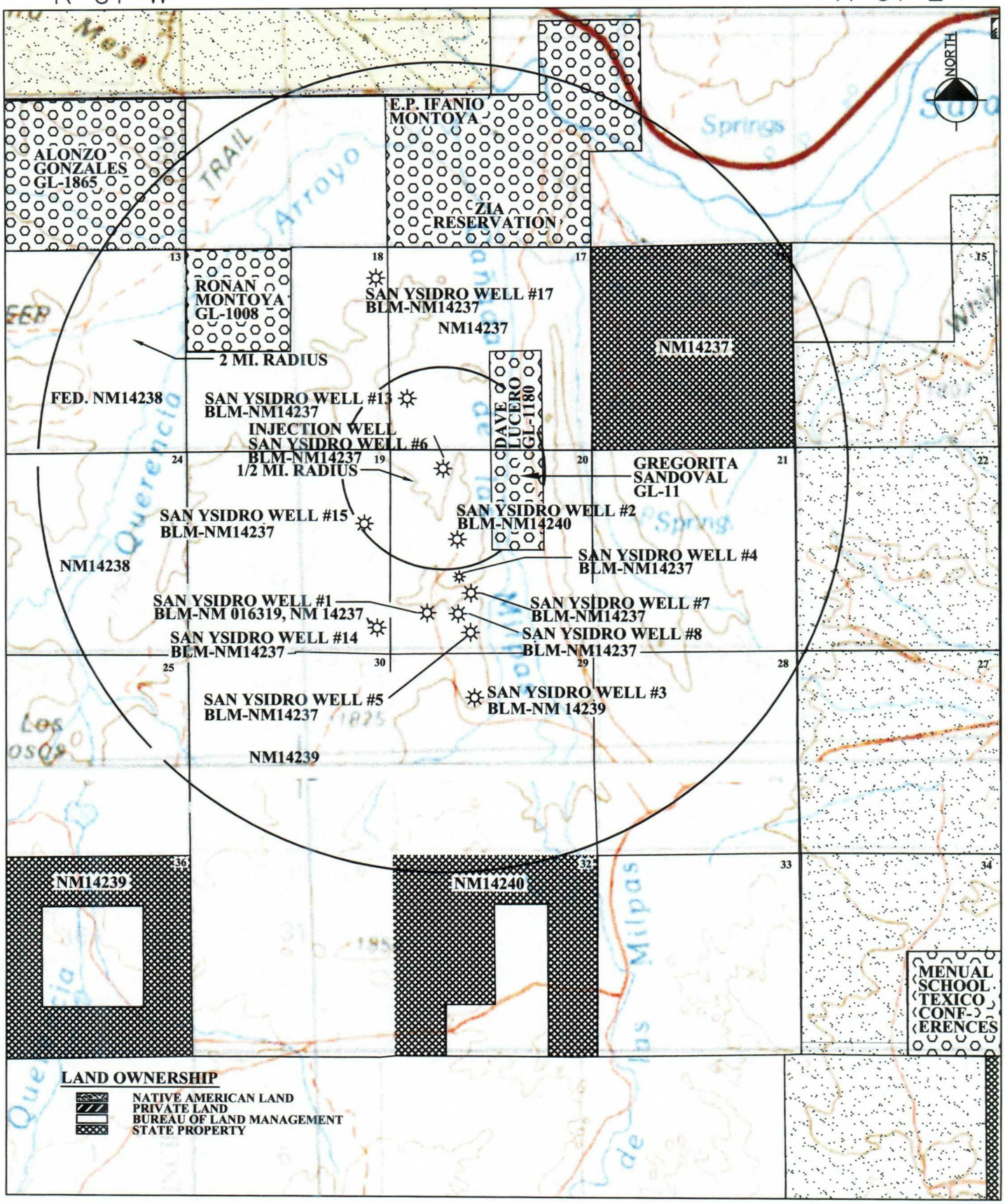
- ⊠ RECTIFIER
- ☼ GAS WELLS
- ◐ COMPRESSOR STATIONS
- ● ODORIZERS

PNM

Gas Engineering
414 Silver Ave Sw
Albuquerque, New Mexico
87102

WELL LOCATION MAP
SAN YSIDRO GAS STORAGE FIELD
SANDOVAL COUNTY, NEW MEXICO

DRAWN BY:CT/CPE	DATE:9/24/04
CHECKED BY:	DATE:
OK BY:	DATE:
APPROVED BY:	DATE:
ACAD FILE: SYLO-KEYO	
SCALE:1" = 3520'	PART V



LEGEND:

- RECTIFIER
- GAS WELLS
- COMPRESSOR STATIONS
- ODORIZERS

PNM
Gas Engineering
414 Silver Ave Sw
Albuquerque, New Mexico
87102

LEASE & SURFACE OWNERSHIP
SAN YSIDRO GAS STORAGE FIELD
SANDOVAL COUNTY, NEW MEXICO

DRAWN BY:CT/CPE	DATE:9/24/04
CHECKED BY:	DATE:
OK BY:	DATE:
APPROVED BY:	DATE:
ACAD FILE: SYLO-KEY0	
SCALE:1" = 3520'	PART V

ATTACHMENT VI. TABULATION OF DATA OF OFFSET WELLS

OPERATOR	WELL NAME	FORMATION	DATE DRILLED	LOCATION SECTION	TOWNSHIP	RANGE	FOOTAGE	TOTAL DEPTH	PERFORATED DEPTH
PNM GAS RESOURCES	SAN YSIDRO #1	AQUA ZARCA	1972 FEB	M-20	15-N	1-E	990' FNL & 990' FEL	2479'	2268' TO 2290'
PNM GAS RESOURCES	SAN YSIDRO #2	AQUA ZARCA	1972 FEB	F-20	15-N	1-E	1270' FNL & 2040' FWL	3385'	2223' TO 2255'
PNM GAS RESOURCES	SAN YSIDRO #3	AQUA ZARCA	1973 JULY	C-29	15-N	1-E	1270' FNL & 2040' FWL	2437'	2265' TO 2287'
PNM GAS RESOURCES	SAN YSIDRO #4	AQUA ZARCA	1972 FEB	K-20	15-N	1-E	2015' FSL & 1785' FWL	2467'	2247' TO 2270'
PNM GAS RESOURCES	SAN YSIDRO #5	AQUA ZARCA	1973 AUGUST	N-20	15-N	1-E	369' FSL & 1886' FWL	2443'	2285' TO 2305'
PNM GAS RESOURCES	SAN YSIDRO #6	AQUA ZARCA	1974 JAN	C-20	15-N	1-E	625' FSL & 1420' FWL	2491'	2196' TO 2217'
PNM GAS RESOURCES	SAN YSIDRO #7	AQUA ZARCA	1974 JAN	N-20	15-N	1-E	1089' FSL & 1703' FWL	2411'	2260' TO 2280'
PNM GAS RESOURCES	SAN YSIDRO #8	AQUA ZARCA	1980 APR	N-20	15-N	1-E	2080' FSL & 540' FWL	2344'	2232' TO 2253'
PNM GAS RESOURCES	SAN YSIDRO #13	AQUA ZARCA	1975 SEPT	M-17	15-N	1-E	1300' FSL & 550' FWL	2448	2170' TO 2200'
PNM GAS RESOURCES	SAN YSIDRO #14	AQUA ZARCA	1975 JUNE	P-19	15-N	1-E	654' FSL & 300' FEL	2588	2395' TO 2425'
PNM GAS RESOURCES	SAN YSIDRO #15	AQUA ZARCA	1975 JULY	H-19	15-N	1-E	1908' FNL & 618' FEL	2719'	2540' TO 2570'
PNM GAS RESOURCES	SAN YSIDRO #17	AQUA ZARCA	1975 JULY	A-18	15-N	1-E	800' FNL & 300' FEL	2317'	2170' TO 2195'
PRE ONGARD OPERATOR	PRE ONGARD #1	AQUA ZARCA		E-20	15-N	1-E	498' FNL & 2546' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #2C	AQUA ZARCA		F-20	15-N	1-E	2380' FNL & 1861' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #4C	AQUA ZARCA		K-20	15-N	1-E	2023' FSL & 1551' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #6A	AQUA ZARCA		C-20	15-N	1-E	498' FNL & 2546' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #6B	AQUA ZARCA		C-20	15-N	1-E	496' FNL & 1421' FWL		FOR CORE PLUGS ONLY

ATTACHMENT VI. TABULATION OF DATA OF OFFSET WELLS

OPERATOR	WELL NAME	FORMATION	DATE DRILLED	LOCATION SECTION	TOWNSHIP	RANGE	FOOTAGE	TOTAL DEPTH	PERFORATED DEPTH
PRE ONGARD OPERATOR	PRE ONGARD #6C	AQUA ZARCA		D-20	15-N	1-E	496' FNL & 1121' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #2B	AQUA ZARCA		F-20	15-N	1-E	2380' FNL & 1861' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #2C	AQUA ZARCA		F-20	15-N	1-E	2536'FNL & 1549' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #2A	AQUA ZARCA		G-20	15-N	1-E	2338' FNL & 2603' FEL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #4B	AQUA ZARCA		K-20	15-N	1-E	1891' FSL & 1912' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #4C	AQUA ZARCA		K-20	15-N	1-E	2023' FSL & 1551' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #7C	AQUA ZARCA		M-20	15-N	1-E	911' FSL & 1316' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #5A	AQUA ZARCA		N-20	15-N	1-E	404' FSL & 2380' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #5B	AQUA ZARCA		N-20	15-N	1-E	404' FSL & 2080' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #5C	AQUA ZARCA		N-20	15-N	1-E	553' FSL & 1723' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #7A	AQUA ZARCA		N-20	15-N	1-E	1007' FSL & 2526' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #7B	AQUA ZARCA		N-20	15-N	1-E	903' FSL & 1907' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #9	AQUA ZARCA		K-20	15-N	1-E	2180' FSL & 1980' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #8	AQUA ZARCA		N-20	15-N	1-E	504' FSL & 2080' FWL		FOR CORE PLUGS ONLY
PRE ONGARD OPERATOR	PRE ONGARD #1	AQUA ZARCA		E-29	15-N	1-E	2000' FNL & 300' FWL		FOR CORE PLUGS ONLY

ATTACHMENT VI. RECORD OF WELL COMPLETION

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: N.M. 14297

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Gas Storage Old Well Re-Entry

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: San Ysidro

9. WELL NO.: 1

2. NAME OF OPERATOR: Southern Union Gas Company

10. FIELD AND POOL, OR WILDCAT: Wildcat

3. ADDRESS OF OPERATOR: P. O. Box 808, Farmington, New Mexico 87401

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 20, T-23N, R-1E, N.M.P.M.

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 990 Ft. from the South line & 990 Ft. from the West line
At top prod. interval reported below: Same as above.
At total depth: Same as above.

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
		Sandoval	New Mexico

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
10/19/71	Feb. 1, 1972	Feb. 7, 1972	5755 Ft. R.K.B.	5743 Ft.

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
3490 Ft. MD & TVD	2692 Ft. MD & TVD		→	0-3490 Ft.	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: Not Perforated

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Gamma Ray-Neutron, Induction-Electrical, Sonic Gamma-Ray, Density, Caliper Logs

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	368 Ft.	17-1/2"	300 sacks	None
5-1/2"	15.5#	2577 Ft.	7-7/8"	1st stage cemented w/450 cu. ft. of cement. 2nd stage cemented at 1006 Ft. and cemented w/550 cu. ft. of cement.	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8" E.U.E.	2298 Ft.	

31. PERFORATION RECORD (*Interval, size and number*): NOT PERFORATED.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

RECEIVED
MAY 15 1972
OIL CON. COM.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
		Shut-in Gas Storage

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY: MAY 3 1972

35. LIST OF ATTACHMENTS

U. S. GEOLOGICAL SURVEY
DURANGO, COLO.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED: Original signed by GILBERT D. NOLAND, JR. Gilbert D. Noland, Jr. TITLE: Drilling Superintendent DATE: May 8, 1972

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: N.M. 1427

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: San Ysidro

2. NAME OF OPERATOR: Southern Union Gas Company

9. WELL NO.: 2

3. ADDRESS OF OPERATOR: P. O. Box 808, Farmington, New Mexico 87401

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface 2380 FT. FROM THE North LINE & 1730 FT. FROM THE West LINE
At top prod. interval reported below Same as above
At total depth Same as above

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 28, T-19N, R-4E, N.M.P.M.

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
		Sandoval	New Mexico

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
1/5/72	1/25/72	January 26, 1972	6826 FT. R.K.B.	6811 FT.

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
3396 FT. MD & TVD	2450' MD & TVD		→	0-3396 FT.	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
2236 - 2260 FT. MD & TVD Aqua Zarca

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Gamma Ray-Neutron
Induction-Electrical, Density, Sonic-Gamma Ray, Cement Bond Log

27. WAS WELL CORED: Yes

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8"	24.0#	425 FT.	12-1/4"	300 sacks	None
5-1/2"	15.50#	3395 FT.	7-7/8"	1st stage circulated w/250 cu. ft.	

of cement. Stage Collar set at 2690 FT. R.K.B. Cemented w/600 cu. ft. of cement. Stage Collar set at 1097 FT. R.K.B. Cemented w/300 cu. ft. cement.

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8" EUE	2188 FT.	

31. PERFORATION RECORD (*Interval, size and number*)
Perf. 4 shots/ft. 2236 FT. - 2260 FT.
Total of 96 holes (0.42" hole size)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
2236-2260 FT.	250 gal. 7-1/2% HCL Acid.

RECEIVED
MAY 11 1972
OIL CON. COM.
DIST.

RECEIVED
MAY 8 1972
U. S. GEOLOGICAL SURVEY
DURANGO, COLO.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
		Shut-in

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
None							

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS
Core and Water Analysis

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Original signed by GILBERT D. NOLAND, JR. TITLE Drilling Superintendent DATE May 8, 1972

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-08-0001-12395

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other GAS STORAGE

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME: LAS VEGAS GAS STORAGE

2. NAME OF OPERATOR: SOUTHERN UNION GAS COMPANY

8. FARM OR LEASE NAME: SAN YSIDRO

3. ADDRESS OF OPERATOR: P. O. Box 808, FARMINGTON, NEW MEXICO 87401

9. WELL NO.: 3

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 1270 FT. FROM NORTH LINE & 2040 FT. FROM THE WEST LINE.
At top prod. interval reported below: SAME AS ABOVE.
At total depth: SAME AS ABOVE

10. FIELD AND POOL, OR WILDCAT: WILDCAT

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 29, T-15N, R-1E, N.M.P.M.

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
		SANDOVAL	NEW MEXICO

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
7/28/73	7/29/73	7/30/73	5816 FT. R.K.B.	5805 FT.

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
2445 FT. MD & TVD	2414 FT. MD & TVD		→	0-2445 FT.	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 2276 - 2296 FT. MD & TVD AQUA ZARCO

25. WAS DIRECTIONAL SURVEY MADE: NO

26. TYPE ELECTRIC AND OTHER LOGS RUN: GAMMA RAY-NEUTRON; INDUCTION-ELECTRICAL, SONIC GAMMA RAY, DENSITY, CEMENT BOND

27. WAS WELL CORED: NO

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8	24.0	417 FT.	12-1/4"	350 SACKS	NONE
5-1/2	15.5	2445 FT.	7-1/8	1ST STAGE CEMENTED W/350 CU. FT. OF CEMENT. STAGE COLLAR SET AT 1204 FT. CEMENTED W/330 CU. FT. OF CEMENT.	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8 E.U.E.	2248 FT.	

31. PERFORATION RECORD (Interval, size and number)
PERFORATED 4 SHOTS/FT. 2276 - 2296 FT.
TOTAL OF 3 HOLES. .45 HOLE SIZE.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
2276-2296 FT.	29 GAL. 7-1/2% HCL ACID

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
		SHUT-IN GAS STORAGE WELL

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
NONE							

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED: Original Signed by GILBERT D. NOLAND, JR. / GILBERT D. NOLAND, JR. TITLE: DRILLING SUPERINTENDENT DATE: OCT. 13, 1973

RECEIVED MAR 24 1975 OIL CON. COM. DIST. 3

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

5. LEASE DESIGNATION AND SERIAL NO.: NMSA 1240

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: San Ysidro

9. WELL NO.: 4

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 28, T-15N, R-1E, N.M.P.M.

12. COUNTY OR PARISH: Sandoval

13. STATE: New Mexico

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Gas Storage

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Southern Union Gas Company

3. ADDRESS OF OPERATOR: P. O. Box 808, Farmington, New Mexico 87401

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 2015 FT. FROM THE South LINE & 1085 FT. FROM THE West LINE
At top prod. interval reported below: Same as above
At total depth: Same as above

14. PERMIT NO.: — DATE ISSUED:

15. DATE SPUDDED: Feb. 7, 1972
16. DATE T.D. REACHED: Feb. 14, 1972
17. DATE COMPL. (*Ready to prod.*): February 17, 1972
18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*: 5856 FT. R.K.B.
19. ELEV. CASINGHEAD: 5843 FT.

20. TOTAL DEPTH, MD & TVD: 2475 FT. MD & TVD
21. PLUG, BACK T.D., MD & TVD: 2438 FT. MD & TVD
22. IF MULTIPLE COMPL., HOW MANY*:
23. INTERVALS DRILLED BY: →
ROTARY TOOLS: 0-2475 FT.
CABLE TOOLS:

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 2260 - 2280 FT. MD & TVD Aqua Zarca

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Gamma Ray-Neutron; Induction-Electrical, Sonic Gamma-Ray, Density, Cement Bond

27. WAS WELL CORED: Yes

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8"	28.0#	470 FT.	12-1/4"	350 sacks	None
5-1/2"	15.5#	2474 FT.	7-7/8"	1st stage cemented with 300 cu. ft. of cement. Stage Collar set at 1101 FT. and cemented w/400 cu. ft. of cement.	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8" EUE	2187 FT.	

31. PERFORATION RECORD (*Interval, size and number*)
Perforated 4 shots/ft. 2260 - 2280 FT.
Total of 80 holes. Hole size 0.48"

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
2260 - 2280 FT.	250 gal. 7-1/2% HCL Acid.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
		Shut-in Gas Storage

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
None							

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

MAY 17 1972 OIL CON. COM. DIST. 3
RECEIVED
MAY 8 1972
U. S. GEOLOGICAL SURVEY
DURANGO, COLO.

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS
Core and Water Analysis

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Original signed by GILBERT D. NOLAND, JR. Gilbert D. Noland, Jr. TITLE Drilling Superintendent DATE May 8, 1972

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-08-0001-12396

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other GAS STORAGE

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME: LA PLATA GAS STORAGE

8. FARM OR LEASE NAME: SAN JUAN

9. WELL NO.: 5

2. NAME OF OPERATOR: SOUTHERN UNION GAS COMPANY

3. ADDRESS OF OPERATOR: P. O. BOX 808, FARMINGTON, NEW MEXICO 87401

10. FIELD AND POOL, OR WILDCAT: WILDCAT

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 369 FT. FROM THE SOUTH LINE & 1886 FT. FROM WEST LINE.
At top prod. interval reported below: SAME AS ABOVE.
At total depth: SAME AS ABOVE

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 20, T-31N, R-11E, N.M.P.M.

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
		SAN JUAN	NEW MEXICO

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
7/31/73	8/8/73	8/12/73	5838 FT. R.K.B.	5827 FT.

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
2454 FT. MD & TVD	242 FT. MD & TVD		→	0-2454 FT.	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
2296 - 2316 FT. MD & TVD AQUA ZARCA

25. WAS DIRECTIONAL SURVEY MADE: NO

26. TYPE ELECTRIC AND OTHER LOGS RUN
INDUCTION-ELECTRICAL, FORMATION, GAMMA-RAY-NEUTRON, CEMENT BOND

27. WAS WELL CORED: NO

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8	24.0#	466 FT.	12-1/4	350 SACKS	NONE
5-1/2	15.5#	2454 FT.	7-7/8	1ST STAGE CEMENTED W/320 CU. FT. OF CEMENT.	
	CEMENT.	FLOAT COLLAR SET AT 1234 FT.		CEMENTED W/40 CU. FT. OF CEMENT.	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8 OE	2248 FT.	

31. PERFORATION RECORD (Interval, size and number)
PERFORATED 4 SHOTS/FT. 2296-2316 FT.
TOTAL OF 3 HOLES.
.45 HOLE SIZE

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
2296-2316 FT.	500 GAL. 7-1/2% HCL ACID

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
		SHUT-IN GAS STORAGE WELL

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
NONE							

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED Original signed by GILBERT D. NOLAND, JR. TITLE DRILLING SUPERINTENDENT DATE Sept. 13, 1973

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-08-0001-12395

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other GAS STORAGE

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME: LAS MILPAS GAS STORAGE

8. FARM OR LEASE NAME: SAN YSIDRO

9. WELL NO.: 6

2. NAME OF OPERATOR: SOUTHERN UNION GAS COMPANY

3. ADDRESS OF OPERATOR: P. O. Box 808, FARMINGTON, NEW MEXICO 87401

10. FIELD AND POOL, OR WILDCAT: WILDCAT

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface 625 FT./NORTH LINE & 1420'/WEST LINE.
At top prod. interval reported below SAME AS ABOVE
At total depth SAME AS ABOVE.

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 20, T-15N, R-1E N.M.P.M.

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: SANDOVAL | 13. STATE: NEW MEXICO

15. DATE SPUDDED	16. DATE T.D. REACHED	DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
12/28/73	1/6/74	1/8/74	5733 FT. R.K.B.	5722 FT.

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
2480' MD & TVD	2435' MD & TVD		⟶	0-2480 FT.	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
2208 - 2228 FT. MD & TVD AQUA ZARCA

25. WAS DIRECTIONAL SURVEY MADE: NO

26. TYPE ELECTRIC AND OTHER LOGS RUN
INDUCTION-ELECTRIC, DENSITY, GAMMA-RAY NEUTRON, CEMENT BOND

27. WAS WELL CORED: YES

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8"	28.0#	404 FT.	12-1/4"	325 SACKS	NONE
5-1/2"	15.50#	2479 FT.	7-7/8"	1ST STAGE CEMENTED W/350 CU. FT. OF CEMENT. STAGE COLLAR SET AT 1187 FT. 2ND STAGE CEMENTED W/450 CU. FT. OF CEMENT.	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8" EUE	1044 FT.	

31. PERFORATION RECORD (Interval, size and number)
PERFORATED 4 SHOTS/FT. 2208-2228 FT.
TOTAL OF 80 HOLES.
0.48" HOLE SIZE

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* PRODUCTION

DATE FIRST PRODUCTION | PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) | WELL STATUS (Producing or shut-in): SHUT-IN GAS STORAGE WELL

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF	WATER—BBL.	GAS-OIL RATIO
NONE			⟶				

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF	WATER—BBL.	OIL GRAVITY-API (CORR.)
		⟶				

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) | TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED Original signed by Dan R. Collier DAN R. COLLIER | TITLE OFFICE MANAGER | DATE JANUARY 22, 1974

MAR 1974 OIL CON. COM. DIST. 3

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-08-0001-12395

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR ☐ Other

7. UNIT AGREEMENT NAME: LAS MILPAS GAS STORAGE

8. FARM OR LEASE NAME: SAM YSIDRO

2. NAME OF OPERATOR: SOUTHERN UNION GAS COMPANY

9. WELL NO.: 7

3. ADDRESS OF OPERATOR: P. O. BOX 808, FARMINGTON, NEW MEXICO 87401

10. FIELD AND POOL, OR WILDCAT: GAS STORAGE

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 1089 FT./SOUTH LINE & 1703 FT./WEST LINE.
At top prod. interval reported below: SAME AS ABOVE
At total depth: SAME AS ABOVE

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 20, T-15N, R-1E N.M.P.M.

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: SANDOVAL | 13. STATE: NEW MEXICO

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
1/10/74	1/15/74	1/18/74	5830 FT. D.F.	5820 FT.

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
2423' MD & TVD	2377 FT. MD & TVD		→	0-2423	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION--TOP, BOTTOM, NAME (MD AND TVD)*
2270 - 2290 FT. MD & TVD AQUA ZARCA

25. WAS DIRECTIONAL SURVEY MADE: NO

26. TYPE ELECTRIC AND OTHER LOGS RUN
INDUCTION-ELECTRICAL, DENSITY, GAMMA-RAY NEUTRON, CEMENT BOND

27. WAS WELL CORED: NO

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB/FT	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8-5/8"	28.0#	486 FT.	12-1/4"	325 SACKS	NONE
5-1/2"	15.50#	2422 FT.	7-7/8"	1ST STAGE CEMENTED W/350 CU. FT. OF CEMENT. STAGE COLLAR SET AT 1215 FT. R.K.B. 2ND STAGE CEMENTED W/450 CU. FT. OF CEMENT	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8" EUE	2180 FT.	

31. PERFORATION RECORD (Interval, size and number)
PERFORATED 4 SHOTS/FT. 2270 - 2290 FT.
TOTAL OF 80 HOLES.
0.48" HOLE SIZE.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* PRODUCTION

DATE FIRST PRODUCTION | PRODUCTION METHOD (Flowing, gas lift, pumping--size and type of pump) | WELL STATUS (Producing or shut-in) SHUT-IN GAS STORAGE WELL

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL--BBL.	GAS--MCF.	WATER--BBL.	GAS-OIL RATIO
NONE							

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL--BBL.	GAS--MCF.	WATER--BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) | TEST WITNESSED BY

35. LIST OF ATTACHMENTS

RECEIVED MAR 24 1975 OIL CON. COM. DIST. 3

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED Original signed by Dan R. Collier DAN R. COLLIER TITLE OFFICE MANAGER DATE JANUARY 23, 1974

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-08-0001-12395

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Gas Storage

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME: Las Milpas Gas Storage

8. FARM OR LEASE NAME: San Ysidro

2. NAME OF OPERATOR: Southern Union Exploration Company

9. WELL NO.: 8

3. ADDRESS OF OPERATOR: Suite 1800, First International Bldg., Dallas, TX 75270

10. FIELD AND POOL, OR WILDCAT: Storage

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface
At top prod. interval reported below
At total depth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 20, T15N, R1E N.M. P.M.

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: Sandoval | 13. STATE: NM

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
8/28/79	9/8/79	9/27/~~80~~ 79	5829' GL	5832

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
2455'	2415'		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
Aqua Zarca 2243-2265' 1 SPF

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: Induction Spherically Focused, Induction SFL, Compensated Neutron-Formation.

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8"	24#	432.21'	12 1/4"	330 sks Class "B"	Circulated
5 1/2"	15.5#	2445'	7 7/8"	1st Stage 360 sks Class "C"	1500'
				2nd Stage 450 sks Class "C"	Circ.

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (*Interval, size and number*)
2243', 45', 51', 53', 55', 57', 59', 61', 63', 65'

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
None	

APR 17 1980
U. S. GEOLOGICAL SURVEY

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
No production	Will produce by flowing	Shut-In 1980

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

RECEIVED
APR 25 1980
OIL CON. COM.
DIST.

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)
Will be used as supply.

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

ACCEPTED FOR RECORD
APR 24 1980
U.S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

SIGNED Ronald J. Mosbacher TITLE Drilling & Production Eng. DATE April 09, 1980

*(See Instructions and Spaces for Additional Data on Reverse Side)

NMOCC

BY M. L. Kuchera

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-08-0001-12385

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Gas Storage

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME: Las Milpas Gas Storage

8. FARM OR LEASE NAME: San Ysidro

2. NAME OF OPERATOR: Southern Union Gas Company

9. WELL NO.: King #1-13

3. ADDRESS OF OPERATOR: 1402 Fidelity Union Tower, Dallas, Texas 75201

10. FIELD AND POOL, OR WILDCAT: Las Milpas

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements.*)
At surface 1300' FSL & 550' FWL
Sec. 17, T-15-N, R-1-E, NMPM
At top prod. interval reported below
At total depth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 17, T-15-N, R-1-E, NMPM

RECEIVED AUG -5 1975 OIL CON. COM. DIST. 3

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
		Sandoval	New Mexico

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
6/23/75	6/30/75	7/2/75	5669 GL 5680 KB	5669

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
2459	2411	Single	→	2459	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
2181 - 2211 Aqua Zarca

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN
Density, Induction Laterolog, Cement Bond, GR-N

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8	24# 432#	422	12 1/4	360 sks class B	cement
5 1/2	15.5#	2459	7 7/8	1st stg-215 sks class B	circulated
				2nd stg-275 sks class B	cement
DV Tool set @ 1161 R.K.B. Cement circulated to surface					circulated

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8	2173 RKB	None

31. PERFORATION RECORD (*Interval, size and number*)
Perforated 2 shots/ft.
2181 - 2211
Total 60 holes
0.48 hole size

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
None	

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
		Shut in - Gas Storage

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
None							

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED R. G. Sharrock TITLE Geologist DATE 7/31/75

R. G. Sharrock

(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

5. LEASE DESIGNATION AND SERIAL NO.: 14-08-0001-12395

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Gas Storage

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME: Las Milpas Gas Storage

8. FARM OR LEASE NAME: San Ysidro

2. NAME OF OPERATOR: Southern Union Gas Company

9. WELL NO.: Giovanni #14

3. ADDRESS OF OPERATOR: 1400 Fidelity Union Tower Dallas, Texas

10. FIELD AND POOL, OR WILDCAT: Las Milpas

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 654' FSL & 300' FEL S-19 T-15-N R-1-E NMPM
At top prod. interval reported below: same as above
At total depth: same as above

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec-19 T-15-N R-1-E NMPM

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
		Sandoval	New Mexico

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
6/9/75	6/18/75	6/22/75	5817 RKB	5807

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
2602		Single	→	0-2602	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 2403-2433 Aqua Zarca

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Density, Induction Laterolog, GR-N, Cement Bond

27. WAS WELL CORED: Yes

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8	24.0	557	12 1/4	350 sks class B	None
5 1/2	15.5	2601	7 7/8	1st stage cem w/300	sks Posmix
				2nd stage cem w/312	sks Posmix

DV Tool set at 1312 RKB. Cement circulated on each.

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8 EUE	2284'	None

31. PERFORATION RECORD (*Interval, size and number*)
Perforated 2 shots/foot
2403 - 2433
Total of 60 holes
0.48" Hole size

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
NONE	

NOV 29 1975
OIL CON. COM.
DIST. 3

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
		shut in Gas Storage Well

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
None							

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED Ray Shamrock TITLE Geologist DATE 6/24/75

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-08-0001-12395

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Gas Storage

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME: Las Milpas Gas Storage

8. FARM OR LEASE NAME: San Ysidro

2. NAME OF OPERATOR: Southern Union Gas Company

9. WELL NO.: Cluff #1-15

3. ADDRESS OF OPERATOR: 1402 Fidelity Union Tower, Dallas, Texas 75201

10. FIELD AND POOL, OR WILDCAT: Las Milpas

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)
At surface 1908' FNL & 618' FEL
Sec 19, T15N, R1E, NMPM
At top prod. interval reported below
At total depth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec 19, T15N, R1E, NMPM

AUG -5 1975 OIL CON. COM. DIST. 3

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: Sandoval | 13. STATE: New Mexico

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
7/2/75	7/9/75	7/12/75	5930' GL 5941' RKB	5930

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
2730 RKB	2693 RKB	Single	→	2730	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
2550-2570 RKB. Aqua Zarca

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN
Induction, Compensated Neutron Formation Density, Cement Bond, GR-N

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8	24# K-55	677 RKB	12 1/4	375 sks class B. Cement	Circulated
5 1/2	15.5# K-55	~~2739~~ 2729 RKB	7 7/8	1st stage-275 sks class B	"
				2nd stage-270 sks class B	"
DV Tool set at 1315 RKB. Cement Circulated to surface.					

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
None				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8	2529 RKB	None

31. PERFORATION RECORD (*Interval, size and number*)
Perforated 2 shots/ft.
2550-2570 RKB
Total 40 holes
0.42 hole size

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
None	

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
		Shutin - Gas Storage

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*) | TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED R. G. Sharrock TITLE Geologist DATE ~~7/31/75~~

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 9-330
(Rev. 5-68)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-08-0001-12395

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Gas Storage

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME: Las Milpas Gas Storage

8. FARM OR LEASE NAME: San Ysidro

9. WELL NO.: San Ysidro #1-17

10. FIELD AND POOL, OR WILDCAT: Las Milpas

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: T-15-N, R-1-E Sec-18 NMPM

2. NAME OF OPERATOR: Southern Union Gas Company

3. ADDRESS OF OPERATOR: 1402 Fidelity Union Tower, Dallas, Texas 75201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 800 ft. from North Line & 300 ft. from East Line
At top prod. interval reported below: Sec. 18, T-15-N, R-1-E, NMPM
At total depth: Same as above

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: Sandoval | 13. STATE: New Mexico

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
7/12/75	7/20/75	7/23/75	5691 GL 5702 RKB	5691

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
2328 RKB		Single	→	2328	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 1985 - 2005 RKB Aqua Zarca

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Cement Bond Log, Gamma Ray Neutron, Dual Induct. Laterolog, Comp. Neutron Formation Density - GR & Cal.

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8"	24.0 K-55	516' RKB	12 1/4"	280 sks Class B Cement	Circulated
5 1/2"	15.5 K-55	2320' RKB	7 7/8"	1st Stage 200 sks Class B	"
				2nd Stage 275 sks Class B	"
D.V. Tool set at 1173' RKB			Cemented to surface		

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
None				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	1886' RKB	None

31. PERFORATION RECORD (Interval, size and number)
Perforated 2 shots/Ft.
1985' - 2005' RKB
Total 40 holes
0.42 hole size

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
None	

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
		Shut-in Gas Storage

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

RECEIVED DEC 11 1975 OIL CON. COM. DIST. 3

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED R. G. Sharrock TITLE Geologist DATE 12/8/75

*(See Instructions and Spaces for Additional Data on Reverse Side)

ATTACHMENT VI. SCHEMATIC OF ANY PLUGGED WELL ILLUSTRATING PLUGGING DETAIL

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM 14237
6. If Indian, Allottee or Tribe Name:
7. If Unit or CA, Agreement Designation: NM 78348X
8. Well Name and No.: SAN YSIDRO 13
9. API Well No.: 30-043-20160
10. Field and Pool, or Exploratory Area:
11. County or Parish, State: SANDOVAL, N.M.

1. Type of Well: ☐ Oil Well ☐ Gas Well ☑ Other Gas Storage Observation Well
2. Name of Operator: PNM Gas Services
3. Address and Telephone No.: 414 Silver Ave SW Albuquerque NM 87158 (505) 241-4527
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1300' FSL & 550' FWL M - SECTION 17, TOWNSHIP 15N, RANGE 1E

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
☐ Notice of Intent	☒ Abandonment
☑ Subsequent Report	☐ Recompletion
☐ Final Abandonment Notice	☐ Plugging Back
	☐ Casing Repair
	☐ Altering Casing
	☐ Other
	☐ Change of Plans
	☐ New Construction
	☐ Non-Routine Fracturing
	☐ Water Shut-Off
	☐ Conversion to Injection
	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

AFMSS: Adjud (Chm) | Engr ✓ | Geol | Surf | Appv Brd

RECEIVED
JUL 23 1998
OIL CON. DIV.
DIST. 3

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

P+A ON JUNE 26, 1998

1. SET BRIDGE PLUG AT 2120 FEET. * CEMENTED WITH 60 SACKS (40 SACKS OF CEMENT BELOW RETAINER PLUG + 20 SACKS ABOVE RETAINER)
2. SET SURFACE PLUG AT 310 FEET. * CEMENTED WITH 35 SACKS OF CEMENT.
3. CLEAN-UP AS PER BLM INSTRUCTIONS
4. PLACE ABANDONMENT MARKER

CASING WT = 15.5 pounds

NOTE: THIS WORK HAS RECEIVED A PRIOR VERBAL APPROVAL TO PERFORM THE ABOVE.

- AL YEPPA WITNESSED THE P+A

14. I hereby certify that the foregoing is true and correct

Signed: Joel Kevine Title: Senior Engineer Date: 6/26/98

(This space for Federal or State office use)

Approved by: Patricia M Hester Title: Lands and Mineral Resources Date: 7/21/98

Conditions of approval, if any:
Remove any equipment from location.

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.

*See Instruction on Reverse Side

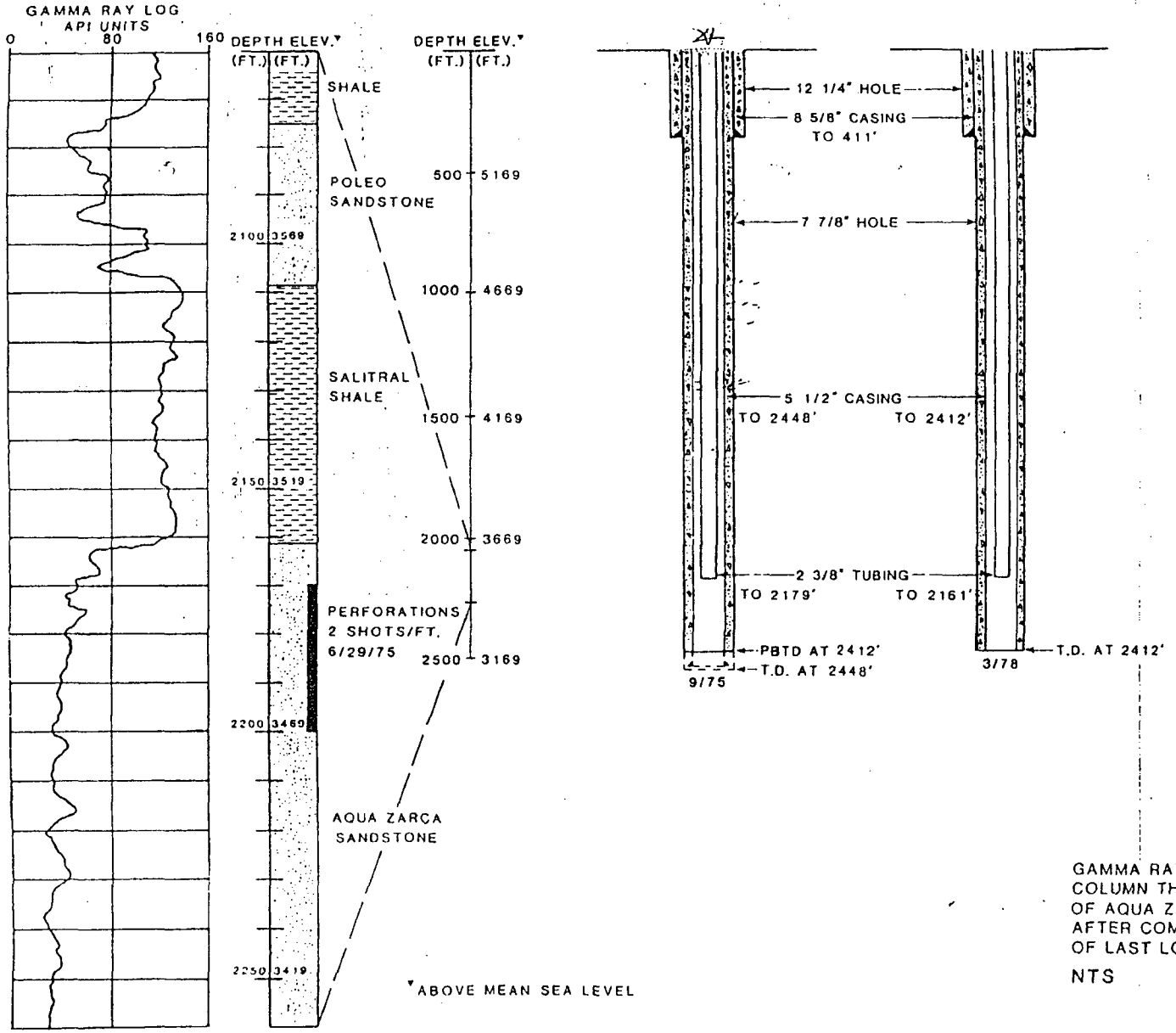


FIGURE B-9

WELL No. 13

GAMMA RAY & STRATIGRAPHIC COLUMN THROUGH POLEO & TOP OF AQUA ZARCA. WELL SCHEMATICS AFTER COMPLETION & AT TIME OF LAST LOG.

NTS

C/O Angil & Medina-Tres

CEMENTERS, INC.
P. O. BOX 302
FARMINGTON, NEW MEXICO 87499

CEMENT JOB DETAIL SHEET

CUSTOMER	DATE	F.R. #	SER. SUP.	TYPE JOB
PNM Gas Services	6-26-98		Boyce	P&A

LEASE & WELL NAME - OCSG	LOCATION	COUNTY
San Ysidro #13		Sandoval

DRILLING CONTRACTOR RIG #	OPERATOR
Tri-PRT	

MATERIAL FURNISHED	TYPE OF PLUGS (TOP / BTM)	LIST CSG HARDWARE	SQ MANI FOLD (Y N)	TOP OF EACH FLUID	SLURRY WEIGHT PPG	SLURRY YIELD FT³	WATER GPS	PUMP TIME HR: MIN:	Bbl SLURRY	Bbl MIX WATER
[illegible] Sks [illegible] Plug [illegible] 35 Sks [illegible]										
35 Sk Surface Plug 210 Ft										

Available Mix Water ____ Bbl. Available Displ. Fluid ____ Bbl. TOTAL ____

HOLE SIZE	% EXCESS	DEPTH	TBG-CSG-D.P. SIZE	WGT.	TYPE	DEPTH	TBG-CSG-D.P. SIZE	WGT.	TYPE	DEPTH	COLLAR DEPTHS SHOE	FLOAT	STAGE

LAST CASING SIZE	WGT.	TYPE	DEPTH	PKR-CMT RET-BR PL-LINER BRAND & TYPE	DEPTH	PERF DEPTH TOP	BTM	TOP CONN. SIZE	THREAD	WELL FLUID TYPE	WGT

CAL. DISPL. VOL. Bbl. TBG.	CSG.	CSG	TOTAL	CAL. PSI BUMP PLUG	CAL. MAX. PSI TO REV	OP. MAX SQ PSI	MAX TBG PSI RATED	OP	MAX CSG PSI RATED	OP	DISPL. FLUID TYPE	WGT	WATER SOURCE

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG., ETC., PRIOR TO CEMENTING: ____

PRESSURE RATE DETAIL

TIME HR: MIN:	PRESSURE - PSI PIPE	ANNULUS	RATE BPM	Bbl FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: CREW ☐ CO. REP. ☐
						TEST LINES PSI
[illegible]	[illegible]			[illegible]	[illegible]	CIRCULATING WELL RIG ☐ WPS ☐
[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	Start Cement
[illegible]	[illegible]					Finish Cement
[illegible]	[illegible]			[illegible]		Start Displacing
[illegible]	[illegible]			[illegible]		Finish Displacing
[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	Start Surface Plug 35 sks

BUMPED PLUG (Y N)	PSI TO BUMP PLUG	TEST FLOAT EQUIP (Y N)	TOTAL Bbl. PUMPED	Bbl. CMT RETURNS/ REVERSED	PSI LEFT ON CSG	SPOT TOP CEMENT	
							SER. SUP. Boyce
							CUSTOMER REP. Joel [illegible]

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

98 JUL -2 PM 1:41

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

ALBUQUERQUE, N.M.

5. Lease Designation and Serial No.
NM 14237

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation
NM078398X

1. Type of Well
☐ Oil Well ☐ Gas Well ☑ Other GAS STORAGE OBSERVATION WELL

8. Well Name and No.
SAN YSIDRO (CLIFF) 15

2. Name of Operator
PNM Gas Services

9. API Well No.
30-043-20161

3. Address and Telephone No.
414 Silver Ave SW Albuquerque NM 87158 (505) 241-4537

10. Field and Pool, or Exploratory Area

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
H 1908 Feet FNL & 618 Feet FEL
SECTION 19, TOWNSHIP 15N, RANGE 1E

11. County or Parish, State
Sandoval, New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
☐ Notice of Intent	☒ Abandonment
☒ Subsequent Report	☐ Recompletion
☐ Final Abandonment Notice	☐ Plugging Back
	☐ Casing Repair
	☐ Altering Casing
	☐ Other
	☐ Change of Plans
	☐ New Construction
	☐ Non-Routine Fracturing
	☐ Water Shut-Off
	☐ Conversion to Injection
	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

AFMSS
Adjud Jerry
Engr
Geo
Surf
Appv

RECEIVED
JUL 23 1998
OIL CON. DIV.
DIST. 3

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

P&A on June 27, 1998

1. SET BRIDGE PLUG AT 2018 FEET. * CEMENTED WITH 110 SACKS (90 SACKS BELOW RETAINER PLUG + 20 SACKS ABOVE RETAINER).
2. SET SURFACE PLUG AT 310 FEET * CEMENTED WITH 35 SACKS OF CEMENT.
3. CLEAN UP AS PER BLM INSTRUCTIONS
4. PLACE ABANDONMENT MARKER

CASING WT. = 15.5 pounds

NOTE: THIS WORK ~~WAS~~ RECEIVED A PRIOR VERBAL APPROVAL TO PERFORM THE ABOVE.

-AL YEPPA WITNESSED THE P&A

14. I hereby certify that the foregoing is true and correct

Signed Joel Lewis Title Senior Engineer Date 6/27/98

(This space for Federal or State office use)

Approved by Patricia M Hoch Title Lands and Mineral Resources Date 7/21/98

Conditions of approval, if any:

Remove any equipment from location.

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.

*See Instruction on Reverse Side

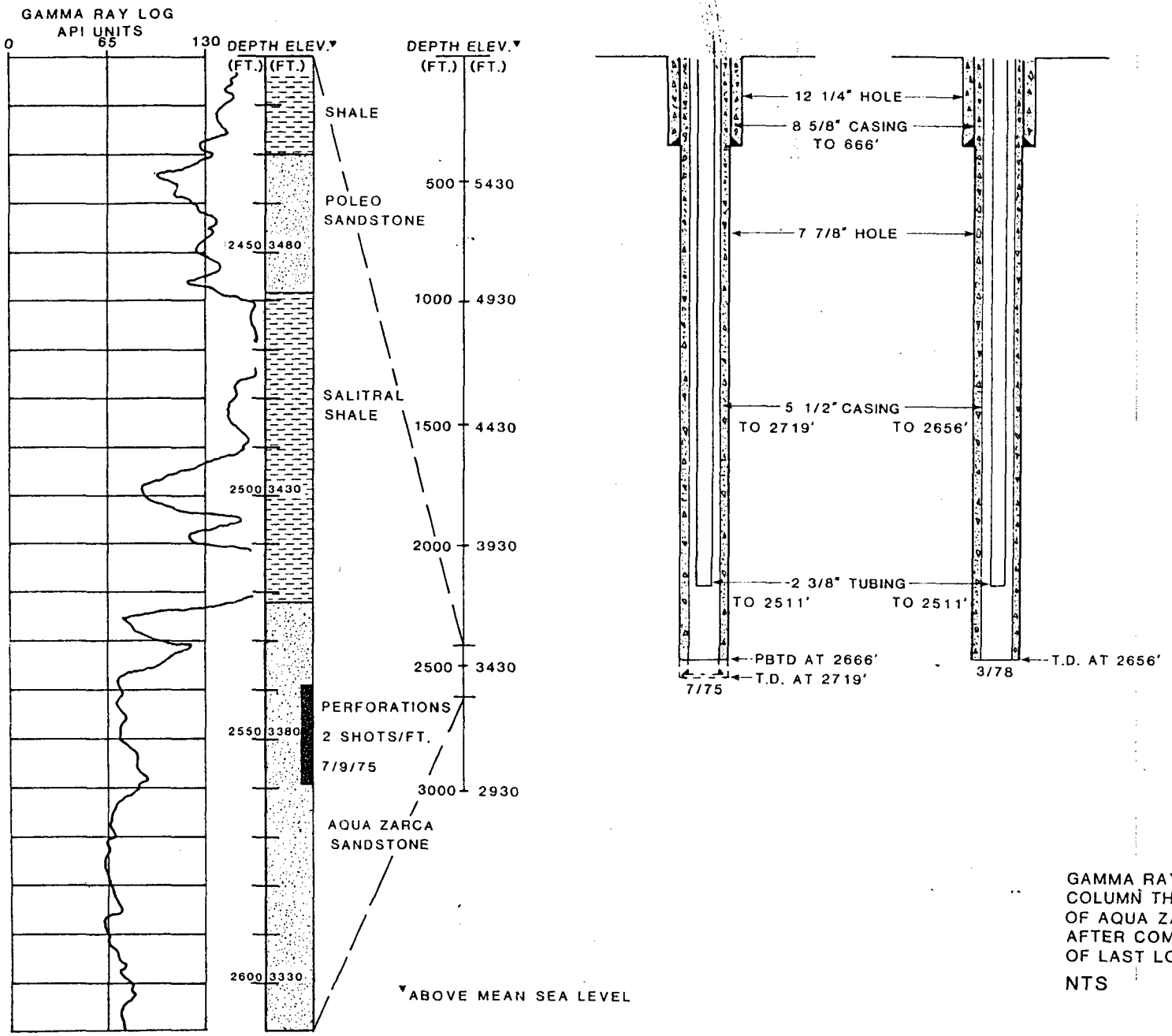


FIGURE B-11
WELL No. 15

GAMMA RAY & STRATIGRAPHIC COLUMN THROUGH POLEO & TOP OF AQUA ZARCA. WELL SCHEMATICS AFTER COMPLETION & AT TIME OF LAST LOG.

NTS

CEMENTERS, INC.
P. O. BOX 302
FARMINGTON, NEW MEXICO 87499

CEMENT JOB DETAIL SHEET

CUSTOMER	DATE	F.R. #	SER. SUP.	TYPE JOB
PNM Gas Services	6-29-98		Boyce	P E A

LEASE & WELL NAME - OCSG	LOCATION	COUNTY
		Sandoval

DRILLING CONTRACTOR RIG #	OPERATOR
Tippie P	

MATERIAL FURNISHED	TYPE OF PLUGS TOP	TYPE OF PLUGS BTM	LIST CSG HARDWARE	SQ MANI FOLD Y N	TOP OF EACH FLUID	PHYSICAL SLURRY PROPERTIES: SLURRY WEIGHT PPG	SLURRY YIELD FT³	WATER GPS	PUMP TIME HR: MIN:	Bbl SLURRY	Bbl MIX WATER
20 SKS Below Rat											
Above Rat											
25 SK Surface Plug											
Pit											

Available Mix Water	Bbl.	Available Displ. Fluid	Bbl.	TOTAL

HOLE SIZE	HOLE % EXCESS	HOLE DEPTH	TBG-CSG-D.P. SIZE	TBG-CSG-D.P. WGT.	TBG-CSG-D.P. TYPE	TBG-CSG-D.P. DEPTH	TBG-CSG-D.P. SIZE	TBG-CSG-D.P. WGT.	TBG-CSG-D.P. TYPE	TBG-CSG-D.P. DEPTH	COLLAR DEPTHS SHOE	COLLAR DEPTHS FLOAT	COLLAR DEPTHS STAGE

LAST CASING SIZE	LAST CASING WGT.	LAST CASING TYPE	LAST CASING DEPTH	PKR-CMT RET-BR PL-LINER BRAND & TYPE	PKR-CMT RET-BR PL-LINER DEPTH	PERF DEPTH TOP	PERF DEPTH BTM	TOP CONN. SIZE	TOP CONN. THREAD	WELL FLUID TYPE	WELL FLUID WGT

CAL. DISPL. VOL. Bbl. TBG.	CAL. DISPL. VOL. Bbl. CSG.	CAL. DISPL. VOL. Bbl. CSG	CAL. DISPL. VOL. Bbl. TOTAL	CAL. PSI BUMP PLUG	CAL. MAX. PSI TO REV	OP. MAX SQ PSI	MAX TBG PSI RATED	MAX TBG PSI OP	MAX CSG PSI RATED	MAX CSG PSI OP	DISPL. FLUID TYPE	DISPL. FLUID WGT	WATER SOURCE

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG., ETC., PRIOR TO CEMENTING: _____

PRESSURE RATE DETAIL TIME HR: MIN:	PRESSURE - PSI PIPE	PRESSURE - PSI ANNULUS	RATE BPM	Bbl FLUID PUMPED	FLUID TYPE	EXPLANATION
						SAFETY MEETING: CREW ☐ CO. REP. ☐
						TEST LINES PSI
						CIRCULATING WELL RIG ☐ WPS ☐
2:30	600		3	30	Water	Water Ahead
2:35	700		3		Cement	Start Cement
2:45	0			2 bbl		Finish Cement
2:46	0				Water	Start Displacing
2:50	1800			4	"	Finish Displacing

BUMPED PLUG Y N	PSI TO BUMP PLUG	TEST FLOAT EQUIP. Y N	TOTAL Bbl. PUMPED	Bbl. CMT RETURNS/ REVERSED	PSI LEFT ON CSG	SPOT TOP CEMENT	SER. SUP.	CUSTOMER REP.
							Boyce	Joel Levine

APPLICATION FOR AUTHORIZATION TO INJECT
PNM GAS RESOURCES
SAN YSIDRO #6 WELL

ATTACHMENT VII. OPERATIONS PLAN

1. AVERAGE INJECTION RATE:
   36,000 GALLONS OF WATER PER DAY (857 BWPD) WITH MAXIMUM OF 46,000 GALLONS OF WATER PER DAY (1,095 BWPD)

2. THE SYSTEM WILL BE OPEN

3. AVERAGE INJECTION PRESSURE:
   500 PSI AND THE MAXIMUM WILL BE 700 PSI

4. THE SOURCE OF THE INJECTION WATER WILL BE PRODUCED WATERS FROM THE SAN YSIDRO GAS STORAGE UNIT WELLS WITHIN THE IMMEDIATE AREA (T-15-N, R-1-E) IN SANDOVAL COUNTY, NEW MEXICO. THE SOURCE OF INJECTION WATER IS FROM THE AQUA ZARCA SANDSTONE FORMATION OF THE SAN YSIDRO GAS STORAGE UNIT WELLS. THE WATER TO BE INJECTED IS INTO THE EXACT AQUA ZARCA FORMATION THAT THE WATER WAS INITIALLY PRODUCED FROM. THEREFORE, SINCE THE PRODUCING WATERS AND INJECTIONS WATERS FORMATION ARE THE SAME AQUA ZARCA PRODUCING FORMATION THE COMPATIBILITY SHOULD BE THE SAME.

5. THE INJECTION IS FOR DISPOSAL PURPOSE INTO A ZONE (AQUA ZARCA SANDSTONE) THAT IS NOT PRODUCTING OIL OR GAS WITHIN ONE (1) MILE OF THE PROPOSED INJECTION WELL. A WATER ANALYSIS OF THE DISPOSAL WATER ZONE IS IN ATTACHMENT XI. AND ATTACHMENT VII-5.

ATTACHMENT VII-5. WATER ANALYSIS OF WATER INJECTION ZONE

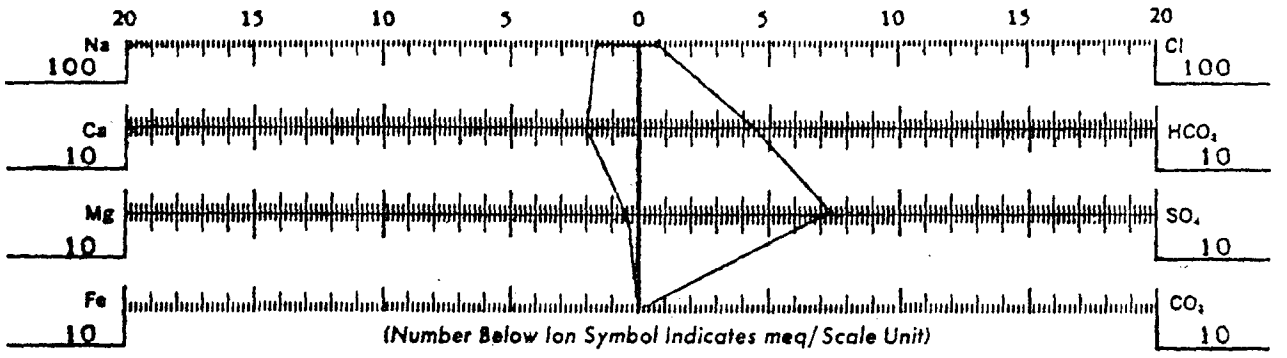
PRODUCTION PROFITS
DIVISION OF SONICS INTERNATIONAL, INC.
Petroleum Service Laboratory
DALLAS, TEXAS

Client Southern Union Production Company
County _____ State New Mexico
Field _____ Lease San Ysidro No. 4 Well No. _____
Formation Aqua Zarca Zone Depth 2260-2280 ft. Perf. _____
Source of Sample _____
Date Collected Rec: 3-6-72 by _____

REPORT OF WATER ANALYSIS

Lab. Number P-3483 Specific Gravity 1.0105 pH 7.3
Total Dissolved Solids 13227 Resistivity (Ohmmeters at 68° F.) .619 Hydrogen Sulfide ABSENT

DISSOLVED MINERAL ANALYSIS PATTERN



DISSOLVED SOLIDS ANALYSIS

	mg/l	meq/l
Total Solids (Calc.)	13227	
Sodium (Calc.)	3830	166.4
Iron (Dissolved)	19	.7
Barium	-	-
Calcium	425	21.2
Magnesium	63	5.2
Chloride	2700	76.1
Bicarbonate	2590	42.5
Carbonate	0	0.
Sulfate	3600	74.9

TOTAL IRON _____ -

PRECIPITATED AND SUSPENDED SOLIDS ANALYSIS

			mg/l
Total Undissolved Solids			
Oil (Solvent Soluble)			
Acid Solubles			
Iron as			
Calcium as			
Magnesium as			
Sulfate as			
Organic (Ignition Loss)			
Acid Insolubles			
Sand & Clay			
Barium Sulfate	(Quan.)		
	(Qual.)		

SOLUBILITY CALCULATIONS

Calcium Carbonate Stability Index at 77° F 1.26 Scaling Tendency PØS.
Calcium Sulfate Stability at 95°F
Concentration 21.2 meq/l. Calc. Solubility 29.24 meq/l. Percent Saturation 72.50
Barium Sulfate Stability at 95° F
Concentration _____ meq/l. Calc. Solubility _____ meq/l. Percent Saturation _____

REMARKS

APPLICATION FOR AUTHORIZATION TO INJECT
PNM GAS RESOURCES
SAN YSIDRO #6

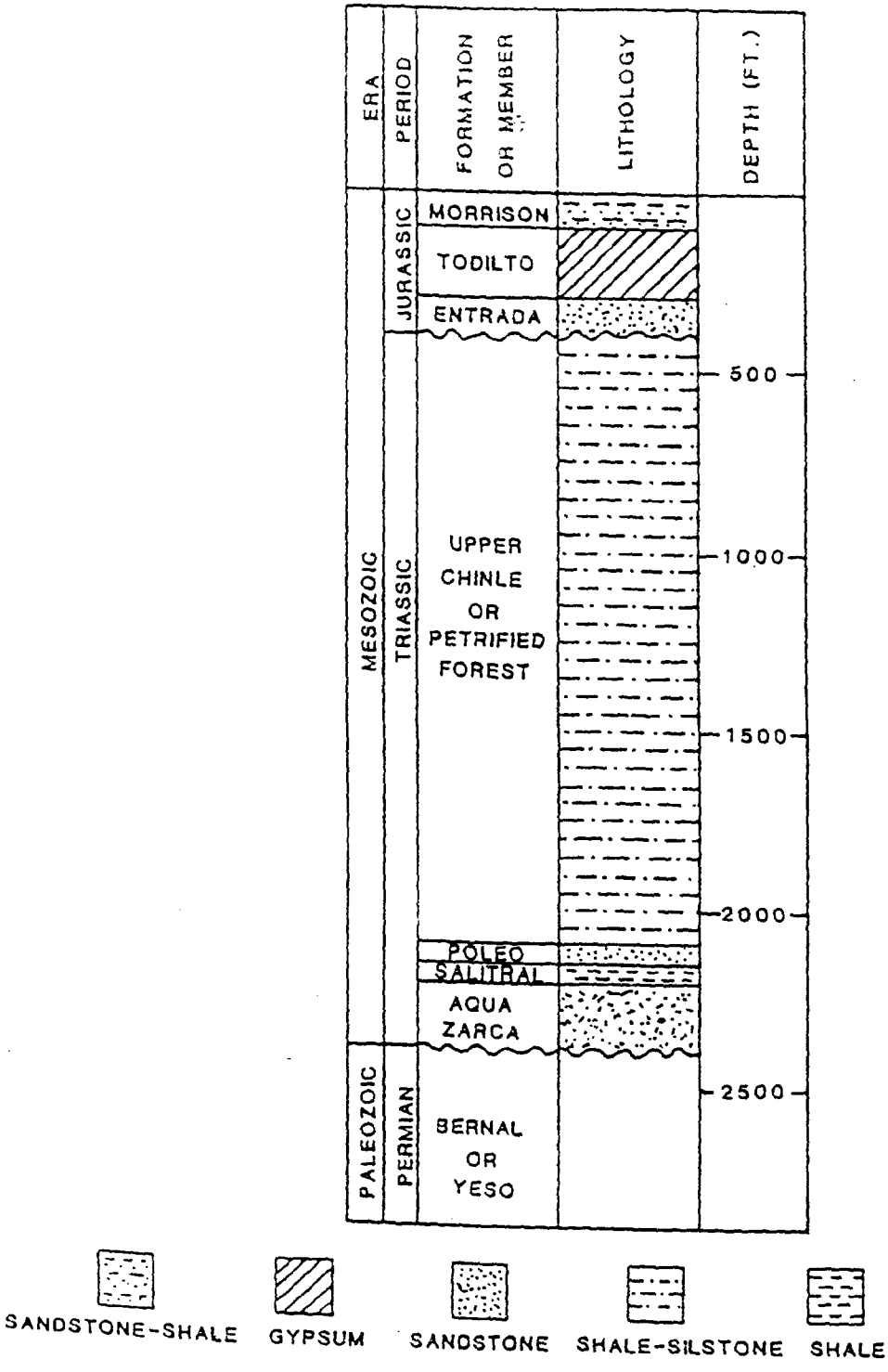
ATTACHMENT VIII. GEOLOGIC DATA – SAN YSIDRO STRATIGRAPHY AND LITHOLOGY

THE PROPOSED INJECTION INTERVAL IS THE AQUA ZARCA SANDSTONE FORMATION FROM APPROXIMATELY 2180' TO 2310'. THERE IS NO KNOWN DRINKING WATER SOURCES BELOW THE ENTRADA FORMATION.

THE EXPECTED FORMATION DEPTHS IN THE INJECTION WELL (SAN YSIDRO #6) ARE AS FOLLOWS:

FORMATION	DEPTH, FT.
MORRISON	0 - 84
TOLDILTO	85 –294
ENTRADA	295 – 400
UPPER CHINLE OR PETRIFIED FOREST	401 – 2123
POLEO	2124 – 2166
SALITRAL	2167 – 2179
AQUA ZARCA	2179 - 2397
BERNAL OR YESO	2398 - 2902

SAN YSIDRO STORAGE PROJECT
STRATIGRAPHY



APPLICATION FOR AUTHORIZATION TO INJECT
PNM GAS RESOURCES
SAN YSIDRO #6

ATTACHMENT IX. PROPOSED STIMULATION

THERE WILL BE NO PROPOSED STIMULATION IN THE SAN YSIDRO #6 INJECTION WELL. THIS WELL IS ALREADY AN EXISTING COMPLETED WELL.

APPLICATION FOR AUTHORIZATION TO INJECT
PNM GAS RESOURCES
SAN YSIDRO #6

ATTACHMENT X. WELL LOGGING AND TEST DATA OF THIS WELL

WELL LOGS FOR THE SAN YSIDRO #6 WELL HAVE ALREADY BEEN SUBMITTED TO THE NMOCD ~ 1-22-1974.

ATTACHED IS LOGGING DATA PERTAINING TO SAN YSIDRO #6 WELL. INCLUDED IN THE ATTACHMENT ARE THE :

- GAMMA RAY LOG
- GAMMA RAY NEUTRON LOG

ATTACHMENT XI. CHEMICAL ANALYSIS OF FRESH WATER FROM WELLS WITHIN ONE MILE OF INJECTION WELL

Well file

PRODUCTION PROFITS
DIVISION OF SONICS INTERNATIONAL, INC.
Petroleum Service Laboratory
DALLAS, TEXAS

Client Southern Union Production Company

County State

Field No. 2 San Ysidro Lease Well No.

Formation Depth Perf.

Source of Sample Aqua Zarco No. 2 San Ysidro S.U.P. from Perforations 2236ft.-2260ft.

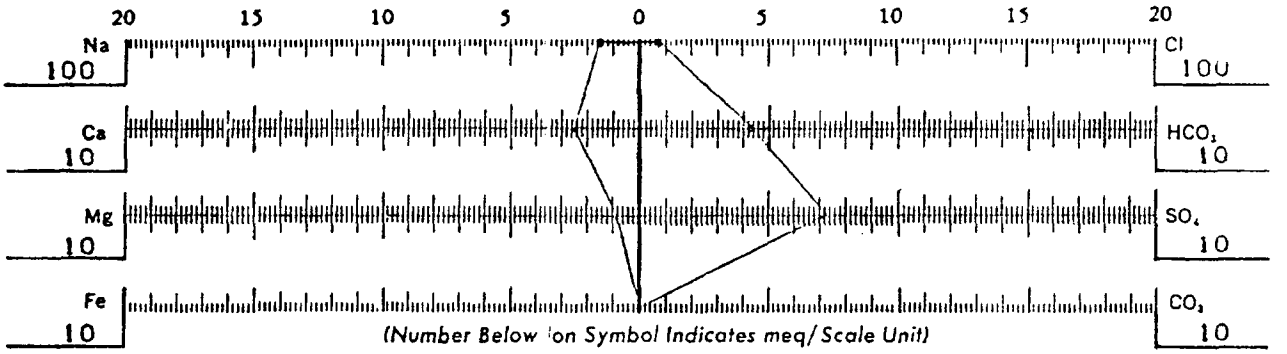
Date Collected 2-9-72 by

REPORT OF WATER ANALYSIS

Lab. Number P-3416 Specific Gravity 1.0116 pH 6.9

Total Dissolved Solids 13047 Resistivity (Ohmmeters at 68° F.) .692 Hydrogen Sulfide ABSENT

DISSOLVED MINERAL ANALYSIS PATTERN



DISSOLVED SOLIDS ANALYSIS

	mg/l	meq/l
Total Solids (Calc.)	13047	
Sodium (Calc.)	3640	158.4
Iron (Dissolved)	0	0.
Barium	0	0.
Calcium	500	24.9
Magnesium	97	8.0
Chloride	2660	75.0
Bicarbonate	2650	43.5
Carbonate	0	0.
Sulfate	3500	72.8

TOTAL IRON -

PRECIPITATED AND SUSPENDED SOLIDS ANALYSIS

	mg/l
Total Undissolved Solids	
Oil (Solvent Soluble)	
Acid Solubles	
Iron as	
Calcium as	
Magnesium as	
Sulfate as	
Organic (Ignition Loss)	
Acid Insolubles	
Sand & Clay	
Barium Sulfate (Quan.)	
(Qual.)	

SOLUBILITY CALCULATIONS

Calcium Carbonate Stability Index at 77° F .91 Scaling Tendency POS.

Calcium Sulfate Stability at 95°F

Concentration 24.9 meq/l. Calc. Solubility 30.84 meq/l. Percent Saturation 80.73

Barium Sulfate Stability at 95° F

Concentration meq/l. Calc Solubility meq/l. Percent Saturation

REMARKS

COOPERATIVE EXTENSION SERVICE • NEW MEXICO STATE UNIVERSITY • U. S. DEPARTMENT OF AGRICULTURE

WATER ANALYSIS REPORT

[X] Test No. 1 - Livestock

[ ] Test No. 2 - Domestic

Lab #600

NAME Southern Union Gas DATE 3/30/72

ADDRESS Bloomfield, CITY New Mexico 87413

Sample No. 1

pH	6.5	
Total Soluble Salts: EC x 10^6	700	
Parts per Million	448	or .04 %
Total Dissolved Solids	_____ ppm*	or _____ tons per acre foot of water
Hardness	_____ ppm	

*ppm - parts per million

The U. S. Public Health Department recommends the following for domestic use water:
Hardness - up to 500 parts per million
Total dissolved solids - 500 parts per million with up to 1000 parts per million usable.

NOTE:
Some well waters should be checked for pathological organisms and for physiological effect.

REMARKS:
Your water is classified as satisfactory for livestock use.

Your water is classified as _____ for domestic use.

C. D. Leedy
Extension Soils Specialist

WIRELINE SERVICES
GEARHART-OWEN

Gamma-Ray Neutron Log

COMPANY Gas Company of New Mexico
WELL San Ysidro - 6
FIELD Gas Storage
COUNTY Sandoval STATE New Mexico

LOCATION 620' FNL, 1420' FWL
SEC 20 TWP 15 N RGE 1 E

PERMANENT DATUM Ground Level ELEV. 5722
LOG MEASURED FROM K.B. 11 FT. ABOVE PERM. DATUM
DRILLING MEASURED FROM

ELEV.: K.B. 5733
D.F.
G.L. 5722

Date	3-__-78
Run No.	One
Type Log	G. R. N.
Depth Driller	---
Depth Logger	2137
Bottom logged interval	2136
Top logged interval	2000
Type fluid in hole	Gas Water
Max rec. temp. deg. F	---
Operating rig time	1 Hr.
Recorded by	Lon Austin
Witnessed by	Clan

Run No.	Bit	Bore Hole Record From	To	Size	Wgt.

Casing Collar

DATUM: +

2300

2400

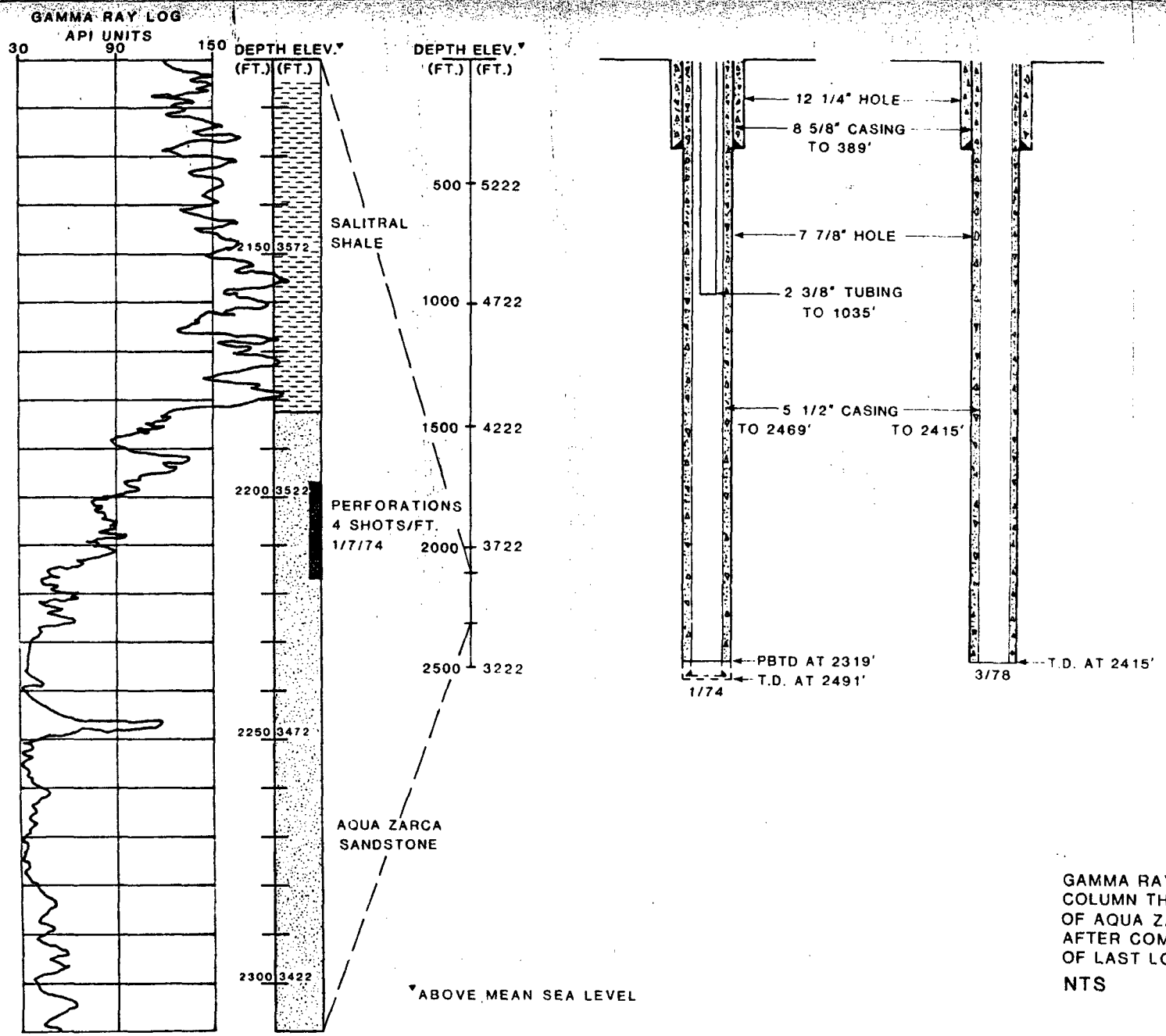


FIGURE B-6
WELL No. 6

GAMMA RAY & STRATIGRAPHIC COLUMN THROUGH POLEO & TOP OF AQUA ZARCA. WELL SCHEMATICS AFTER COMPLETION & AT TIME OF LAST LOG.

NTS

PRODUCTION PROFITS

DIVISION OF SONICS INTERNATIONAL, INC.

Petroleum Service Laboratory

DALLAS, TEXAS

Client Southern Union Production Company

County Sandoval State New Mexico

Field Wildcat Lease San Ysidro Well No. 1

Formation ~~Agua Zarco~~ Depth 2283-2399 Perf.

Source of Sample D. S. T

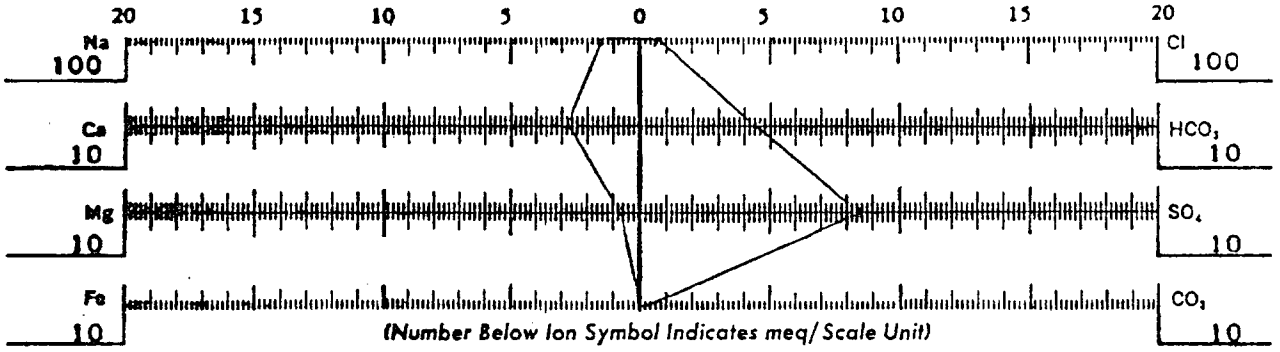
Date Collected 11-6-71 by

REPORT OF WATER ANALYSIS

Lab. Number P-3367 Specific Gravity 1.0111 pH 7.4

Total Dissolved Solids 13358 Resistivity (Ohmmeters at 68° F.) .700 Hydrogen Sulfide ABSENT

DISSOLVED MINERAL ANALYSIS PATTERN



DISSOLVED SOLIDS ANALYSIS

	mg/l	meq/l
Total Solids (Calc.)	13358	
Sodium (Calc.)	3620	157.5
Iron (Dissolved)	9	.3
Barium	-	-
Calcium	569	28.4
Magnesium	90	7.4
Chloride	2270	64.0
Bicarbonate	2690	44.1
Carbonate	0	0.
Sulfate	4110	85.5

TOTAL IRON -

PRECIPITATED AND SUSPENDED SOLIDS ANALYSIS

	mg/l
Total Undissolved Solids	
Oil (Solvent Soluble)	
Acid Solubles	
Iron as	
Calcium as	
Magnesium as	
Sulfate as	
Organic (Ignition Loss)	
Acid Insolubles	
Sand & Clay	
Barium Sulfate (Quan.)	
(Qual.)	

SOLUBILITY CALCULATIONS

Calcium Carbonate Stability Index at 77° F 1.46 Scaling Tendency POS.

Calcium Sulfate Stability at 95°F

Concentration 28.4 meq/l. Calc. Solubility 29.05 meq/l. Percent Saturation 97.76

Barium Sulfate Stability at 95° F

Concentration ____ meq/l. Calc. Solubility ____ meq/l. Percent Saturation ____

REMARKS

TC

Tech: _____

HALLIBURTON DISTRICT LABORATORY
WATER ANALYSIS DATA SHEET

Analysis Date: _____ Report No. _____

To Gas Company of New Mexico

Submitted By _____ Date Received _____

Well Number San Ysidro #8

Location _____ Formation _____

Aliquot or Dilution	Ion	Calculation	Data for Report
	Fe Log		nil
	K %T		
	Na %T		
5	Ca	(1000/5)(3.5)(.5402)	378.1
5	Mg	(1000/5)(4.4)(.3284)	288.9
5	Cl	(1000/5)(10.0)(1.9293)	3,847.8
5	SO4 Log	116 (20)	2,320.0
	CO3		
100	HCO3	(1000/100)(61)(14.2)(.24)	2,078.9
	TDS		

Specific Gravity 1.009

pH 7.21

Rw 0.83 at 69 °F

NOTICE

This report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or of any calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data calculations or opinions.

PRODUCTION PROFITS
DIVISION OF SONICS INTERNATIONAL, INC.
Petroleum Service Laboratory
DALLAS, TEXAS

Client Southern Union Production Company

County _____ State New Mexico

Field _____ Lease San Ysidro No. 4 Well No. _____

Formation Aqua Zarca Zone Depth 2260 - 2280 ft Perf. _____

Source of Sample _____

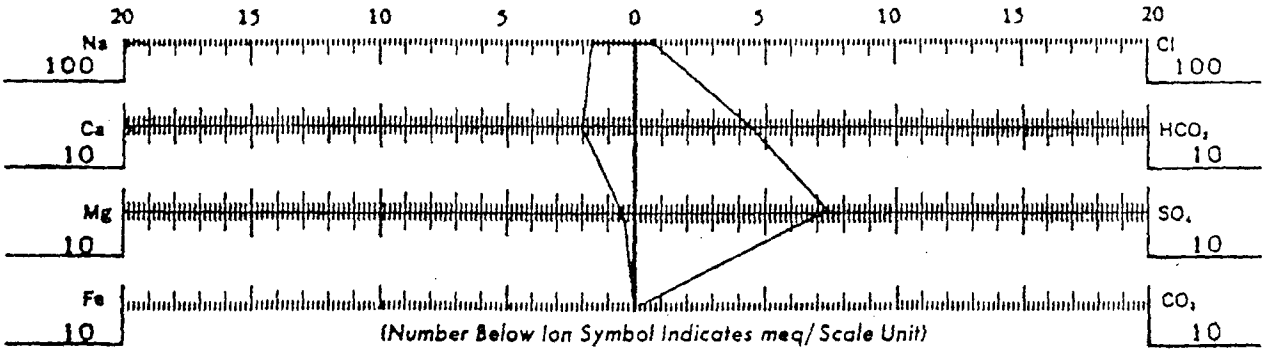
Date Collected Rec: 3-6-72 by _____

REPORT OF WATER ANALYSIS

Lab. Number P-3483 Specific Gravity 1.0105 pH 7.3

Total Dissolved Solids 13227 Resistivity (Ohmmeters at 68° F.) .619 Hydrogen Sulfide ABSENT

DISSOLVED MINERAL ANALYSIS PATTERN



DISSOLVED SOLIDS ANALYSIS

	mg/l	meq/l
Total Solids (Calc.)	13227	
Sodium (Calc.)	3830	166.4
Iron (Dissolved)	19	.7
Barium	-	-
Calcium	425	21.2
Magnesium	63	5.2
Chloride	2700	76.1
Bicarbonate	2590	42.5
Carbonate	0	0.
Sulfate	3600	74.9

TOTAL IRON _____ -

PRECIPITATED AND SUSPENDED SOLIDS ANALYSIS

	mg/l
Total Undissolved Solids	
Oil (Solvent Soluble)	
Acid Solubles	
Iron _____ as _____	
Calcium _____ as _____	
Magnesium _____ as _____	
Sulfate _____ as _____	
_____	
Organic (Ignition Loss)	
Acid Insolubles	
Sand & Clay	
Barium Sulfate (Quan.)	
(Qual.) _____	

SOLUBILITY CALCULATIONS

Calcium Carbonate Stability Index at 77° F 1.26 Scaling Tendency POS.

Calcium Sulfate Stability at 95°F
Concentration 21.2 meq/l. Calc. Solubility 29.34 meq/l. Percent Saturation 72.50

Barium Sulfate Stability at 95° F
Concentration _____ meq/l. Calc. Solubility _____ meq/l. Percent Saturation _____

REMARKS

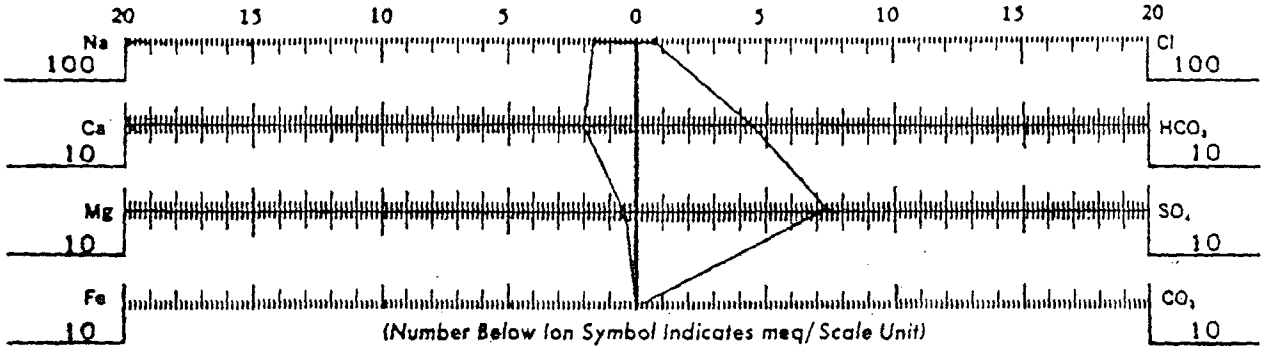
PRODUCTION PROFITS
DIVISION OF SONICS INTERNATIONAL, INC.
Petroleum Service Laboratory
DALLAS, TEXAS

Client Southern Union Production Company
County ____ State New Mexico
Field ____ Lease San Ysidro No. 4 Well No. ____
Formation Aqua Zarca Zone Depth 2260 - 2280 ft. Perf. ____
Source of Sample ____
Date Collected Rec: 3-6-72 by ____

REPORT OF WATER ANALYSIS

Lab. Number P-3483 Specific Gravity 1.0105 pH 7.3
Total Dissolved Solids 13227 Resistivity (Ohmmeters at 68° F.) .619 Hydrogen Sulfide ABSENT

DISSOLVED MINERAL ANALYSIS PATTERN



DISSOLVED SOLIDS ANALYSIS

	mg/l	meq/l
Total Solids (Calc.)	13227	
Sodium (Calc.)	3830	166.4
Iron (Dissolved)	19	.7
Barium	-	-
Calcium	425	21.2
Magnesium	63	5.2
Chloride	2700	76.1
Bicarbonate	2590	42.5
Carbonate	0	0.
Sulfate	3600	74.9

TOTAL IRON ____ -

PRECIPITATED AND SUSPENDED SOLIDS ANALYSIS

	mg/l
Total Undissolved Solids	
Oil (Solvent Soluble)	
Acid Solubles	
Iron ____ as ____	
Calcium ____ as ____	
Magnesium ____ as ____	
Sulfate ____ as ____	
____ ____	
Organic (Ignition Loss)	
Acid Insolubles	
Sand & Clay	
Barium Sulfate (Quan.)	
(Qual.) ____	

SOLUBILITY CALCULATIONS

Calcium Carbonate Stability Index at 77° F 1.26 Scaling Tendency POS.
Calcium Sulfate Stability at 95°F
Concentration 21.2 meq/l. Calc. Solubility 29.34 meq/l. Percent Saturation 72.50
Barium Sulfate Stability at 95° F
Concentration ____ meq/l. Calc. Solubility ____ meq/l. Percent Saturation ____

REMARKS

APPLICATION OF AUTHORIZATION TO INJECT

PNM GAS RESOURCES

SAN YSIDRO #6

PART XII. STATEMENT OF GEOLOGICAL ENGINEERING DATA

I HAVE EXAMINED ALL AVAILABLE GEOLOGIC AND ENGINEERING DATA WITH RESPECT TO OPEN FAULTS OR ANY OTHER HYDROLOGIC CONNECTION BETWEEN THE DISPOSAL ZONE AND ANY UNDERGROUND SOURCE OF DRINKING WATER.

FIGURE #1 SHOWS A STRUCTURE MAP OF THE SAN YSIDRO UNDERGROUND GAS STORAGE SITE. THE MAP THAT DEPICTS THE WELLS AND THE IDENTIFIED FAULTS IN THE IMMEDIATE AREA.

REPORT #1 -- FOLDS & FAULTS
THIS REPORT WAS COMPLIED BY PB-KBB INC. (ENGINEERING CONSULTING COMPANY) IN JULY 1984 FROM A REPORT ENTITLED " SAN YSIDRO UNDERGROUND GAS STORAGE FIELD". THIS REPORT OUTLINES HOW THE FOLDING AND FAULTING RESULTED IN THE SAN YSIDRO UNDERGROUND GAS STORAGE FOR GAS TO BE STORED.

REPORT #2 -- RESERVOIR PERFORMANCE ANALYSIS
THIS REPORT WAS COMPILED BY INTERA PETROLEUM PRODUCTION INC. (ENGINEERING COMPANY) IN APRIL 1993. THIS REPORT ENTITLED "EVALUATION AND RESERVOIR SIMULATION OF THE SAN YSIDRO UNDERGROUND GAS STORAGE RESERVOIR" INDICATES THAT THERE ARE FAULTS IN THE IMMEDIATE AREA OF THE INJECTED ZONE. THE MAIN CONCLUSION OF THE ANALYSIS INDICATED THAT THERE WOULD BE NO GAS LOST ACROSS THE EAST LYING FAULT SO LONG AS THE GAS STORED IN THE RESERVOIR IS LESS THAN 5.6 BCF.

PRESENTLY, PNM IS LIMITING THE WORKING GAS TO ONLY 1.2 BCF IN THE UNDERGROUND GAS STORAGE SITE.

Joel Levine

JOEL LEVINE
SENIOR ENGINEER

2-7-2005

DATE

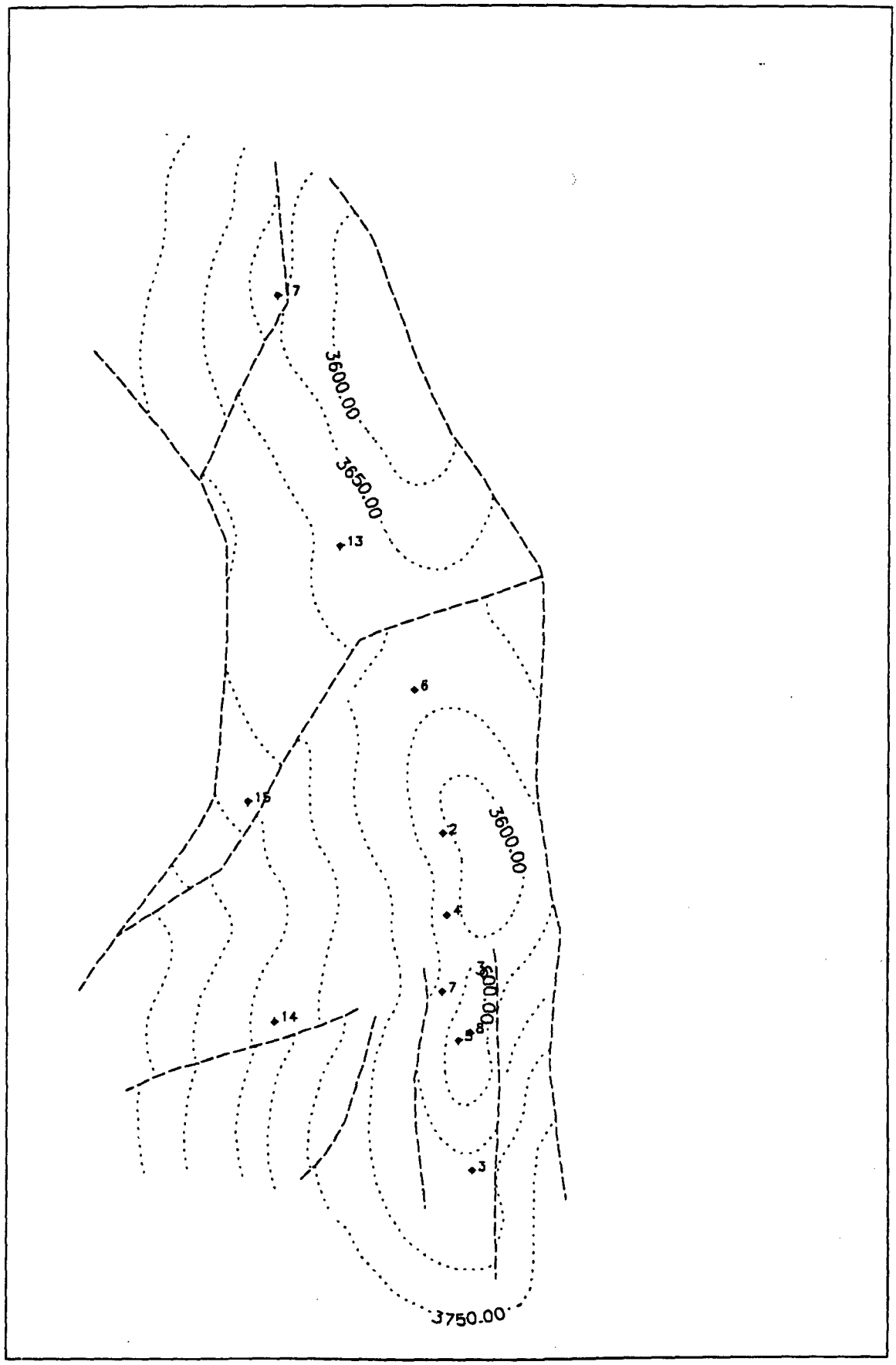


FIGURE 1. STRUCTURE MAP

1. Folds/Faults

Tectonic activity during the Laramide Orogeny is responsible for most of the structural change in the Las Milpas area since deposition of the Morrison Formation which is the uppermost strata in most of the field.

Laramide activity began with gradual drifting of the Colorado Plateau to the northeast (Kelley[6]). Conditions for this were supplied in two forms. Compression in the Cordilleran foldbelt west and south of the plateau provided a force in the northeast direction. On the extreme eastern side of the plateau lay the Rocky Mountains. At the junction of the two, there existed the north-trending Pennsylvanian Penasco Uplift which was located at approximately the same position as the present Nacimiento Uplift. This may have served as a line of weakness along which movement could occur. As plateau movement was taking place a right-lateral shift began.

A right-lateral shift is simply a horizontal rotation of a structure (in this case, the Colorado Plateau) in the clockwise direction. Northwest-trending folds would be the first development phase of this shift. The San Ysidro anticline and the Canada de Las Milpas syncline in the Las Milpas area were probably part of this folding.

With continued movement of the plateau, tension fractures showing a northeast trend developed perpendicular to the folds. At this point in the tectonic activity, interpretation becomes complex. One interpretation (Kelley[6]) says that the tension fractures continued development immediately into northeast-trending faults and were part of late Laramide activity. Reutschilling[11], though, hypothesized that further development of the fractures ceased, along with ter-

mination of movement of the Colorado Plateau. These fractures were then reactivated during Miocene development of the Rio Grande rift. Regardless of the time of development of the fractures, many of the northeast trending faults in and around the Las Milpas area and the Las Milpas fault itself, were probably developed sometime in this time frame.

After development of any faults in the Las Milpas area, particularly the Las Milpas Fault, reactivation of these faults (if it occurred) could have developed in several ways. One cause could have been earthquake activity. Whether significant earthquake activity has occurred since the start of the San Ysidro project would be an important question. An earthquake recorded on January 5, 1976, with its epicenter approximately one hundred miles northwest of the project may have been significant.

A table was complied by the New Mexico Bureau of Mines and Mineral Resources on earthquake activity in New Mexico from 1962 - 1977 (Sanford, et. al., pp. 10-11[13]). Magnitudes ranging from 1.5 - 4.29 on a scale of 12 were recorded (therefore, low activity). The one that occurred northwest of the gas storage area had a magnitude of 4.1. Approximately 95 stations in New Mexico and the surrounding states recorded the earthquake. An average of 10 stations with a high of 47 stations recorded those in the remainder of the table. Figure 5, page 16, shows the location of this earthquake.

Theoretically, earthquake activity can cause a fault activation or reactivation even if only by a few inches. The January 1976 earthquake apparently did not have this affect on those faults in the Las Milpas area. Well pressures in the area had previously started their decline and no drastic

change was noted in 1976. If significant fault movement occurred at the storage facility, one would expect a noticeable change in pressures since the wells are surrounded by fault zones. That earthquake does not appear to have directly affected the field pressures.

2. Surface

PB-KBB Inc. has reviewed Woodward's[16] report on surface geology and find it to be the most comprehensive one for the Las Milpas area. The geologic map contained with the report confirms the presence of a fault on the east side of the storage structure. Several faults are shown to the south which should be the northern portion of the Rio Puerco Fault Zone. No faults are shown lying directly between well #17 and #13.

3. Subsurface

Tops of all formations occur at different elevations at each one of the wells in and around the storage area as shown from geophysical well logs. As one example, the top of the Aqua Zarca is not continuous at one elevation. On the west side of the anticlinal axis, the beds dip gently to the southwest as shown on Figure 6, page 18. On the east side of the anticline, the formation rolls over towards the fault as shown by well #5 and #8 in the same figure. This roll-over was also shown in holes that were later drilled to ±500' into the Chinle east of the original 12 holes. Though this cross-section shows a typical arrangement for bedding due to an anticline, a cross-section along the N-S axis is not quite so "typically" uniform.

Along the axis of the anticline, the Aqua Zarca alternates high-low-high-low, etc., from northwest to southeast along a datum of 3500' elevation. A N-S cross-section using geophysical well logs shows the top of the Aqua Zarca (Figure 7, page 19).

Differences in elevations may have existed prior to Aqua Zarca deposition or occurred due to later folding or faulting of the structure. PB-KBB Inc. has found no evidence that faulting had much to do with elevation difference between holes.

From conclusions drawn on geologic studies in the surrounding area, faulting in the Las Milpas area either occurred prior to Aqua Zarca deposition or during late or post Laramide Orogeny which took place after deposition of the Upper Morrision. As shown in Figure 7, page 19, the Aqua Zarca shows its highest elevation in well #17. If faulting after deposition was significant, the Morrison Formation in the upper portion of the hole should also be higher than in the other wells in the field. This is not the case. An examination of drill cutting reports shows the Morrison is lower or of the same elevation in well #17 than in the other holes along the axis of the anticline. Given both the time faulting was to have occurred and examination of the drill cutting reports, the evidence points towards no significant faulting interrupting the bedding along the axis of the anticline. This would rule out a fault between wells #17 and #6 or #13. (See Appendix A.)

After deposition of the Aqua Zarca was complete, the structure had its high at the present location of well #17. As the overlying formations were being deposited in the Las Milpas area, they grew to a greater thickness to the south of well #17. In other words, that area to the south (which contains the present locations of the other storage field wells) lay in a basin relative to well #17.

When later Morrison deposition began, the elevation of the area around the present location of well #17 was then at or below the elevation of the area to the south.

RESERVOIR PERFORMANCE ANALYSIS

Before presenting a detailed analysis of the performance of the Las Milpas gas storage reservoir, one point must be stressed. In the Model Calibration section, gas loss across the Las Milpas fault was mentioned as a key factor. While it is Intera's opinion that this gas loss in indeed occurring across the fault, it is quite possible the loss could be occurring in some other fashion such as vertically through fractures in the reservoir. Given the available field data, it is impossible to determine the actual cause of the lost gas with 100% certainty. Further, it is very unlikely that the lost gas will ever be recovered, whatever the cause. What is important, is to provide some mechanism for this gas loss in the simulation model so that reservoir performance can be adequately described. This has been done by allowing gas flow across the Las Milpas fault.

Figure 32 illustrates the gas in place in the storage reservoir versus time and the gas lost across the spillpoint over time. The spillpoint is defined as the large fault running predominately west to east through the center of the field between Wells 6 and 13 (Figure 16). Thus, the "storage reservoir" would then be that part of the field south of this fault. To this point, discussion has concentrated primarily on gas lost across the Las Milpas fault. However, because of the spillpoint and the observed breakthrough of gas at Well 17, gas is obviously being lost from the storage reservoir to the north, as well. Figure 32 shows that this gas loss was not significant, though, and was confined to the one event in 1975 which led to the observed gas in Well 17.

There are several key points of interest in Figure 32. First, the plot on the left shows the magnitude of the gas loss across the spillpoint to be approximately 250 MMCF. This loss of gas occurred when the volume of gas in the storage reservoir exceeded 5.6 BCF, as indicated by the maximum point on the plot on the right. In addition, from 1980 on the minimum value of gas in place in the storage reservoir is approximately 3.6 BCF. Therefore, the base gas volume in the storage reservoir is 3.6 BCF and the maximum possible useable working volume is roughly 2.0 BCF (5.6-3.6=2.0). The large value of base gas is due primarily to the high residual gas saturation of 41% associated with the Aqua Zarca formation.

DECEMBER 2, 2004

WILL JONES
ENGINEER
NEW MEXICO OIL CONSERVATION DIVISION
1220 S. ST. FRANCIS DR.
SANTA FE, NM. 87505

RE: PRODUCED WATER INJECTION
PUBLIC SERVICE COMPANY OF NEW MEXICO
SAN YSIDRO GAS STORAGE PROJECT
SANDOVAL COUNTY, NM.

DEAR MR. JONES;

THIS LETTER IS BEING SENT AS A THIRD PARTY EVALUATION OF THE FEASIBILITY OF WATER REINJECTION AT PNM's SAN YSIDRO GAS STORAGE PROJECT. THE PURPOSE IS TO PROVIDE ADDITIONAL DISCUSSION AND SUPPORTING DOCUMENTATION FOR THE APPROVAL OF PNM's INJECTION PERMIT APPLICATION.

BACKGROUND:

THE FOLLOWING INFORMATION WAS PROVIDED BY PNM AND IS THE BASIS OF THIS ANALYSIS:

-------SAN YSIDRO GAS STORAGE PROJECT IS LOCATED IN TOWNSHIP 15N RANGE 1E, SANDOVAL COUNTY, NEW MEXICO.

-------EXISTING WELLS ARE LOCATED IN SECTIONS 17, 18, 19, 20 AND 29. ATTACHMENT NO. 1

-------APPROXIMATELY 450 MMSCF OF GAS IS PRESENTLY STORED AT THE PROJECT.

-------STORED GAS IS CONTAINED IN THE AQUA ZARCA FORMATION. ATTACHMENT NO. 2

-------PRESENT RESERVIOR PRESSURE IS APPROXIMATELY 300 PSIA.

-------PNM LINE PRESSURES SEASONALLY RANGE FROM 400 TO 550 PSIA.

-------250 MMSCF MAY BE PRODUCED WITH A 75 PSI DRAWDOWN OF THE RESERVIOR.

-------AVERAGE COST OF STORED GAS IS $3.32/MSCF.

-------WELL #5 WILL BE THE PRODUCING WELL DURING THE BLOWDOWN RECOVERY PHASE.

-------WELL #5 IS LOCATED ON A RELATIVE STRUCTURAL HIGH IN THE SOUTHERN PORTION OF THE FIELD. ATTACHMENT NO. 3.

-------THE AQUA ZARCA FORMATION IS CUT BY SEVERAL PRIMARY FAULTS TRENDING

SOUTHWEST TO NORTHEAST. ATTACHMENT NO.4

PURPOSE:

THE SAN YSIDRO GAS STORAGE PROJECT IS IN ITS FINAL STAGES OF UTILITY. THE IMMEDIATE PLAN IS TO BLOWDOWN THE RESERVIOR IN AN EFFORT TO RECOVER THE MAXIMUM QUANTITY OF STORED GAS.THE PRESENT MODE OF OPERATION IS TO PRODUCE WELL #5 BY COMPRESSING THE GAS FOR DELIVERY TO THE PNM LINE AND PUMPING THE PRODUCED WATER TO AN EVAPORATION POND LOCATED ON THE LEASE. AT THIS TIME THE RATE OF EVAPORATION IS NOT SUFFICIENT TO ALLOW CONTINUOUS PRODUCTION. THE NEED FOR AN ALTERNATIVE METHOD OF WATER DISPOSAL IS EVIDENT. ON LEASE REINJECTION OF THE PRODUCED WATER IS THE MOST COST EFFICIENT SOLUTION.

DISCUSSION:

DUE TO THE UNDULATING AND FAULTED NATURE OF THE AQUA ZARCA STRUCTURE, REINJECTION OF THE PRODUCED WATER WOULD BE BEST SERVED BY POSITIONING THE INJECTION WELL AS FAR AS POSSIBLE FROM THE PRODUCING WELL. THIS WOULD MINIMIZE THE POSSIBILITY OF PREMATURE INJECTED WATER BREAKTHROUGH AND WATER CYCLING. TO ACCOMPLISH THIS, WELLS #6 #13 OR #17 WERE CONSIDERED AS CANDIDATES FOR USE AS THE INJECTION WELL. DUE TO THE FACT THAT FLOWLINES PRESENTLY EXIST BETWEEN WELLS #5 AND #6, THE DECISION WAS MADE TO PERMIT WELL #6 AS THE INJECTION WELL.

AS AN ADDITIONAL BENEFIT, WATER INJECTED AT WELL #6 WOULD HAVE TO MIGRATE THROUGH STRUCTURAL LOWS AT WELLS #13 AND #2. VERTICAL PERMEABILITY IN THE AQUA ZARCA IS MODERATE AND MAY ALLOW SOME GRAVITY SEGREGATION OF WATER AND GAS. THIS COULD IN EFFECT CREATE A BOTTOM WATER ASSIST AND MAY IMPROVE THE ECONOMICS OF THE PROJECT AND INCREASE THE ULIMATE RECOVERY OF GAS.

THE WATER INJECTION SHOULD NOT BE CONSIDERED AS A PRESSURE MAINTENANCE PROGRAM DUE TO THE FACT THAT ON A NET BASIS, ONLY THE GAS WILL BE REMOVED FROM THE SYSTEM. MASS BALANCE CALCULATIONS OF THE RESERVIOR WILL SHOW CONTINUOUSLY DECREASING PRESSURES.

AS A RESERVOIR CONSIDERATION, ABANDONMENT PRESSURE CAN NOT BE ESTABLISHED AT THIS TIME. PROJECT LIFE WILL BE DICATED BY ECONOMICS. DUE TO THE VOLATILE NATURE OF GAS PRICES AND THE INABILITY TO PRECISELY PREDICT GAS AND WATER PRODUCTION RATES, THE ECONOMIC LIMIT OF THIS PROJECT WILL BE DETERMINED BY EQUATING FUTURE GAS REVENUE AND OPERATING EXPENSES.

ALL NECESSARY PRODUCTION EQUIPMENT IS PRESENTLY LOCATED AT WELL #5 AND FLOWLINES PRESENTLY EXIST BETWEEN WELLS #5 AND #6. INCREMENTAL WORK AND EQUIPMENT NEEDED TO COMPLETE THE PROJECT WILL INCLUDE THE FOLLOWING:

-------APPROVAL OF STATE WATER DISPOSAL PERMIT.

-------ADEQUATE PUMPING FACILITIES TO TRANSPORT PRODUCED WATER FROM WELL #5 TO WELL #6.

-------AT LEAST 48 HRS WATER STORAGE AT WELL #6. (BASED ON ANTICIPATED WATER PRODUCTION RATES)

-------INSTALL INJECTION PACKER AND CONDUCT MECHANICAL INTEGRITY TEST ON

WELL #6.

-------CONDUCT INJECTIVITY TEST ON WELL #6 TO ESTABLISH INJECTION PUMP REQUIREMENTS.

-------INSTALL INJECTION FACILITIES AT WELL #6

REGULATORY CONSIDERATIONS;

THE SAN YSIDRO LEASES WERE OBTAINED BY PNM SPECIFICALLY FOR THE GAS STORAGE PROJECT. THERE ARE NO OTHER PRODUCING WELLS OR OFFSET OPERATORS IN THE AREA. THUS, THERE SHOULD BE NO CORRELATIVE RIGHTS ISSUES THAT NEED ADDRESSED IN REGARD TO APPROVAL OF AN INJECTION PERMIT. THE GAS CONTAINED AT SAN YSIDRO IS STORED GAS AND ALL ROYALTY, SEVERANCE AND OTHER PRODUCTION TAXES HAVE BEEN PAID. THUS, LOCAL, STATE AND FEDERAL REVENUE STREAMS WILL NOT BE AFFECTED. GROUND WATER WILL BE PROTECTED SINCE THERE IS NO FRESH WATER SOURCE WITHIN A ONE MILE RADIUS OF THE PROPOSED INJECTION WELL. THE PROPOSED INJECTION WELL IS NOT BEING PERMITTED AS A COMMERCIAL DISPOSAL FACILITY. ONLY PRODUCED WATER FROM THE AQUA ZARCA FORMATION WILL BE REINJECTED. THUS, CONTAMINATION OF THE RESERVOIR FROM FOREIGN FLUIDS WILL NOT BE A PROBLEM.

CONCLUSION:

BASED ON THE ABOVE ANALYSIS AND DISCUSSION, THE NEED FOR PRODUCED WATER REINJECTION AT THE SAN YSIDRO GAS STORAGE PROJECT IS JUSTIFIED. MECHANICAL FEASIBILITY OF THE INJECTION PLAN IS EVIDENT AND PRESENTS NO MAJOR DIFFICULTY. LONG TERM ENVIRONMENTAL BENEFIT WILL BE REALIZED BY DEPLETING THE RESERVOIR TO AS LOW A PRESSURE AS IS ECONOMICALLY FEASIBLE. NO RESERVIOR DAMAGE WILL OCCUR AS A RESULT OF THE REINJECTION. CORRELATIVE RIGHTS ARE PROTECTED AND NO DETRIMENTAL PUBLIC ECONOMIC IMPACT WILL BE REALIZED. IT IS MY RECOMMENDATION THAT THE PERMIT FOR INJECTION BE APPROVED AND THE PROJECT EXPEDITED.

SINCERELY;

BRADLEY W. SALZMAN

APPLICATION FOR AUTHORIZATION TO INJECT

PUBLIC SERVICE COMPANY OF NEW MEXICO (PNM)

SAN YSIDRO #6

PART XIII. PROOF OF NOTICE

ATTACHED IS PNM'S AFFIDAVIT OF PUBLICATION AND LANDOWNER NOTIFICATION. THE LEGAL ADVERTISEMENT WAS PUBLISHED IN THE ALBUQUERQUE JOURNAL. LAND OWNERS AND LEASEHOLD OPERATORS LOCATED WITHIN ONE-HALF MILE OF THE INJECTION WELL SITE WERE SERVED NOTICE BY CERTIFIED MAIL.

NOTICE

Public Service Company of New Mexico (PNM), 414 Silver Ave. SW, Albuquerque, New Mexico 87158, is making application to the New Mexico Oil Conservation Division for administrative approval to reinject water from natural gas storage wells back into one of those wells. The contact person for questions relating to the water reinjection is Joel Levine, Senior Engineer (505)-241-4527. The proposed disposal site is the San Ysidro #6 well, located 425' FNL & 1420' FWL, Sec. 20, Township 15 North, Range 1East, Sandoval County, New Mexcio. Water will be injected into the Aqua Zarca Sandstone formation between 2208' and 2228'. Maximum injection pressure will be 700 psi. Maximum injection rate is 1095 barrels of water daily. Any interested parties may file objections or requests for hearing with the Oil Conservation Division , 1220 South St. Francis Drive, Santa Fe, New Mexico 87505 within 15 days from the date of publication of this Notice..

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION	)
OF PUBLIC SERVICE COMPANY OF	)
NEW MEXICO FOR AUTHORIZATION TO INJECT.	)
	)
PUBLIC SERVICE COMPANY OF NEW MEXICO	)
	)
Applicant.	)

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

Mary E. Homan, being first duly sworn under oath states as follows:

1. I am employed by Public Service Company of New Mexico ("PNM") in the capacity of Regulatory Project Manager. In my capacity as such, I am responsible for the publication of notices in connection with the New Mexico Oil Conservation Division ("NMOCD") proceeding in the Application to Inject.

2. Pursuant to the NMOCD's Form C-108 section XIII, I caused the required notice of this proceeding to be e-mailed on February 8, 2005, to the Albuquerque Journal for publication.

3. PNM published the notice in the Albuquerque Journal, which is a newspaper of general circulation available in every county within the State of New Mexico and hence in Sandoval County where PNM's San Ysidro storage unit and the requested injection site are located.

4. Publication was made on February XX, 2005 in the Albuquerque Journal, as shown in the attached Exhibit A, which contains the original Affidavit of Publication from the newspaper.

_____
Mary E. Homan
Regulatory Project Manager

SUBSCRIBED AND SWORN to before me this ____ day of February 2005, by Mary E. Homan.

_____
Sara E. Dolan
Notary Public

My Commission Expires _____

GCG #78236

February __, 2005

CERTIFIED – RETURN
RECEIPT REQUESTED

Mr. and Mrs. David Lucero
P.O. Box 196
San Ysidro, New Mexico 87053

Re: Notice of Intent to Convert Salt Water Disposal Well

Dear Mr. and Mrs. Lucero:

Public Service Company of New Mexico ("PNM") has filed an application for administrative approval to convert the San Ysidro #6 well (Sec. 20, T15N, R1E, 625' FNL & 1420' FWL, Sandoval County, NM) from a natural gas storage well to a salt water disposal well. Injection will be in to the Aqua Zarca Sandstone formation located between 2208' to 2228'. A copy of the application is attached.

As surface owner of the land within one-half mile upon which the injection well is located (Sec. 20, T15N, R1E) the New Mexico State Land Office is being notified of this application. If you wish to object or request the matter for hearing, you must contact the New Mexico Oil Conservation Division, 1220 South St. Francis Drive, NM 87505 within 15 days.

If you have any questions or need additional information concerning this application, please contact me.

Sincerely,

Joel Levine
(505) 241-4527

cc: Mary Homan – PNM
DCC

lcb3053

February __, 2005

CERTIFIED – RETURN
RECEIPT REQUESTED

Mr. Frank Chavez
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Re: Application For Authorization To Inject, Disposal Well, San Ysidro #6, Sandoval County, New Mexico

Dear Mr. Chavez:

Enclosed is Public Service Company of New Mexico's ("PNM") application for administrative approval to dispose produced water in the San Ysidro #6 well. In fulfilling the requirements of this application, the following materials are provided:

1. Form C-108, Application for Authorization to Inject
2. Tabular and schematic data on proposed injection well
3. Lease and surface owner maps that identify all wells and leases within 2 miles of proposed injection well with one-half (1/2) radius circle drawn around the proposed injection
4. Data sheet of wells within 2 miles of proposed injection well, highlighting those wells inside one-half mile radius around the injection well
5. Operations plan for proposed injection well
6. Water Analysis of produced water to be disposed in proposed injection well (Aqua Zarca formation)
7. Water Analysis of water from proposed injection zone (Aqua Zarca formation)
8. Required geologic, stimulation, logging, and test data and fresh water data from nearby wells

9. Signed statement of geologic and engineering analysis.

10. Proof of Notice in the form of notification letters sent to offsetting operators, signed receipt cards and a copy of the Affidavit of Publication with a copy of publication as appeared in the *Albuquerque Journal.*

If you have any questions or need additional information, please contact me.

Sincerely,

_____

Joel Levine
(505) 241-4527

Attachments

cc: NMOCD – Santa Fe
Ms. Debbie Padilla – New Mexico State Land Office
Mr. Jim Lovato – Bureau of Land Management
Mary Homan – PNM
DCC

lcb3053

February __, 2005

CERTIFIED – RETURN
RECEIPT REQUESTED

Ms. Gregorita Sandoval
9511 Modesto NE
Albuquerque, New Mexico 87112

Re: Notice of Intent to Convert Salt Water Disposal Well

Dear Ms. Sandoval:

Public Service Company of New Mexico ("PNM") has filed an application for administrative approval to convert the San Ysidro #6 well (Sec. 20, T15N, R1E, 625' FNL & 1420' FWL, Sandoval County, NM) from a natural gas storage well to a salt water disposal well. Injection will be in to the Aqua Zarca Sandstone formation located between 2208' to 2228'. A copy of the application is attached.

As surface owner of the land within one-half mile upon which the injection well is located (Sec. 20, T15N, R1E) the New Mexico State Land Office is being notified of this application. If you wish to object or request the matter for hearing, you must contact the New Mexico Oil Conservation Division, 1220 South St. Francis Drive, NM 87505 within 15 days.

If you have any questions or need additional information concerning this application, please contact me.

Sincerely,

Joel Levine
(505) 241-4527

Attachments

cc: Mary Homan – PNM
DCC

lcb3053

February __, 2005

CERTIFIED – RETURN
RECEIPT REQUESTED

Ms. Debbie Padilla
New Mexico State Land Office
Post Office Box 1148
Santa Fe, New Mexico 87504

Re: Notice of Intent to Convert Salt Water Disposal Well

Dear Ms. Padilla:

As surface owner of the land within 2 miles upon which the injection well is located on Section 20, Township 15 North, Range 1 East, the New Mexico State Land Office is being notified of this application. If you wish to object or request the matter for hearing, you must contact the New Mexico Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, within fifteen (15) days.

If you have questions or need additional information concerning this application, please contact me.

Sincerely,

Joel Levine
(505) 241-4527

Attachments

cc: Mary Homan – PNM
DCC

lcb3053

February __, 2005

CERTIFIED – RETURN
RECEIPT REQUESTED

Mr. Jim Lovato
Bureau of Land Manager

Farmington, New Mexico _____

Re: Notice of Intent to Convert Salt Water Disposal Well

Dear Mr. Lovato:

As surface owner of the land which the injection well is located on Section 20, Township 15 North, Range 1 East, the New Mexico State Land Office is being notified of this application. If you wish to object or request the matter for hearing, you must contact the New Mexico Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, within fifteen (15) days.

If you have questions or need additional information concerning this application, please contact me.

Sincerely,

Joel Levine
(505) 241-4527

Attachments

cc: Mary Homan – PNM
DCC

lcb3053

PNM
Alvarado Square
Albuquerque, NM 87158-0920
505 241-2700
Fax 505 241-2386
www.pnm.com

March 25, 2005

PNM
A personal commitment
to New Mexico

Mr. William Jones
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Affidavit of Publication – San Ysidro #6 Well Reinjection

Dear Mr. Jones:

Enclosed is an affidavit of publication for Public Service Company of New Mexico's ("PNM") requested authorization to inject. As reflected in the Albuquerque Journal publication, dated March 10, 2005, the notice language was updated to reflect the revised name of the injection zone ("Mesita Blanca member of the Yeso formation, formerly known as the Aqua Zarca Sandstone formation").

If you have any questions or require any additional information, please do not hesitate to contact Mary Homan at (505) 241-4797. Thank you for your assistance in this matter.

Sincerely,

Mary E. Homan
Manager, Regulatory Projects

Enclosures

cc: Joel Levine – MS 2610
DCC – MS 0900

GCG #79453

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR AUTHORIZATION TO INJECT.	)
PUBLIC SERVICE COMPANY OF NEW MEXICO	)
Applicant.	)

AFFIDAVIT OF PUBLICATION

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

Mary E. Homan, being first duly sworn under oath states as follows:

1. I am employed by Public Service Company of New Mexico ("PNM") in the capacity of Regulatory Project Manager. In my capacity as such, I am responsible for the publication of notices in connection with the New Mexico Oil Conservation Division ("NMOCD") proceeding in the Application to Inject.

2. Pursuant to the NMOCD's Form C-108 section XIII, I caused the required notice of this proceeding to be e-mailed on March 8, 2005, to the Albuquerque Journal for publication.

3. PNM published the notice in the Albuquerque Journal, which is a newspaper of general circulation available in every county within the State of New Mexico and hence in Sandoval County where PNM's San Ysidro storage unit and the requested injection site are located.

4. Publication was made on March 10, 2005 in the Albuquerque Journal, as shown in the attached Exhibit A, which contains the original Affidavit of Publication from the newspaper.

Mary E. Homan
Regulatory Project Manager

SUBSCRIBED AND SWORN to before me this 25th day of March 2005, by Mary E. Homan.

Sara E. Dolan
Notary Public

My Commission Expires May 24, 2008

OFFICIAL SEAL
SARA E. DOLAN
Notary Public
State of New Mexico
My Commission Expires 5/24/08

GCG #78236

STATE OF NEW MEXICO
County of Bernalillo SS

Bill Tafoya, being duly sworn, declares and says that he is Classified Advertising Manager of **The Albuquerque Journal**, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made of assessed as court cost; that the notice, copy of which is hereto attached, was published in said paper in the regular daily edition, for 1 times, the first publication being on the 10 day of March, 20 05, and the subsequent consecutive publications on _____, 20___.

Sworn and subscribed to before me, a Notary Public, in and for the County of Bernalillo and State of New Mexico this 23 day of March of 20 05

PRICE $16.44

Statement to come at end of month.

ACCOUNT NUMBER C88190

CLA-22-A (R-1/93)

NOTICE

Public Service Company of New Mexico, 414 Silver Ave., SW, Albuquerque, New Mexico 87158, is making application to the New Mexico Oil Conservation Division for administrative approval to reinject water from natural gas storage wells back into those wells. The contact person for questions relating to the reinjection is Joel Levine, Senior Engineer (505) 241-4527. The proposed disposal site is the San Ysidro #6 well, located 425' FNL & 1420' FWL, Sec. 20, Township 15 North, Range 1 East, Sandoval County, New Mexico. Water will be injected into the Mesita Blanca member of the Yeso formation, formerly known as the Aqua Zarca Sandstone formation, between 2208' and 2310'. Maximum injection pressure will be 400 psi. Maximum injection rate will be 1095 barrels of water daily. Any interested parties may file objections or requests for hearing with the New Mexico Oil Conservation Division, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505 within 15 days from the date of publication of this Notice.
Journal: March 10, 2005

OFFICIAL SEAL
Elyn Sloane
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 4-5-06

* * * Proof * * *

Albuquerque Publishing Company
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Albuquerque, NM 87109
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Account Information

Phone:	(505) 241-2569
Name:	P N M
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Address:	ALVARADO SQUARE MS 0920
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Client:	
Placed by:	sara dolan
Fax #:	

Ad Information

Classification:	0001-Legals - Non - Government	**Size:**	1 x 35.000
Start date:	03-10-05	**Billed size:**	35.00 lines-6.5pt
Stop date:	03-10-05	**Ad #:**	1687013
Insertions:	1	**Ad type:**	Liner Ad
Rate code:	Non-Government Le- gals		
Publications:	Journal Daily (AM)		

Ad Cost:	$ 15.40
Tax @ 6.7500%:	$ 1.04
Tax @ 7.3125%:	$
Tax @ 7.0625%:	$
Total:	$ 16.44

Ad Copy:

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