

Calculated concentration of metals, in parts per million, in samples of crude oil from the Panhandle field

[The concentration of the metals is calculated from semiquantitative percent of metals (table 5) X percent ash. x+, x-, and x. mean 4.64 to 10, 2.15 to 4.64, and 1.0 to 2.15 respectively; 0.x+, 0.x, and 0.x- means 0.460 to 1.0, 0.215 to 0.464, and 0.10 to 0.215 respectively, and so forth]

| Sample | Well | | | Location | | | | Producing Interval (depth, in feet) | Stratigraphic Unit | Ash (percent of sample) | Concentration of metals | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|------------------|---------------------------|---------|----------|-------------------------------|------------|-----------------|--------------------------------------|--------------------|-------------------------|-------------------------|--------|---------|-------|-------|--------|---------|--------|------|------|--------|-------|--------|--------|-------|----------|--------|--------|---------|--------|--------|-------|---------|-------|--------|-------|-------|
| | No. (pl. 2) | Name | Company | Section | Block | Survey | County in Texas | | | | Na | K | Cu | Ag | Ca | Mg | Sr | Be | Ba | Zn | Al | Ga | B | Ti | Zr | Si | Sn | Pb | V | As | Cr | Mo | Mn | Fe | Ni | Co | La |
| 1 | Mudget 1 | Phillips Petroleum | 85 | 46 | H and TC | Hutchinson | 2980-2985 | "Panhandle lime" | 0.084 | xx- | 0 | 0.0x | 0 | x. | 0.x+ | 0.x- | 0 | 0.00x | 0 | 0 | 0.00x | 0.0x- | 0.x | 0 | 0 | x.- | 0 | 0.00x | 0 | 0 | 0.x- | 0.x | 0 | 0 | 0.336 | | |
| 2 | do | do | 85 | 46 | H and TC | do | 2980-2985 | do | .0086 | x+ | 0 | .x- | Tr | x+ | .x | .x- | .000x- | .0x- | x+ | .x- | .00x- | 0 | .0x- | .0x- | .x | .0x- | .x | x.- | 0 | .00x | .00x | .0x | x.+ | x- | .00x | 0 | .0705 |
| 3 | Yake 7 | do | 35 | 47 | H and TC | do | 2835-2850 | do | .143 | xxx- | 0 | .x | 0 | xx. | x. | .x | 0 | .000x- | .x | .x+ | 0 | .0x | 0 | .0x | 0 | x. | 0 | .000x- | 0 | 0 | x. | x.- | 0 | 0 | .014 | | |
| 4 | Mitchell 2 | Kerr-McGee Oil Industries | 76 | 46 | H and TC | do | 2812-2884 | "Panhandle lime" 1 | .344 | xxxx. | xx- | .0x- | 0 | xxx- | xx+ | xx- | 0 | .00x+ | 0 | x. | 0 | .0x+ | .x- | .0x+ | x+ | 0 | 0 | .0x- | 0 | 0 | x.- | x. | .0x | .0x- | .034 | | |
| 5 | Childers 2 | Phillips Petroleum | 9 1/2 | | Z. C. Collier | do | 3040-3110 | "Panhandle lime" | .026 | xx+ | 0 | .0x+ | 0 | xx- | x+ | .x+ | 0 | .00x | 0 | .x+ | 0 | .0x+ | .00x+ | .0x- | x. | 0 | 0 | .00x+ | .00x- | 0 | .x+ | x.- | .000x+ | 0 | .003 | | |
| 6 | Wittenberg 32 | Kerr-McGee Oil Industries | 12 | X02 | H and TC | do | 2930-2965 | "Panhandle lime" or "Brown dolomite" | .005 | x. | 0 | .0x | 0 | .x | .0x+ | .0x- | 0 | .000x+ | 0 | .x | 0 | 0 | .0x | .00x | x.- | .00x | .0x | .x | .x | .00x | .000x+ | 0 | x+ | .x | .0x | 0 | .001 |
| 7 | 858b Sanford A-5 | Colorado Interstate Gas | 8 | 3 | AB and M | Carson | 2778 | "Brown dolomite" | .170 | xx. | x.- | .0x+ | 0 | xx+ | xx. | .x | 0 | .x | 0 | x+ | .00x | .0x+ | .x- | .0x+ | xx+ | 0 | .0x+ | x+ | 0 | .0x | 0 | .x | xx+ | x. | .00x+ | 0 | .017 |
| 8 | Dugan 3 | Phillips Petroleum | 72 | 46 | H and TC | Hutchinson | 2843-2860 | do | .206 | x.- | 0 | .0x- | 0 | .x | .x- | 0 | 0 | .x- | 0 | 0 | 0 | 0 | 0 | .x | 0 | .x | 0 | .0x- | 0 | 0 | .x- | x | 0 | 0 | .062 | | |
| 9 | Cokerell 9 | Kerr-McGee Oil Industries | 14 | B3 | D and SE | do | 2780-2880 | "Brown dolomite" 1 | .015 | x+ | .x+ | .x | 0 | x. | .x | .0x+ | 0 | .000x+ | .0x | .x | .00x | .0x+ | .0x | .0x | x+ | x.- | 0x+ | 0 | .0x- | .00x+ | .x | xx+ | x+ | .0x | 0 | .002 | |
| 10 | Pitts 16 | do | 7 | M21 | TCRR | do | 3035-3058 | do | .004 | x. | 0 | .x- | 0 | .x | .x | .0x | 0 | .0x | .x | 0 | 0 | .0x | .00x | .x+ | .x | .x | .x | 0 | .00x | .000x+ | .0x | x. | .x | .00x | .x- | <.001 | |
| 11 | Jasper 2 | do | 24 | M23 | TCRR | do | 3142-3185 | do | .016 | xx. | .x+ | x. | .000x+ | x+ | x. | x. | 0 | .00x+ | .x- | .x | .000x+ | 0 | .0x+ | .0x- | .x+ | .0x+ | .x | .x- | .x | .0x | .00x | .0x+ | .xx+ | x.- | .x | 0 | .002 |
| 12 | Wittenberg A-12 | Stanley K. Feinberg | 2 | J | TWNG | do | Unknown | do | .005 | xx. | 0 | .00x | 0 | x.- | .x- | .x- | 0 | .00x | x | .x- | 0 | .0x- | .00x | .00x | .x- | 0 | 0 | .x | 0 | .00x | .000x | 0 | x- | .x | .00x | 0 | <.001 |
| 13 | B-2 | do | 2 | J | TWNG | do | Unknown | do | .511 | xxx | 0 | .x | 0 | xx. | xx- | x.- | 0 | .0x | 0 | 0 | 0 | 0 | 0 | x. | 0 | 0 | .x | 0 | .0x | 0 | 0 | xx- | x- | 0 | 0 | .035 | |
| 14 | C-2 | do | 2 | J | TWNG | do | Unknown | do | .0006 | x. | 0 | .000x | 0 | 0x+ | .0x- | .0x- | 0 | .000x+ | 0 | .0x- | 0 | .000x | .000x- | .000x+ | .0x | 0 | 0 | .0x | 0 | .000x- | .000x | 0 | 0x- | 0x- | .000x- | 0 | .0002 |
| 15 | Gary 4 | Phillips Petroleum | 26 | M23 | TCRR | do | 3240-3270 | "Brown dolomite" | .008 | x. | 0 | .0x- | 0 | x+ | x.- | .x- | 0 | .00x | 0 | .x- | 0 | .00x- | .00x | 0x- | .x | 0 | .000x+ | .x | 0 | .00x | .00x- | .00x | x.- | x+ | .00x | 0 | .001 |
| 16 | Hazel 2 | do | 4 | X02 | H and OB | do | 2955-3040 | do | .003 | xx- | 0 | .0x | 0 | x. | .x+ | .0x+ | 0 | .00x- | 0 | .x- | 0 | .00x- | .00x+ | .00x+ | .x- | 0 | .00x- | .x- | 0 | .00x- | 0 | .00x- | .x+ | .x- | .000x+ | .00x | <.001 |
| 17 | Ryan A-1 | Kerr-McGee Oil Industries | 1 | M24 | T and C | do | 3195-3226 | "Brown dolomite" 1 | .101 | 0 | 0 | .0x | 0 | .x | .00x | 0 | 0 | .0x+ | 0 | .0x | 0 | 0 | .0x | 0 | xx- | 0 | 0 | .x | 0 | 0 | .x | .x | 0 | 0 | .010 | | |
| 18 | Lucas 2 | Phillips Petroleum | 18 | M16 | N 1/2 112 acres J. W. Swisher | do | 3202-3250 | "Brown dolomite" | .001 | x+ | 0 | .000x+ | 0 | .x- | .0x+ | .000x+ | 0 | .000x+ | 0 | .0x- | 0 | 0 | .000x- | .000x+ | .00x+ | 0 | 0 | .000x- | .0000x+ | 0 | .0x- | .0x- | .0000x- | 0 | <.001 | | |
| 19 | Ebling 7 | do | 18 | M16 | AB and M | do | 3178-3205 | do | .005 | xx. | 0 | .0x- | 0 | x.- | .x- | .0x | 0 | .0x- | 0 | .x | .00x- | 0 | .0x- | .0x- | 0 | .0x- | 0 | .0x- | 0 | .x- | xx- | x.- | .00x | 0 | .001 | | |
| 20 | Wells 1-B | Kerr-McGee Oil Industries | 153 | 3 | TT and NO | Moore | Unknown | Unknown | 10.0 | xxxx. | xxx. | xx. | 0 | xxxx- | xxx. | xx- | 0 | x- | 0 | xxx- | .x | 0 | x+ | .x | xxxx- | xx- | x. | x.- | 0 | xx- | x- | xxxx | xxxxxx | xx- | x- | 0 | |
| 21 | 623 Thompson B-2 | Colorado Interstate Gas | 17 | 44 | H and TC | do | 2845-3115 | "Brown dolomite" | 3.0 | xx+ | xx+ | x. | 0 | xxxx- | xxxx- | .x+ | 0 | x. | 0 | xx+ | 0 | .x | x+ | .x | xx+ | 0 | .x+ | .x+ | 0 | .x+ | 0 | xx. | xxxx+ | .x+ | .x | 0 | .9 |
| 22 | Johnson T-1 | Phillips Petroleum | 3 | | Rockwell, School lands | Gray | 2575-2610 | do | .0011 | .x+ | .0x | .00x+ | Tr | .x | x- | .00x+ | Tr | .00x- | 0x- | .x- | .000x- | .00x | .0x- | .00x | .x | .000x- | .0x | .x- | 0 | .00x- | .00x- | .00x | .x | .00x+ | 0 | .0004 | |
| 23 | Lea 10 | Kerr-McGee Oil Industries | 72 | 38 | GH and H | Sherman | Unknown | Unknown | .12 | xxx. | x.- | .x- | 0 | xx- | x+ | x- | .00x | Tr | 0 | .x | 0 | 0 | .00x | 0 | .x | 0 | .0x- | .x | 0 | .00x | 0 | .x | .x+ | .00x | 0 | | |
| 24 | 588d Berneta 1 | do | 29 | 21 | CSS | Hartley | 5714-5728 | "Granite wash" | .001 | x+ | 0 | .0x- | .0000x- | x- | .0x- | .0x+ | 0 | .000x+ | 0 | .0x- | 0 | .00x+ | .0x+ | .000x- | .x+ | <.0000x- | .000x- | .0x+ | 0 | .000x+ | .000x- | .00x+ | .0x- | .0x- | .00x+ | 0 | <.001 |
| 25 | do | do | 29 | 21 | CSS | do | 5714-5728 | do | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | 588c Berneta 4 | do | 29 | 21 | CSS | do | 5770-5778 | do | .0039 | x.- | .x+ | x.- | .000x- | x.- | x. | .0x+ | .0000x+ | .0x- | .0x+ | .x | 0 | .00x+ | .0x- | .00x | x.- | .00x+ | .x- | .x- | 0 | .00x+ | 0 | .0x | x. | .x | .00x+ | .00x- | .0006 |
| 27 | do | do | 29 | 21 | CSS | do | 5782-5788 | do | .0028 | x. | .x | .0x+ | Tr | .x | x- | .x+ | Tr | .000x+ | .0x | .x | Tr | .0x- | .0x- | .00x | .x- | .00x | .x- | .x- | 0 | .00x | .00x- | .00x+ | x.- | .x | .00x | 0 | .0058 |
| 28 | 588b Bivins 1-GG | Phillips Petroleum | 29 | 21 | CSS | do | 5716-5860 | do | .0007 | x | 0 | .0x+ | .0000x- | x | x- | .00x | 0 | .0x- | 0x+ | .x- | 0 | .00x | .00x | .000x | | .0x | .0x | .x- | .x | .000x | .000x+ | .00x+ | .x | .x- | .00x | 0 | |

1 May or may not be the correct stratigraphic unit; is either "Panhandle lime" or "Brown dolomite." 2 Collected from sludge pit. 3 Oil extracted from composite sample of drill cuttings with Soxhlet extractor. The sampling interval does not represent the gas-producing interval. 4 Residues from filtration of sample 24.