


EXHIBIT "B"
GEOLOGICAL REPORT CONCERNING
THE TWENTY-EIGHTH EXPANSION
OF THE PICTURED CLIFFS FORMATION IN THE
EL PASO NATURAL GAS COMPANY
LINDRITH UNIT

EL PASO NATURAL GAS COMPANY

By: 

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Reservoir Engineering Dept.

EXHIBIT "B"

GEOLOGICAL SUMMARY PERTAINING TO THE
TWENTY-EIGHTH EXPANSION OF THE
PICTURED CLIFFS PARTICIPATING AREA
WITHIN THE LINDRITH UNIT

GENERAL INFORMATION

The Pictured Cliffs Formation within the Lindrith Unit of Rio Arriba County, New Mexico is of upper cretaceous age and is considered to be predominantly sandstone deposited in bands of varying widths. These bands have a northwest-southeast trend and are separated by zones of shaly sandstones and/or bentonitic sandstones. The Pictured Cliffs Formation is erratic in development and abrupt "shale out" of the sand can occur as well as rapid local thickening. This can cause great variance in well potentials as evidenced in the Lindrith Unit area. Enclosed with this report is a structure map, Exhibit "C", Figure No. 1 and an isopach map as Exhibit "C", Figure No. 2.

Effective Date: August 1, 1981

Participating Acreage:

| | |
|-------------------------------------|-------------------|
| N/2, NE/4 Section 17, T-24-N, R-2-W | Di's Delight #2 |
| S/2, SE/4 Section 17, T-24-N, R-2-W | Jo Ann's Jewel #3 |

Di's Delight No. 2 and Jo Ann's Jewel No. 3 were tested on July 8, 1981 for initial wellhead shut-in pressures of 966 psia and 891 psia, respectively, and after frac gauges of 1,843 Mcf/D and 2,450 Mcf/D, respectively. On the basis of these tests and production data, the acreage is proven commercial and should be admitted to the participating area.

The proposed unit expansion is further substantiated by the isopach, Exhibit "C", Figure No. 2, which shows the above acreage to be located on the established trend of commercial production and to have average net pay of greater than 10 feet.

SCHEDULE XXIX
 TWENTY-EIGHTH EXPANDED PARTICIPATING AREA FOR THE PICTURED CLIFFS FORMATION
 LINDRITH UNIT AREA

| SERIAL NUMBER | DESCRIPTION | NUMBER OF ACRES | DRILLING BLOCK | | PRESENT ACTUAL PARTICIPATION |
|----------------|-------------------------|-----------------|--------------------------|--------------------|------------------------------|
| | | | OWNERSHIP | PERCENTAGE | |
| SF 078907 | T-24-N, R-2-W | 160.00 | | | |
| | Sec. 6: SE/4 | | Royalty; | 12.500000% | 12.500000% |
| | | | Working Interest; | 74.218750% | 74.218750% |
| | | | El Paso Natural Gas Co.; | 13.281250% | 13.281250% |
| | | | ORRI; | <u>100.000000%</u> | <u>100.000000%</u> |
| | | | TOTAL | | |
| <u>TRACT 1</u> | | | | | |
| SF 078908 | T-24-N, R-2-W | 787.88 | | | |
| | Sec. 8: NE/4 | | Royalty; | 12.500000% | 12.500000% |
| | Sec. 17: N/2 N/2, | | Working Interest; | 74.218750% | 74.218750% |
| | S/2 S/2 | | El Paso Natural Gas Co.; | 13.281250% | 13.281250% |
| | | | ORRI; | <u>100.000000%</u> | <u>100.000000%</u> |
| | | | TOTAL | | |
| <u>TRACT 2</u> | | | | | |
| SF 078909 | T-24-N, R-2-W | 1664.29 | | | |
| | Sec. 19: Lots 3, 4, E/2 | | Royalty; | 12.500000% | 12.500000% |
| | SW/4, SE/4 | | Working Interest; | 74.218750% | 74.218750% |
| | Sec. 20: All | | El Paso Natural Gas Co.; | 13.281250% | 13.281250% |
| | | | ORRI; | <u>100.000000%</u> | <u>100.000000%</u> |
| | | | TOTAL | | |
| <u>TRACT 3</u> | | | | | |
| SF 078909 | T-24-N, R-3-W | | | | |
| | Sec. 24: E/2 SE/4 | | Royalty; | 100.000000% | 100.000000% |
| | | | Working Interest; | 74.218750% | 74.218750% |
| | | | El Paso Natural Gas Co.; | 13.281250% | 13.281250% |
| | | | ORRI; | <u>100.000000%</u> | <u>100.000000%</u> |
| | | | TOTAL | | |

1.107524%

5.453725%

11.520256%

SCHEDULE XXIX

| SERIAL NUMBER | DESCRIPTION | NUMBER OF ACRES | DRILLING BLOCK | | PRESENT ACTUAL PARTICIPATION |
|------------------------------------|---|-----------------|--------------------------|-------------|------------------------------|
| | | | OWNERSHIP | PERCENTAGE | |
| SF 078910 | T-24-N, R-2-W | 2296.53 | | | |
| | Sec. 28: NE/4, SE/4, N/2 NW/4 | | Royalty; | 12.500000% | 12.500000% |
| | Sec. 29: NE/4, W/2 SE/4 | | Working Interest; | | |
| | Sec. 30: Lots 3, 4, E/2 SW/4, SE/4 | | El Paso Natural Gas Co.; | 74.218750% | 74.218750% |
| | Sec. 31: Lots 1, 2, 3, 4, E/2 W/2, E/2 | | ORRI; | 13.281250% | 13.281250% |
| | Sec. 32: SE/4, W/2 | | | | |
| T-24-N, R-3-W | | | | | |
| Sec. 24: SW/4, W/2 SE/4 | | | TOTAL | 100.000000% | 100.000000% |
| <u>TRACT 4</u> | | | | | |
| SF 078911 | T-24-N, R-3-W | 320.00 | | | |
| | Sec. 3: S/2 | | Royalty; | 12.500000% | 12.500000% |
| | | | Working Interest; | | |
| | | | El Paso Natural Gas Co.; | 74.218750% | 74.218750% |
| | | | ORRI; | 13.281250% | 13.281250% |
| | | | | 100.000000% | 100.000000% |
| <u>TRACT 5</u> | | | | | |
| SF 078912 | T-24-N, R-3-W | 2400.00 | | | |
| | Sec. 10: S/2, NE/4 | | Royalty; | 12.500000% | 12.500000% |
| | Sec. 11: E/2, SW/4, NW/4 | | Working Interest; | | |
| | Sec. 12: SW/4, NW/4 NW/4, S/2 SW/4, NW/4 SE/4 | | El Paso Natural Gas Co.; | 74.218750% | 74.218750% |
| | Sec. 13: E/2 NW/4, NW/4, S/2 SW/4, NE/4 | | ORRI; | 13.281250% | 13.281250% |
| | Sec. 14: E/2, S/2 SW/4 | | | 100.000000% | 100.000000% |
| Sec. 24: NW/4 SW/2 NE/4, SE/4 NE/4 | | | | | |
| <u>TRACT 6</u> | | | | | |
| TOTAL | | | | | |

15.896638%

2.215048%

16.612859%

SCHEDULE XXIX

| SERIAL NUMBER | DESCRIPTION | NUMBER OF ACRES | DRILLING BLOCK | | PERCENTAGE COMMITTED | PRESENT ACTUAL PARTICIPATION |
|-----------------|----------------------------|-----------------|--------------------------|--------------------|----------------------|------------------------------|
| | | | OWNERSHIP | PERCENTAGE | | |
| SF 078913 | T-24-N, R-3-W | 2400.00 | | | | <u>16.612859%</u> |
| | Sec. 15: All | | Royalty; | 12.500000% | 12.500000% | |
| | Sec. 16: All | | Working Interest; | 74.218750% | 74.218750% | |
| | Sec. 21: All | | El Paso Natural Gas Co.; | 13.281250% | 13.281250% | |
| | Sec. 22: N/2, SW/4 | | ORRI; | <u>100.000000%</u> | <u>100.000000%</u> | |
| | TOTAL | | | | | |
| <u>TRACT 7</u> | | | | | | |
| SF 078914 | T-24-N, R-3-W | 640.00 | | | | <u>4.430096%</u> |
| | Sec. 25: All | | Royalty; | 12.500000% | 12.500000% | |
| | | | Working Interest; | 74.218750% | 74.218750% | |
| | | | El Paso Natural Gas Co.; | 13.281250% | 13.281250% | |
| | TOTAL | | ORRI; | <u>100.000000%</u> | <u>100.000000%</u> | |
| <u>TRACT 8</u> | | | | | | |
| SF 078915 | T-24-N, R-3-W | 960.00 | | | | <u>6.645144%</u> |
| | Sec. 23: NW/4 | | Royalty; | 12.500000% | 12.500000% | |
| | Sec. 36: E/2, NW/4 | | Working Interest; | 74.218750% | 74.218750% | |
| | | | El Paso Natural Gas Co.; | 13.281250% | 13.281250% | |
| | TOTAL | | ORRI; | <u>100.000000%</u> | <u>100.000000%</u> | |
| <u>TRACT 9</u> | | | | | | |
| Patented | T-24-N, R-2-W | *320.00 | | | | <u>0.000000%</u> |
| | Sec. 17: S/2 N/2, N/2 S/2 | | Royalty; | 12.500000% | 12.500000% | |
| | Undivided 320.00 net acres | | Working Interest; | 87.500000% | 0.000000% | |
| | *Uncommitted to Unit | | Jerome McHugh; | 0.000000% | 0.000000% | |
| | TOTAL | | ORRI; | <u>100.000000%</u> | <u>0.000000%</u> | |
| <u>TRACT 12</u> | | | | | | |

SCHEDULE XXIX

| SERIAL NUMBER | DESCRIPTION | NUMBER OF ACRES | DRILLING BLOCK | | PERCENTAGE COMMITTED | PRESENT ACTUAL PARTICIPATION |
|---------------|---------------------------------------|-----------------|--------------------------|--------------------|----------------------|------------------------------|
| | | | OWNERSHIP | PERCENTAGE | | |
| Patented | T-24-N, R-2-W | *320.00 | | | | <u>1.6612861</u> |
| | Sec. 29: NW/4, SW/4 | | Royalty; | 9.375000% | 6.250000% | |
| | *Undivided 240.00 net acres committed | | Working Interest; | 56.250000% | 56.250000% | |
| | | | El Paso Natural Gas Co.; | 25.000000% | .000000% | |
| | | | Felmont Oil Co.; | 9.375000% | 9.375000% | |
| | | | ORRI; | <u>100.000000%</u> | <u>71.875000%</u> | |
| | | | TOTAL | | | |
| Patented | T-24-N, R-2-W | *320.00 | | | | <u>.207661</u> |
| | Sec. 33: N/2 | | Royalty; | 1.171875% | 1.171875% | |
| | *Undivided 30.00 net acres committed. | | Working Interest; | 6.958008% | 6.958008% | |
| | | | El Paso Natural Gas Co.; | 90.625000% | .000000% | |
| | | | Felmont Oil Co., et al | 1.245117% | 1.245117% | |
| | | | ORRI; | <u>100.000000%</u> | <u>9.375000%</u> | |
| | | | TOTAL | | | |
| Patented | T-24-N, R-2-W | *320.00 | | | | <u>1.107524</u> |
| | Sec. 28: S/2 NW/4, SW/4 | | Royalty; | 6.250000% | 6.250000% | |
| | Sec. 29: E/2 SE/4 | | Working Interest; | 37.500000% | 37.500000% | |
| | *Undivided 160.00 net acres committed | | El Paso Natural Gas Co.; | 12.500000% | .000000% | |
| | | | Felmont Oil Co.; | .625000% | .000000% | |
| | | | Jane P. Guild; | .312000% | .000000% | |
| | | | M. Dodge; | 25.000000% | .000000% | |
| | | | Wilb & Co.; | 6.250000% | .000000% | |
| | | | C. W. Gillette; | 4.688000% | .000000% | |
| | | | James S. Gardner; | .625000% | .000000% | |
| | | | Augustus P. Loring, III | 6.250000% | 6.250000% | |
| | | ORRI; | <u>100.000000%</u> | <u>50.000000%</u> | | |
| | | | TOTAL | | | |

SCHEDULE XXIX

| SERIAL NUMBER | DESCRIPTION | NUMBER OF ACRES | DRILLING BLOCK | | PERCENTAGE COMMITTED | PRESENT ACTUAL PARTICIPATION |
|---------------|---|--------------------|--------------------------|------------|----------------------|------------------------------|
| | | | OWNERSHIP | PERCENTAGE | | |
| Patented | <u>T-24-N, R-2-W</u> Sec. 18: <u>Lots 3, NE/4</u> <u>SW/4, NE/4,</u> <u>N/2 SE/4</u> | 315.96 | | | | |
| | | | Royalty; | 12.500000% | 12.500000% | <u>2.187083%</u> |
| | | | Working Interest; | 74.218750% | 74.218750% | |
| | | | El Paso Natural Gas Co.; | 12.281250% | 13.281250% | |
| ORRI; | <u>100.000000%</u> | <u>100.000000%</u> | | | | |
| | <u>TRACT 16</u> | | | | | |
| Patented | <u>T-24-N, R-3-W</u> Sec. 9: <u>All</u> | 640.00 | | | | |
| | | | Royalty; | 12.500000% | 12.500000% | <u>4.430096%</u> |
| | | | Working Interest; | 74.218750% | 74.218750% | |
| | | | El Paso Natural Gas Co.; | 13.281250% | 13.281250% | |
| ORRI; | <u>100.000000%</u> | <u>100.000000%</u> | | | | |
| | <u>TRACT 17</u> | | | | | |
| Patented | <u>T-24-N, R-2-W</u> Sec. 19: <u>Lots 1, 2, E/2</u> <u>NW/4, NE/4</u> | 311.98 | | | | |
| | | | Royalty; | 12.500000% | 6.250000% | <u>2.159533%</u> |
| | | | Working Interest; | 74.218750% | 74.218750% | |
| | | | El Paso Natural Gas Co.; | 13.281250% | 13.281250% | |
| ORRI; | <u>100.000000%</u> | <u>93.750000%</u> | | | | |
| | <u>TRACT 18</u> | | | | | |
| Patented | <u>T-24-N, R-3-W</u> Sec. 13: <u>SW/4 NW/4, N/2</u> <u>S/2, S/2 SE/4</u> Sec. 24: <u>NE/4 NE/4</u> | 320.00 | | | | |
| | | | Royalty; | 12.500000% | 12.500000% | <u>2.215048%</u> |
| | | | Working Interest; | 74.218750% | 72.281750% | |
| | | | El Paso Natural Gas Co.; | 13.218250% | 13.218250% | |
| ORRI; | <u>100.000000%</u> | <u>100.000000%</u> | | | | |
| | <u>TRACT 19</u> | | | | | |

SCHEDULE XXIX

| SERIAL NUMBER | DESCRIPTION | NUMBER OF ACRES | DRILLING BLOCK | | PERCENTAGE COMMITTED | PRESENT ACTUAL PARTICIPATION |
|---------------|--|-----------------|---|------------|----------------------|------------------------------|
| | | | OWNERSHIP | PERCENTAGE | | |
| Patented | T-24-N, R-2-W Sec. 9: NW/4 | 160.00 | TRACT 22 | | 12.500000% | 1.107524% |
| | | | Royalty; | 12.500000% | | |
| | | | Working Interest: El Paso Natural Gas Co.; | 74.281750% | | |
| | | | ORRI; | 13.218250% | | |
| | TOTAL | | 100.000000% | | | |
| Patented | T-24-N, R-3-W Sec. 11: W/2 SW/4 Sec. 14: NW/4, N/2 SW/4 *Royalty Interest not committed to Lindrith Unit. | 320.00 | TRACT 24 | | .000000% | 2.215048% |
| | | | *Royalty; | 12.500000% | | |
| | | | Working Interest: El Paso Natural Gas Co.; | 75.000000% | | |
| | | | ORRI; | 12.500000% | | |
| | TOTAL | | 100.000000% | | | |
| Patented | T-24-N, R-2-W Sec. 21: NW/4 | 160.00 | TRACT 25 | | 3.125000% | 1.107524% |
| | | | Royalty; | 12.500000% | | |
| | | | Working Interest: El Paso Natural Gas Co.; | 75.000000% | | |
| | | | ORRI; | 12.500000% | | |
| | TOTAL | | 100.000000% | | | |
| Patented | T-24-N, R-3-W Sec. 12: NE/4 SE/4, S/2 NW/4, NE/4 NW/4 *Royalty Interest Not Committed to Lindrith Unit. | 160.00 | TRACT 27 | | .000000% | 1.107524% |
| | | | Royalty; | 12.500000% | | |
| | | | Working Interest: El Paso Natural Gas Co.; | 75.000000% | | |
| | | | ORRI; | 12.500000% | | |
| | TOTAL | | 100.000000% | | | |

SCHEDULE XXIX

| SERIAL NUMBER | DESCRIPTION | NUMBER OF ACRES | DRILLING BLOCK | | PERCENTAGE COMMITTED | PRESENT ACTUAL PARTICIPATION |
|---------------|-------------|-----------------|----------------|------------|----------------------|------------------------------|
| | | | OWNERSHIP | PERCENTAGE | | |

R E C A P I T U L A T I O N

Description of Lands in Participating Area:

Township 24 North, Range 2 West, N.M.P.M.

| | | | | | | |
|-------------|--------------------------------------|--|--|--|--|--|
| Section 6: | SE/4 | | | | | |
| Section 8: | NE/4 | | | | | |
| Section 9: | NW/4 | | | | | |
| Section 17: | All (S/2 N/2 & N/2 S/2 Uncommitted)* | | | | | |
| Section 18: | All | | | | | |
| Section 19: | All | | | | | |
| Section 20: | All | | | | | |
| Section 21: | W/2, SE/4 | | | | | |
| Section 28: | All | | | | | |
| Section 29: | All | | | | | |
| Section 30: | All | | | | | |
| Section 31: | All | | | | | |
| Section 32: | SE/4, W/2 | | | | | |
| Section 33: | N/2 | | | | | |

Township 24 North, Range 3 West, N.M.P.M.

| | | | | | | |
|-------------|-----------------|--|--|--|--|--|
| Section 3: | S/2 | | | | | |
| Section 9: | All | | | | | |
| Section 10: | S/2, NE/4 | | | | | |
| Section 11: | E/2, SW/4, NW/4 | | | | | |
| Section 12: | SE/4, W/2 | | | | | |
| Section 13: | All | | | | | |
| Section 14: | All | | | | | |
| Section 15: | All | | | | | |
| Section 16: | All | | | | | |
| Section 21: | All | | | | | |
| Section 22: | N/2, SW/4 | | | | | |
| Section 23: | N/2, SE/4 | | | | | |
| Section 24: | All | | | | | |
| Section 25: | All | | | | | |
| Section 36: | E/2, NW/4 | | | | | |

Total Number of Acres in Participating Area:

Total Number of Acres Committed to Participating Area:

*15,296.64
14,446.64