

# Subsurface Geology of Upper Cretaceous and Lower Tertiary Coal-Bearing Rocks, Wind River Basin, Wyoming

by Dianna Gentry Hogle and Richard W. Jones

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# Subsurface Geology of Upper Cretaceous and Lower Tertiary Coal-Bearing Rocks, Wind River Basin, Wyoming

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# **ABSTRACT**

A refined stratigraphic framework has been established for more than 20,000 ft (6,000+ m) of Upper Cretaceous through lower Eocene sedimentary rocks in the Wind River Basin, Wyoming. This study refines and expands previous work and conclusions by assembling and using a much larger data base than previously available, including a correlation net of 325 geophysical well logs (electric logs showing resistivity, spontaneous potential and/or gamma ray - neutron curves), 36 drill holes with palynological age dates, 80 drill hole lithology logs, and limited surface exposures. Stratigraphic and structural data were generated for that portion of the basin in front of the South Owl Creek Mountains thrust fault and for the hanging wall of this thrust. Because of the lack of data, the geology of that portion of the stratigraphic/structural basin beneath the thrust is only speculative. Significant results and conclusions from this study include: (1) The lower part of the Mesaverde Formation intertongues with marine sandstones and shales in the upper part of the Cody Shale to the east and with marine sandstones in the lower part of the Mesaverde Formation in the Bighorn Basin to the north. (2) An unconformity between the Upper Cretaceous Mesaverde Formation and the overlying Paleocene Fort Union Formation in the southwestern part of the Wind River Basin can be correlated for more than twenty miles in the subsurface. (3) During the latest Cretaceous and Paleocene, more than 7,000 ft (2,100+ m) of Lance Formation and more than 8,500 ft (2,600 m) of Fort Union Formation were deposited in the northeastern part of the basin. Ponding during the Paleocene occurred primarily in the northeastern Wind River Basin with the deposition of 2,800 ft (850+ m) of shale and siltstone in the Waltman Shale Member of the Fort Union Formation. (4) The Lance and Fort Union formations occur in the subsurface throughout much of the basin; however, the Lance and the underlying Meeteetse Formation were eroded in the western part of the basin. (5) Formation thicknesses are controlled locally, in part, by synorogenic structural features that were developing during the deposition of sediments, as shown for example, in the Shotgun Butte syncline and Madden anticline. (6) Regional coal isopach and isopleth maps generated for the first time, for the Mesaverde Formation and combined Meeteetse/Lance Formations, indicate possible target areas for coal and related hydrocarbon exploration.

# INTRODUCTION

The purpose of the investigation was to establish a regional stratigraphic framework for coal-bearing Upper Cretaceous and lower Tertiary rocks in the Wind River Basin to assist in further exploration and development of mineral resources. Previously published data from both subsurface and surface studies was integrated with a large amount of new subsurface data to update, ex-

pand and refine earlier interpretations of the subsurface geology of the basin.

# Background

This study is restricted to a part of the Wind River structural basin of central Wyoming known as the Wind River Coal Basin. The boundary of this coal basin is defined by the extent of the stratigraphically lowest major coal-bearing formation in the

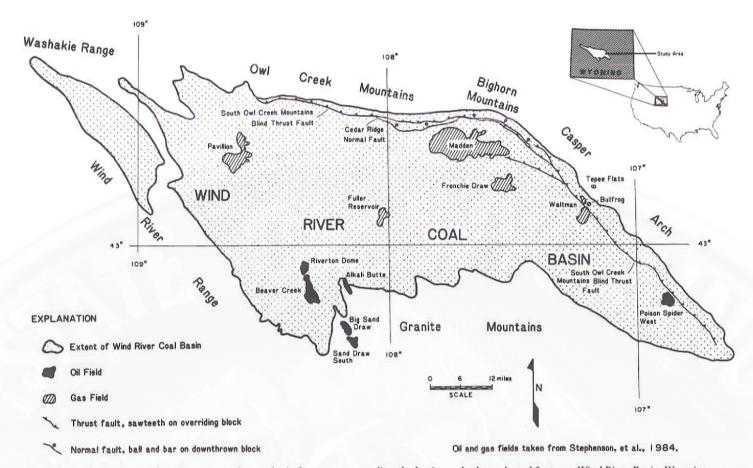


Figure 1. Study area location map, major geologic features surrounding the basin, and other selected features, Wind River Basin, Wyoming.

Wind River Basin, the Mesaverde Formation (Fig. 1). The major coal-bearing rocks present in the Wind River Coal Basin include the Upper Cretaceous Mesaverde Formation through the lower Eocene Wind River Formation. Ages and the stratigraphic sequence of formations are after Keefer (1965, 1972) (Fig. 2). For ease in description, the terms Wind River Coal Basin and the Wind River Basin are synonymous in this paper.

The Wind River Coal Basin occupies approximately 8,500 mi<sup>2</sup> (13,600+ km<sup>2</sup>) and is bounded by the Owl Creek Mountains to the north, the Casper Arch to the east, the Granite Mountains to the south and the Wind River Mountains to the west (Fig. 1). Only part of the structural basin had formed prior to the emplacement of the thrusts that overrode perhaps half of the northern and eastern parts of the basin. Possibly beginning in latest Paleocene time and then during the earliest Eocene, the South Owl Creek Mountains thrust fault brought the Owl Creek Mountains and the Casper Arch nearly over the present day basin axis.

The Upper Cretaceous Mesaverde Formation (Fig. 2) primarily Campanian with slight overlap of the Campanian-Maastrichtian boundary (Lillegraven and McKenna, 1986). The Clarkforkian, a North American land mammal age defined in the Bighorn Basin to the north, has not been identified in the Wind River Basin (Brown, 1989, personal communication).

Previous geologic investigations of the Wind River Basin include work by Bauer (1934), Gill et al (1970), Hickling et al (1989), Love (1939, 1948, 1970, and 1978), Nace (1936), Paape

(1961), and Rich (1962). Structural studies of the basin include Blackstone (1948), Gries (1983), Keefer (1970), Love (1978), and Reynolds (1976). The last major comprehensive, basin-wide study of Upper Cretaceous through lower Eocene rocks was published by Keefer (1965, 1972); these publications include stratigraphic definitions, ages, and depositional settings of units in this rock sequence. Windolph and others (1986) studied the coalbearing Cretaceous and Tertiary rocks in the western part of the basin. However, they used a unique stratigraphic classification for some of the rock units and ignored the North American Stratigraphic Code (American Association of Petroleum Geologists, 1983). Some of their stratigraphic nomenclature has not been used by previous or subsequent workers. Our stratigraphic nomenclature is that used by Keefer (1970) and on the geologic map of Wyoming (Love and Christiansen, 1985).

Since 1965 a much larger data base has been created by the oil and gas industry; almost 70% more data now exists. Figure 3 illustrates the amount of oil and gas drill hole data available for the coal basin in 1965 versus the amount of data generated post-1965 through 1988. This large data base was used to establish the detailed stratigraphy of this thick (more than 20,000 ft/6,000 m) sequence of sedimentary rocks. This understanding is important to future exploration and development of mineral resources such as coal, oil and gas, coalbed methane, and uranium within both the basin in front of the South Owl Creek Mountains thrust and the subthrust half of the Wind River Basin.

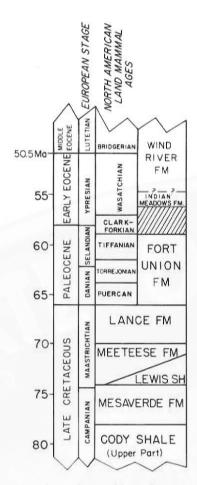


Figure 2. Stratigraphic column of Late Cretaceous through early Eocene rocks in the Wind River Coal Basin, Wyoming.

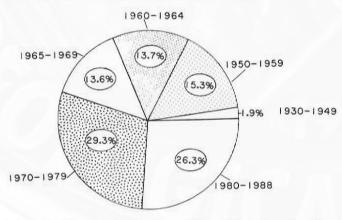


Figure 3. History of exploratory drilling, Wind River Coal Basin, Wyoming.

# Methods

Formation boundaries and thicknesses were determined by correlating 325 geophysical well logs (see Figure 4, in pocket, for drill hole locations and Table 1, in pocket, for corresponding drill hole data). These correlations were refined using palynological age dates for 36 drill holes furnished by Chevron Oil Company and Amoco Production Company. Approximately 80 lithologic logs (with formation picks) were made available by the USGS for comparison with geophysical logs, and field reconnaissance

was done along limited exposures around the basin margins. Published measured sections (Keefer, 1965, 1972; Keefer and Troyer, 1964; Rich, 1962; and Yenne and Pipiringos, 1954) were also incorporated into the correlations.

From this data base, eleven cross sections (Fig. 5, 6–16) were constructed across the basin to illustrate the correlations. An eastwest cross section summarizes more than 125 mi (200+ km) of subsurface geology (Fig. 16, in pocket). Two structure contour maps (Figs. 4, 17), five isopachous maps (Figs. 18-22) and two coal isopachous/isopleth maps (Figs. 23, 24) were also generated. The coal isopachous and isopleth maps were constructed using coal beds measured at outcrops and as determined from the geophysical logs. Coal bed "picks" were determined from resistivity curves and then confirmed by comparison with gamma ray curves on geophysical well logs. Delineation of coals on the geophysical logs was possible for coals 2 feet (.6 m) and greater in thickness. Coal will appear in drill hole cuttings long after it has been drilled, indicating greater numbers of coal beds than are actually present in the subsurface. For this reason, coal beds shown on drill hole lithologic logs were not included in this study unless they could be confirmed by the geophysical logs.

# **STRATIGRAPHY**

# **Cody Shale**

The upper part of the Cody Shale interfingers with the lower portion of the coal-bearing Mesaverde Formation. This study includes detailed correlations where this interfingering occurs and does not include the lower part of the Cody Shale. The Cody Shale was deposited in a marine environment and the Mesaverde is the nonmarine Cody equivalent. In the west-central and southwestern portions of the basin, this interfingering relationship is the most complex. The edge of the Cretaceous seaway transgressed and regressed many times in the west-central portion of the basin, evidenced by the complex intertonguing of marine and nonmarine rocks. In this portion of the basin an additional 2,000 feet (610 m) of Mesaverde was deposited and is stratigraphically below the Mesaverde in the central and eastern portions of the basin. This unnamed lower sequence of Mesaverde Formation is here informally named the "Alkali Butte member." Contemporaneous with the deposition of the Alkali Butte member in the west was deposition of marine sands in the Cody Shale to the east. Keefer (1972) described the upper part of the Cody Shale as interbedded sandstone and shale. The thick marine sandstones in the Cody Shale of the eastern Wind River Basin can be correlated with coal-bearing, nonmarine Mesaverde rocks in the western and southwestern portion of the basin. In the southern end of the Bighorn Basin, marine sandstones assigned to the Mesaverde Formation can be correlated with the thick marine sandstones in the Cody Shale of the eastern Wind River Basin (Keefer, 1972). The Wallace Creek Tongue of the Mesaverde Formation is a major tongue within the Cody Shale. The Wallace Creek Tongue reaches a maximum thickness of 345 ft (105+ m) in the southeastern part of the basin.

#### Mesaverde Formation

The Mesaverde Formation is the oldest and stratigraphically

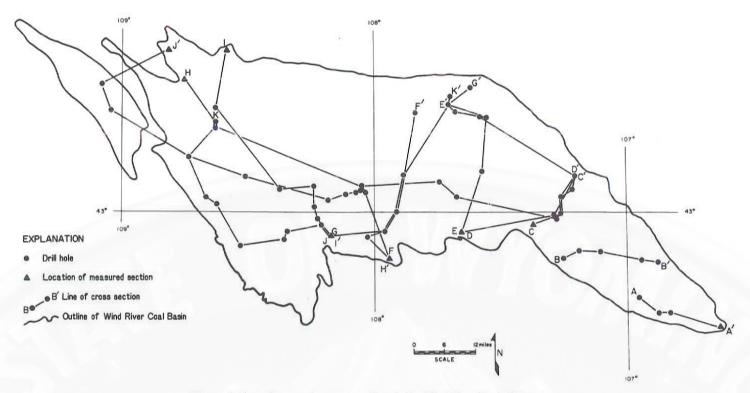


Figure 5. Location map for cross sections in the Wind River Basin, Wyoming.

lowest significant coal-bearing formation in the basin. The Mesaverde Formation is conformable throughout the basin with the underlying Cody Shale and can be correlated on the surface and throughout the subsurface of the basin. For a detailed definition, description, lithology, and depositional history of the Mesaverde Formation, the reader is referred to Keefer (1972). The present study uses new data to expand and refine previous subsurface investigations of the Mesaverde in the Wind River Basin.

Previous investigations of the Mesaverde in the Wind River Basin include Asquith (1970), Bartram (1937), Barwin (1959, 1961), Cobban and Reeside (1952), Keefer (1972), Krumbein and Nagel (1953), Lillegraven and McKenna (1986), Love (1948), and Shapurji (1978). The five members defined by Keefer (1972) in the eastern and southeastern parts of the basin are, from oldest to youngest, the Fales member, Wallace Creek Tongue, Parkman Sandstone, an unnamed middle member, and Teapot Sandstone. In the western part of the basin, these members cannot be distinguished and the Mesaverde has never been formally subdivided. Troyer and Keefer (1955) called the uppermost sandstone member in the northwestern part of the basin the white sandstone member and determined that it was stratigraphically equivalent to the Teapot Sandstone member.

All five members of the Mesaverde described by Keefer (1972) can be distinguished in the extreme southeastern part of the basin on subsurface geophysical well logs. However, the Parkman Sandstone member, a stratigraphic term originally defined in the western Powder River Basin by Darton (1907), can be recognized only in the extreme southeastern portion of the basin. Elsewhere in the Wind River Basin, sandstones previously known as Parkman are here included in the unnamed middle

member of the Mesaverde Formation. For the most part, the Mesaverde in the eastern half of the basin consists of only four distinct members: the Teapot Sandstone, the unnamed middle member, the Wallace Creek Tongue and the Fales member.

The present structural configuration of the top of the Cody Shale, or base of the Mesaverde Formation (Fig. 4) illustrates the overall great asymmetry of the basin. The Mesaverde Formation crops out at an elevation of 6,000+ ft (1,830 m) above mean sea level along the southern and northwestern parts of the basin. Less than 30 miles (48+ km) to the northeast, the base of the Mesaverde reaches a maximum depth of 14,000 feet (4,270 m) below sea level, a difference of 20,000+ ft (6,100 m) in structural elevation. In the eastern, northeastern, and northern Wind River Basin, both the upper and lower portions (supra- and subthrust) of the thrust plate are contoured. In this area, the Mesaverde Formation and other coal-bearing rocks are overridden in the subthrust and overriding in the hanging wall of the thrust plate. In some cases, the Mesaverde Formation in the subthrust extends several miles beyond the surface exposures in the subthrust.

Comparison of the structure contour map, top of the Cody Shale (Fig. 4, in pocket), with the total thickness of the Mesaverde Formation (Fig. 18) illustrates that deposition of the Mesaverde was, in part, controlled by structural development of the basin. The thick unnamed tongue of Cody Shale in the western part of the basin was not included in the total Mesaverde isopach. The Mesaverde Formation is thickest near the structural lows such as along the present Wind River Basin structural trough and near Shotgun Butte syncline in the northwestern part of the basin where the Mesaverde Formation reaches a maximum

thickness of 2,300+ ft (700+ m). Thinning of the Mesaverde in structurally high areas occurs around Alkali Butte, near the southwestern margin of the basin; localized thinning of the Mesaverde Formation can be seen over the subsurface Madden anticline structure in the northeast. Thickness variations of the Mesaverde Formation indicate that the Wind River Basin was developing as early as 78 million years ago.

Cross section A-A' (Fig. 6), in the extreme southeastern part of the basin, illustrates all five members of the Mesaverde Formation in both the subsurface and in the surface measured section at Casper Canal. The uppermost member, the Teapot Sandstone, is conformably overlain by the lower tongue of the marine Lewis Shale.

In cross section B-B' (Fig. 7) north of A-A', the Parkman Sandstone member cannot be distinguished in the subsurface. The Teapot Sandstone is overlain by a thinner, still conformable tongue of Lewis Shale.

In the central portion of the basin west of B-B', the Mesaverde Formation has a very different appearance on the geophysical logs. Cross section F-F' (Fig. 11) illustrates an upper and lower sequence of Mesaverde rocks. For convenience in separating the two sequences, the new informal name Alkali Butte member is used for the lower sequence of Mesaverde rocks. This name is taken from surface exposures at Alkali Butte near the southwest margin of the coal basin. In the southwestern part of the basin the upper Mesaverde Formation and the Alkali Butte member are separated by a major tongue of Cody Shale. The upper section is equivalent to the entire Mesaverde Formation to the east and southeast; the Alkali Butte member is equivalent to marine sandstones in the Cody Shale to the east. The tongue of Cody Shale that separates the upper Mesaverde from the lower Alkali Butte member reaches a maximum thickness of 700+ feet (215 m) in the southwest part of the basin (calculated from Table 1). Maximum thickness for the upper Mesaverde in the southwest part of the basin is 1,000+ ft (305 m). Maximum thickness for the Alkali Butte member is 2,000+ ft (610 m), also in the southwest part of the basin, but not directly underlying the maximum thickness of the upper member. In Figure 11, the Mesaverde Formation is conformably overlain in the subsurface by the Meeteetse Formation; however, at the surface near Conant Creek the Meeteetse is absent and the Mesaverde Formation is unconformably overlain by the Lance Formation.

Cross section H-H' (Fig. 13) shows that farther to the west the intertonguing relationship of the Mesaverde and Cody formations becomes less complex in both the subsurface and surface. At the Armstrong mine measured section the Cody Shale conformably underlies the Mesaverde Formation with no apparent interfingering of the two formations. The Mesaverde reaches a thickness of almost 2,000 ft (610 m) in Hickerson Oil Company Tribal 33x-10.

Cross section I-I' (Fig. 14) extends from Alkali Butte in the southeast to West Dry Creek in the northwest. This section includes, in part, the major unconformity between the Cretaceous Mesaverde Formation and the overlying Paleocene Fort Union Formation. Somewhere between Continental Oil Company Tribal 36-#3 and Trigg Drilling Company Trigg-Tribal #1-12,

the Meeteetse Formation is preserved in the subsurface and underlies the unconformity which exists to the southeast. The upper part of the Mesaverde Formation is preserved (for the most part) across the line of section; the Alkali Butte member conformably overlies the Cody Shale.

Cross section J-J' (Fig. 15, in pocket) is the western-most of Mesaverde Formation cross sections. Along the western margin and also in parts of the southwestern Wind River Basin, the upper sequence of the Mesaverde Formation is absent and the Alkali Butte member is unconformably overlain by the Paleocene Fort Union Formation. This major unconformity can be correlated for several miles/kilometers in the subsurface. Drill holes which cross this unconformity are given in Table 1 (in pocket). Surface exposures demonstrate that the Cody Shale tongue and Alkali Butte member are at least partially preserved at Alkali Butte. Across the basin to the northwest a conformable section of rocks is preserved at Welton Mine/Shotgun Butte. The Shotgun Butte syncline probably served as a major trough for sediment accumulation and subsequent preservation. Although the geophysical logs indicate that much of the sedimentary sequence is absent in the western Wind River Basin, a sliver of the upper part of the Mesaverde Formation or a thin section of Meeteetse and/or Lance formations could be present below the unconformity in places where subsurface data are not clearly defined. It is impossible at this time to map in the subsurface, except in a general way, the rocks preserved immediately adjacent to the unconformity. However, based on geophysical log signatures, limited palynology data, outcrops at the extreme western edge of the coal basin, and overall thicknesses of rocks above the Cody Shale, we interpret that in the western part of the Wind River Basin, the Paleocene Fort Union Formation unconformably overlies the Alkali Butte member of the Mesaverde Formation.

Coal beds occur in the Mesaverde Formation throughout the Wind River Basin (Fig. 23) but are thickest and most numerous in the Alkali Butte member in the southwestern part of the basin and in the lower part of the Mesaverde in the northwestern part of the basin. Subbituminous coal was once mined commercially from the Mesaverde Formation in several areas as reported by Glass and Roberts (1978), Thompson and White (1952), and Windolph et al (1986). As many as 15 separate coal beds with cumulative coal thickness of 83 ft (25.3 m) were observed in drill holes at Beaver Creek south of Riverton. Peats that formed these coals were deposited in coastal swamps in and adjacent to deltas prograding eastward into the Cody seaway.

# Lewis Shale, Meeteetse, and Lance Formations

The Lewis Shale and Meeteetse Formation are defined and described by Keefer (1965). The contact between the Meeteetse Formation and overlying Lance Formation is difficult to pick on the geophysical logs, particularly in areas where the Lewis Shale is absent and thick sandstones in the Meeteetse are overlain by thick sandstones in the Lance. For this reason, the Lewis and Meeteetse are combined with the Lance Formation for the isopachous map (Fig, 19). The combined thickness of the Lewis, Meeteetse and Lance formations ranges from 0 to 8,000+ ft (0 to

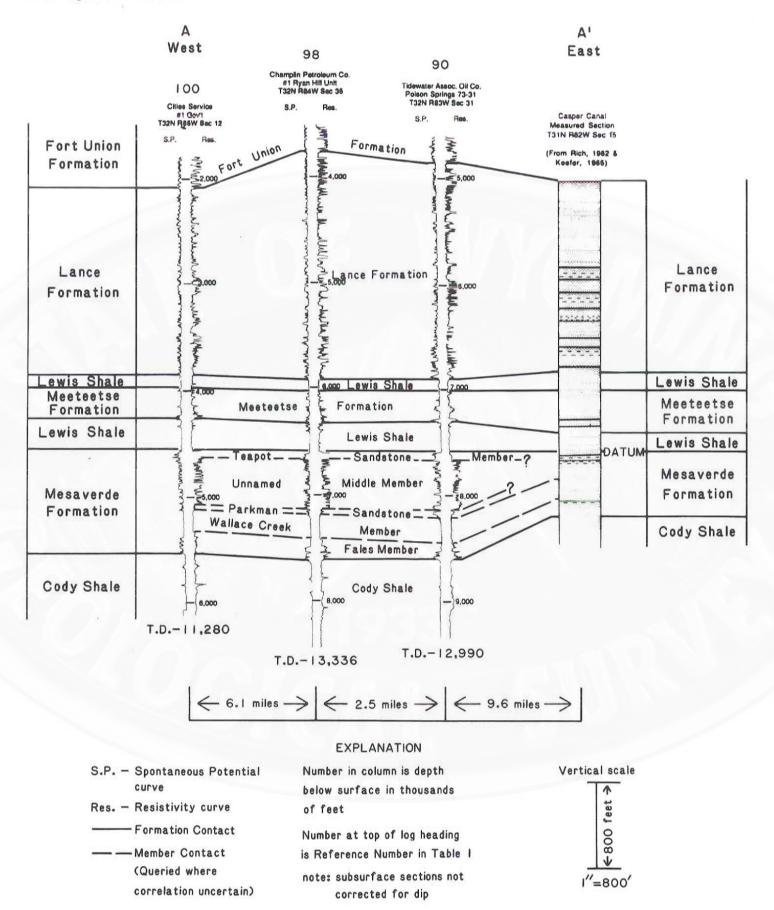
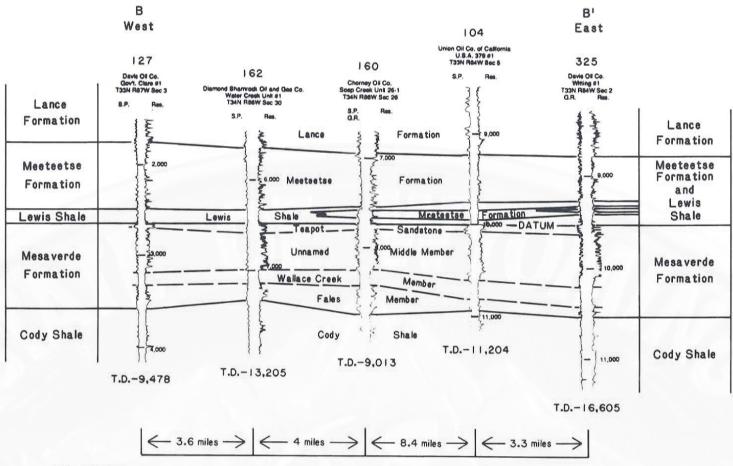
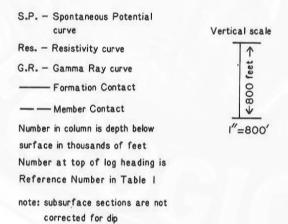


Figure 6. Cross section A-A' showing correlations of Upper Cretaceous rocks, Wind River Basin, Wyoming.



#### **EXPLANATION**



2,440 m). In the southeastern part of the basin the Lewis Shale reaches a maximum total thickness of 700+ ft (215 m). The Meeteetse Formation reaches a maximum thickness of 1,900+ ft (580 m) in the northeastern part of the basin. Where the Lance can be distinguished from the underlying Meeteetse Formation, it reaches a maximum thickness of 5,100+ ft (1,555 m) in the northeastern part of the basin. Keefer (1965) showed the westward limit of the upper and lower tongues of the Lewis Shale in the subsurface; findings of this study concur with these limits, as is shown in Figure 16. Where the Lewis Shale is absent in the central and western

parts of the basin, the isopachous map shows the combined thick-

ness of the nonmarine Meeteetse and Lance formations.

Figure 7. Cross section B-B' showing subsurface correlations of Upper Cretaceous rocks, Wind River Basin, Wyoming.

West of the subsurface zero (0) isopachous line along the western portion of the basin (Fig. 19), the Meeteetse and Lance formations were either never deposited or deposited and subsequently eroded. It is our opinion that the latter of the two explanations is correct. Because these formations are so thick in the eastern, northeastern, and northwestern Wind River Basin, it is unlikely that deposition of these sediments did not occur to the west and southwest. The presence of a thick sequence of Mesaverde, Meeteetse and Lance formations at Shotgun Butte in the northwestern part of the basin indicates that sediments were preserved at least as close as the Shotgun Butte syncline. The sedimentary package that was deposited in the western part of the

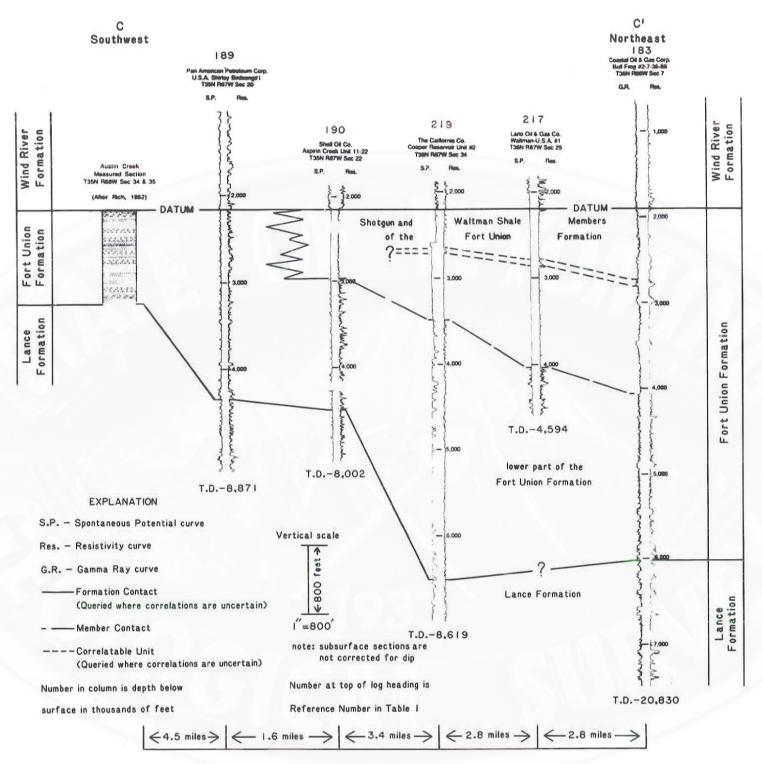


Figure 8. Cross section C-C' showing correlations of uppermost Cretaceous through lower Eocene rocks, Wind River Basin, Wyoming.

basin was eroded down to the Alkali Butte member of the Mesaverde Formation at a later time. Surface and subsurface data (Figs. 14 and 15, 16, in pocket) demonstrate that the Paleocene Fort Union Formation unconformably overlies the lower portion of the Cretaceous Mesaverde Formation in the southwestern and westernmost parts of the basin.

Cross section A-A' (Fig. 6) in the extreme southeastern part of the basin shows that two major tongues of Lewis Shale at the Casper Canal measured section can be correlated into the subsurface. Between the two Lewis Shale tongues is a section of Meeteetse Formation approximately 300 ft (90 m) thick. The upper tongue of Lewis Shale is conformably overlain by about 2,000 ft (610 m) of Lance Formation.

Cross section B-B' (Fig. 7) illustrates that two thinner tongues of Lewis Shale merge into one section of Lewis Shale to the west. The Meeteetse Formation has increased in overall

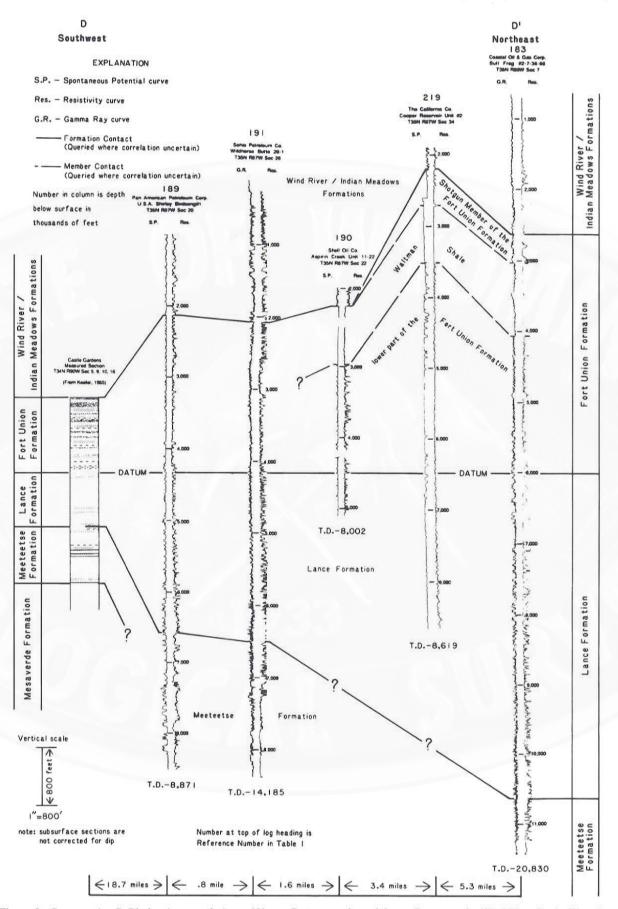


Figure 9. Cross section D-D' showing correlations of Upper Cretaceous through lower Eocene rocks, Wind River Basin, Wyoming.

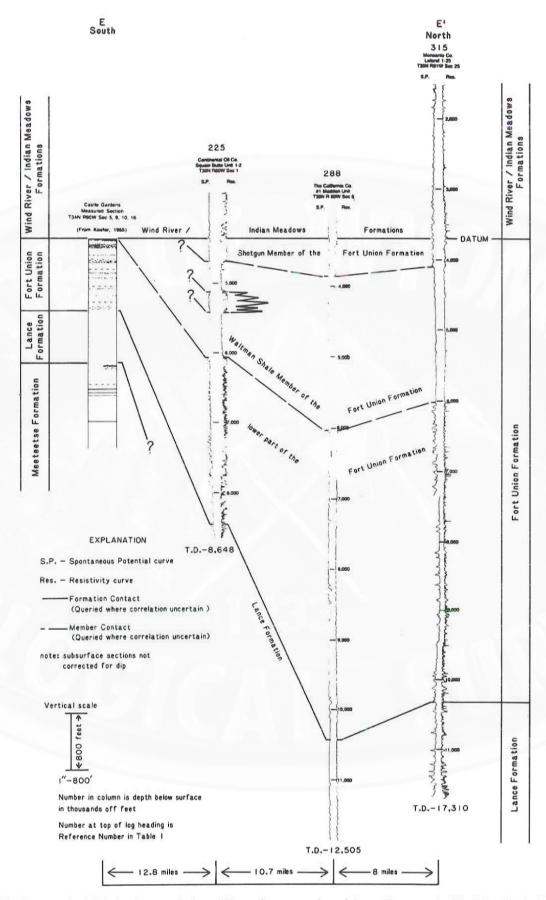
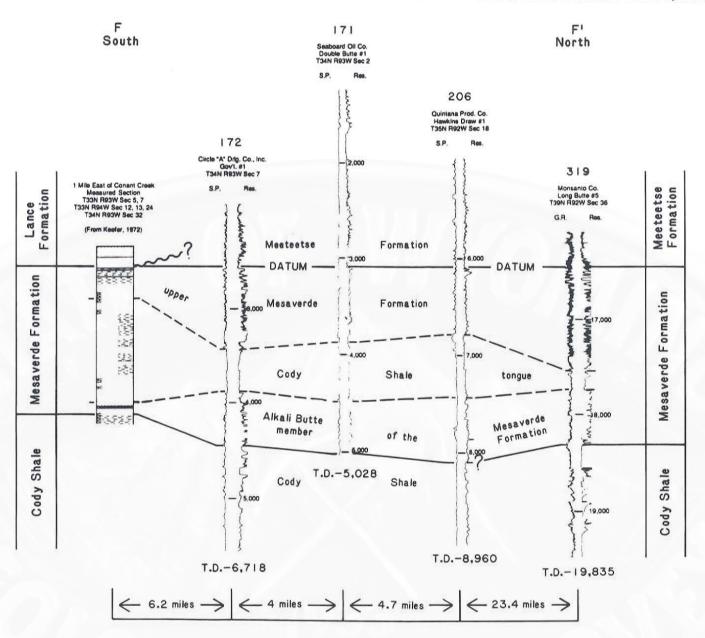


Figure 10. Cross section E-E' showing correlations of Upper Cretaceous through lower Eocene rocks, Wind River Basin, Wyoming.



#### EXPLANATION

S.P. - Spontaneous Potential curve

Res. - Resistivity curve

G.R. - Gamma Ray curve

Formation Contact (Queried where correlations are uncertain)

--- Correlatable Unit

Unconformable Contact (Queried where correlations are uncertain)

Number in column is depth below surface in thousands of feet Number at top of log heading is Reference Number in Table I

Vertical scale

note: subsurface sections are not corrected for dip

Figure 11. Cross section F-F' showing correlations of Upper Cretaceous rocks, Wind River Basin, Wyoming.

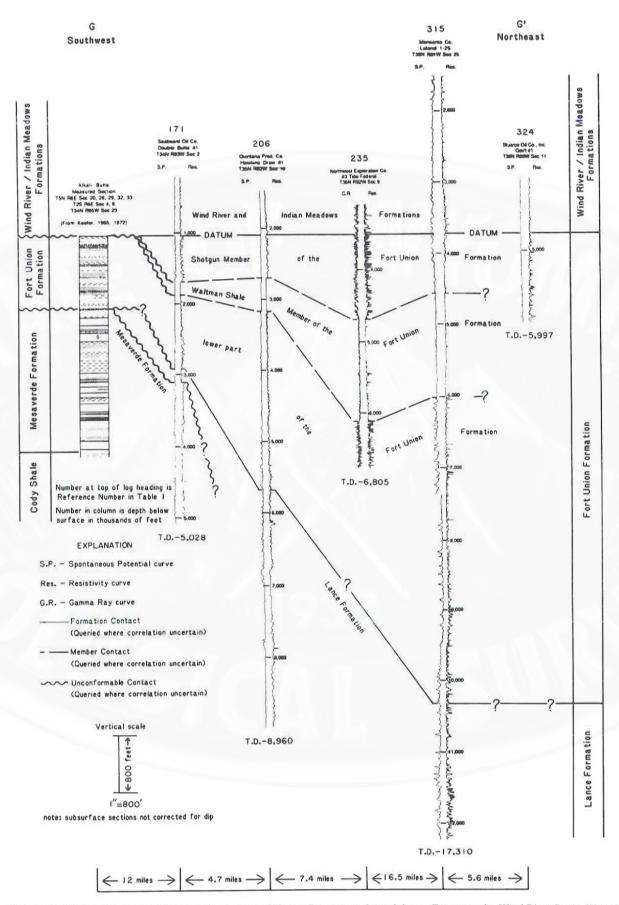
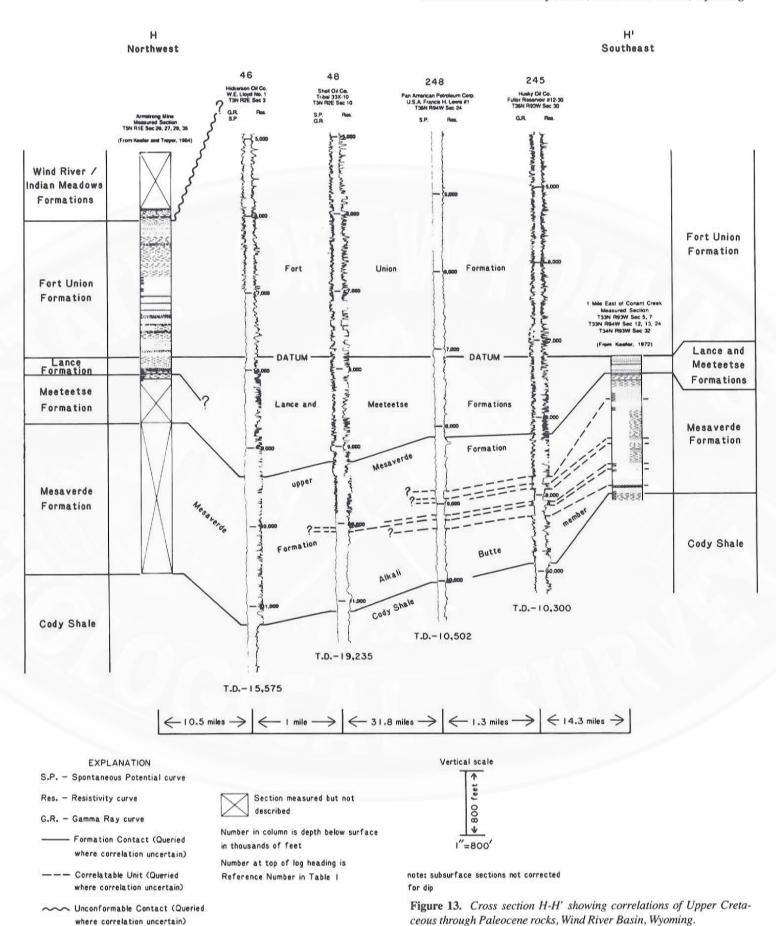
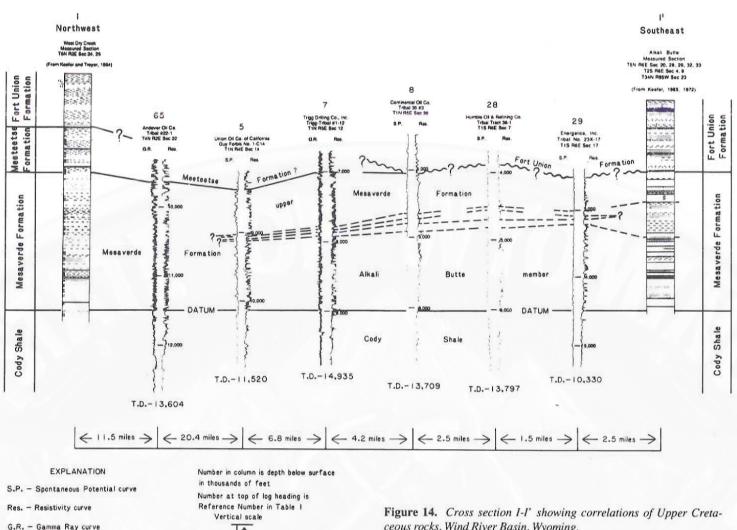


Figure 12. Cross section G-G' showing correlations of Upper Cretaceous through lower Eocene rocks, Wind River Basin, Wyoming.





ceous rocks, Wind River Basin, Wyoming.

thickness and is conformably overlain by the Lance Formation.

feel

€ 800

1"=800

note: subsurface sections are

not corrected for dig

Cross section D-D' (Fig. 9) illustrates significant thickening of the Lance Formation from Castle Gardens toward the structural axis of the basin near Coastal Oil Company Bullfrog #2-7-36-86. The Lewis Shale is absent and in the subsurface the Lance Formation is in conformable contact with the underlying Meeteetse Formation and overlying Fort Union Formation.

Cross section H-H' (Fig. 13) shows correlations for the combined Meeteetse and Lance formations across the west-central part of the basin. Much of the stratigraphic section is absent at both the Armstrong Mine and Conant Creek measured sections. However, this stratigraphic sequence appears to be conformable in the subsurface. Here, the Meeteetse and Lance formations have a combined total thickness of nearly 1,500 ft (460 m). Coals in the Meeteetse and Lance formations occur throughout the Wind River Basin (Fig. 24) but only a few areas contain thick, numerous coal beds. Because of the poor resolution for detecting coal beds in the subsurface on many oil and gas geophysical logs, the number of coal beds "picked" is probably underestimated. Also, there is a lack of data in some areas of the basin. A maximum sixteen coal beds were identified in the Meeteetse-Lance interval, primarily in the Meeteetse Formation in the northwestern part of the basin. Here, a single coal bed reaches 16 ft (4.9 m) in thickness (Glass and Roberts, 1978). As many as 13 coal beds, primarily in the Lance Formation, occur in the extreme southeastern part of the basin. The greatest cumulative thickness of coals in the combined Lance and Meeteetse formations is 53 ft (16.2 m).

# Fort Union Formation

The Fort Union Formation in the Wind River Basin represents deposition during the Paleocene epoch. Previous published studies of the Fort Union Formation include Courdin and Hubert

Formation Contact (Queried where correlations are uncertain)

Correlatable Unit (Queried where correlations are uncertain)

- Unconformable Contact (Queried

where correlations are uncertain)

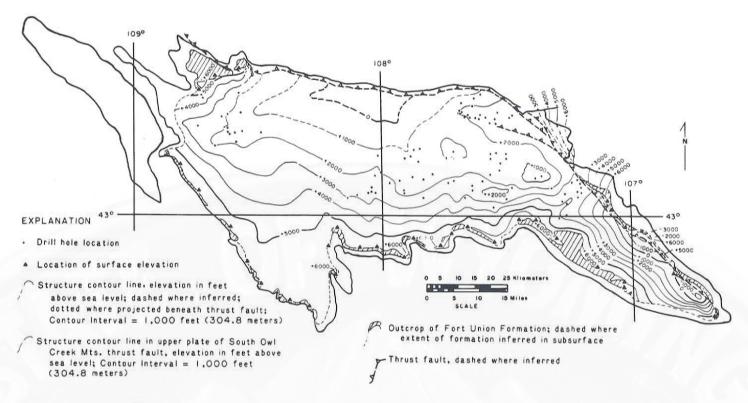


Figure 17. Structure contour map on top of the Fort Union Formation, Wind River Basin, Wyoming.

(1969), Emry (1975), Keefer (1965), Phillips (1983), Tourtelot (1946), and Van Houten (1957). Present day structural configuration shows the top of the Fort Union Formation (Fig. 17) ranges in elevation from 6,000+ ft (1,830 m) above mean sea level to 0 ft (0 m) at mean sea level. Figure 17 also illustrates the overall great asymmetry of the basin toward the northeast. The Fort Union Formation occurs in both the upper and lower plates (supra-and subthrust) of the South Owl Creek Mountains thrust fault along the northeastern and eastern margins of the present basin. A sliver of Fort Union occurs in the upper plate of the thrust and is steeply dipping or overturned in this area. Total thickness for the Fort Union Formation (Fig. 20) ranges from 0 to 7,000+ ft (0 to 2,140+ m). The Fort Union is thickest in the northeastern part of the basin and corresponds with the structural low that is found there. In much of the eastern half of the basin. the Fort Union Formation consists of three distinct members: the lower part of the Fort Union, the Waltman Shale member, and the Shotgun member. When the Waltman Shale member, a very distinct unit on geophysical logs, is present, subsurface correlations are more easily determined. Another aid in subsurface correlation of the Fort Union Formation is the frequent occurrence of multiple coal beds throughout the lower part. Although the upper part of the Lance Formation may contain some coal beds, in contrast, the lower part of the Fort Union Formation of Paleocene age (as confirmed by palynological data) has a section where multiple coal beds are present and show characteristic "kicks" on the resistivity and gamma ray logs. Data adjacent to sites where multiple coal beds occur are widely scattered and not quantitative enough to generate maps for basin-wide coal occurrences.

Cross sections (Figs. 8, 9, 10, and 12) depict a thick sequence

of the Waltman Shale member that can be correlated throughout much of the eastern Wind River Basin. The Waltman is a sequence of as much as 2,800 ft (850+ m) of mostly organic-rich shales, as shown on the isopachous map (Fig. 21). This map illustrates (in greater detail than previous publications) the areal extent and configuration of sediments deposited in Waltman Lake. Although no conclusive evidence has yet been presented as to whether Waltman Lake was marine or nonmarine in nature, the areal extent and lithology of this member indicate that the lake was an extensive body of water in the basin during the Paleocene (Keefer, 1961, 1965; Newman, 1965; Nichols and Ott, 1978; and Phillips, 1982, 1983).

In the western half of the basin, no distinct members of the Fort Union Formation have been recognized. Cross sections H-H', I-I', and J-J' (Fig. 13, 14, and 15, in pocket) however, show that in the western area, several individual stratigraphic units near the base of the Fort Union can be correlated in the subsurface.

#### Indian Meadows and Wind River Formations

Fossil-rich and well exposed, lower Eocene rocks in the Wind River Basin have been investigated by many scientists, including Keefer (1965, 1970), Love (1939), Seeland (1978), Soister (1968), Stucky et al (1987), and Winterfeld and Conard (1983). The Indian Meadows Formation is stratigraphically below the Wind River Formation and is composed of red to variegated claystone, sandstone, algal-ball(?) limestone and some beds of large Paleozoic boulders and detachment masses of Paleozoic and Mesozoic rocks (Love and Christiansen, 1985). The Wind River Formation is composed of variegated claystone and sandstone and lenticular conglomerate (Love and Christiansen, 1985).

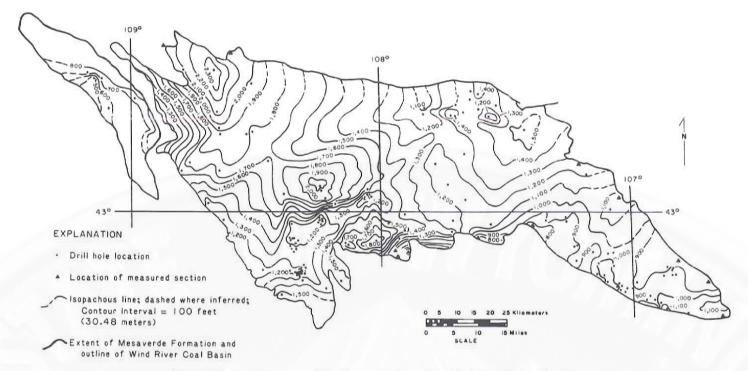


Figure 18. Isopachous map of the Mesaverde Formation, Wind River Basin, Wyoming.

The Early Eocene Indian Meadows is Wasatchian in age while the Wind River Formation is middle Early to early Middle Eocene, Wasatchian, and Bridgerian in age. A major angular unconformity between the Indian Meadows and Wind River formations is exposed at the surface around the margins of the basin. The Indian Meadows is overridden by the South Owl Creek Mountains thrust, whereas the Wind River Formation is not. However, away from the basin margins in the subsurface, the two formations are indistinguishable (Love, 1939, 1970). Keefer (1965) stated correctly that the extent of the Indian Meadows in the subsurface is unknown and "it seems likely that strata equivalent to the Indian Meadows are an indistinguishable part of a continuous depositional sequence of lower Eocene rocks...." For this reason, the Indian Meadows and Wind River formations were combined on the isopachous map and in the cross sections.

Post-Wind River strata are still preserved only along the north and south margins of the Wind River Basin. In the remainder of the basin, the top of the formation is the present topographic land surface. Therefore, the isopach thickness is a minimum throughout the basin. The total isopachous map of the Indian Meadows/Wind River formations (Fig. 22) shows combined thickness from between 0 to 5,500+ ft (0 -1,680 m). Total thickness of this unit is greatest in the northern and northeastern parts of the basin, illustrating that the basin continued to downdrop and develop through early Middle Eocene time.

Coal beds, lignite beds, and carbonaceous shale units occur in the Wind River Formation, particularly along the northern margin of the basin. These coal beds and other rock units have been mapped by Thaden (1978, 1979, 1980a-e, 1981). Individual coal beds are for the most part lenticular. One mapped coal bed in the northeastern Wind River Basin was approximately 20 ft (6.4 m) thick. The coals are evidently limited in extent in that they cannot

be seen or correlated in the subsurface for any appreciable distance. However, a carbonaceous shale unit, approximately 5 ft (1.5 m) thick can be followed on the surface from Moneta to near Bonneville, a distance of almost 20 miles (32+ km) (Stucky, 1990, personal communication).

# **Summary Cross Section**

Stratigraphic cross section K-K' (Fig. 16, in pocket) summarizes correlations for Upper Cretaceous through lower Eocene rocks in an east-west direction across 125+ mi (200+ km) of the Wind River Basin. In the northeastern portion of the basin near K' (in several Madden deep wells), the Mesaverde, Meeteetse, Lance, Fort Union and Wind River formations are 18,000 ft (5,486 m) thick. The lithologies of the Mesaverde, Meeteetse, and Lance formations are predominantly sandstones and siltstones, with thicknesses of 1,500 ft (455+ m), 1,900+ ft (580 m), and 5,100 ft (1,555 m), respectively. The only significant shale unit in this thick section is the Waltman Shale member of the Paleocene Fort Union Formation. The Waltman reaches a maximum thickness of 2,800 ft (850+ m) in the northeastern part of the basin. South of T35N, the Waltman Shale is absent. The lower Eocene Wind River Formation occurs at the surface everywhere along K-K'. The combined Wind River and Indian Meadows formations average between 2,500 ft (762 m) and 3,500 ft (1,067 m) thick on section K-K' and reach a maximum combined thickness of 5,500+ ft (1,676 m) in the eastern part of the basin (see Fig. 22). South of the Madden deep wells, in Coastal Oil Bullfrog 2-7-36-86, the entire Upper Cretaceous and lower Tertiary section remains very thick near the structurally low part of the basin adjacent to the South Owl Creek Mountains thrust.

In the east-central part of the basin, four distinct members of the Mesaverde Formation can be delineated on the geophysical

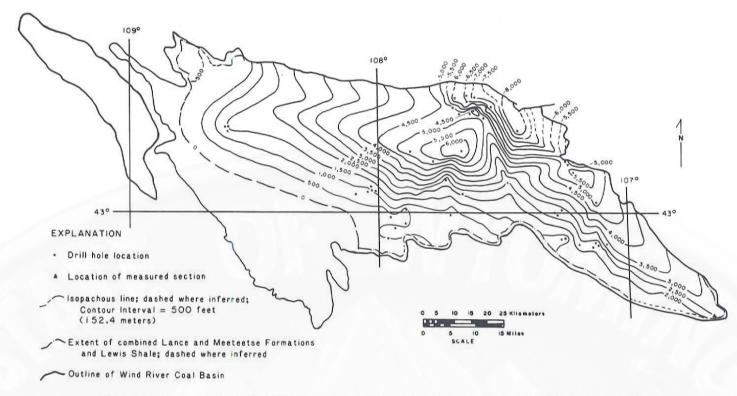


Figure 19. Isopachous map of combined Lewis Shale, Lance and Meeteetse formations, Wind River Basin, Wyoming.

logs. These are the Fales member, an unnamed middle member, the Wallace Creek Tongue, and the Teapot Sandstone. The Wallace Creek Tongue is a major tongue of the Cody Shale and reaches a maximum thickness of 345+ ft (105+ m) in the southeastern part of the basin. The Lewis Shale, a marine equivalent of the Meeteetse Formation, is also recognized on geophysical logs in the southeastern quadrant of the basin. Often described as having two distinct shale tongues, the Lewis obtains a maximum thickness of 700+ feet (215 m).

In the central portion of cross section K-K', the overall stratigraphic picture changes. Between Inexco Oil Federal Hanagan #1-15 and Pan American Petroleum Fuller Reservoir Unit #22-25, the upper section of marine Cody Shale correlates westward with the coal-bearing, nonmarine Mesaverde Formation. This lower coal-bearing member of the Mesaverde Formation, the Alkali Butte member, lies stratigraphically below the entire section of Mesaverde Formation to the east, southeast, and northeast. Between the Alkali Butte member and the upper section of the Mesaverde Formation is a tongue of Cody Shale as much as 700+ ft (215 m) thick. Overlying the Mesaverde Formation, the Meeteetse Formation has thinned to zero (0) and the Lance Formation is about 1,000 ft (305 m) thick.

West and southwest of the central part of the basin between W.C. McBride No. 1 Government-Croft Ranch and Shell Oil Company Tribal 33X-10, the Meeteetse and Lance formations are absent. Here, a major unconformity separates the Mesaverde Formation from the overlying Fort Union Formation. This unconformity can be traced for many miles in the subsurface. Most of the Mesaverde is present below the unconformity, but is locally eroded down to the Alkali Butte member. The intertonguing Cody Shale is present in the McBride well but absent to the west

in Impel Energy Corporation Tribal #9-34. The absence of the intertonguing Cody Shale in the southwestern part of the basin is due to local erosion; in the west-central and northwestern Wind River Basin, the tongue is absent due to nondeposition of the marine shale and the contemporaneous deposition of nonmarine rocks in the Mesaverde Formation.

At K in the northwestern part of the basin, the entire Upper Cretaceous through lower Eocene rock sequence is again represented.

# SUMMARY OF DEPOSITIONAL AND TECTONIC EVENTS

The depositional and tectonic activity that occurred in the Wind River Basin from Late Cretaceous through early Eocene is summarized below by a continuum of inter-related events. An event is defined here as a depositional or tectonic incident (or series of incidents) that is evidenced in the geologic record. The following summary discusses both the incident or event and the evidence, implications, or results of the event in the Wind River Basin.

Depositional Event 1: Mesaverde Formation (Upper Cretaceous). This formation interfingers, in part, with the upper part of the marine Cody Shale. It was deposited in fluvial, deltaic and near shore environments adjacent to the Cody seaway. In the eastern half of the basin the Mesaverde is comprised of four members: the Fales member, Wallace Creek Tongue, unnamed middle member, and Teapot Sandstone. The Wallace Creek member is a major tongue of the Cody Shale and reaches a maximum thickness of 345 ft (105+ m). In the southwestern part of the basin the Mesaverde consists of an upper sequence of rocks

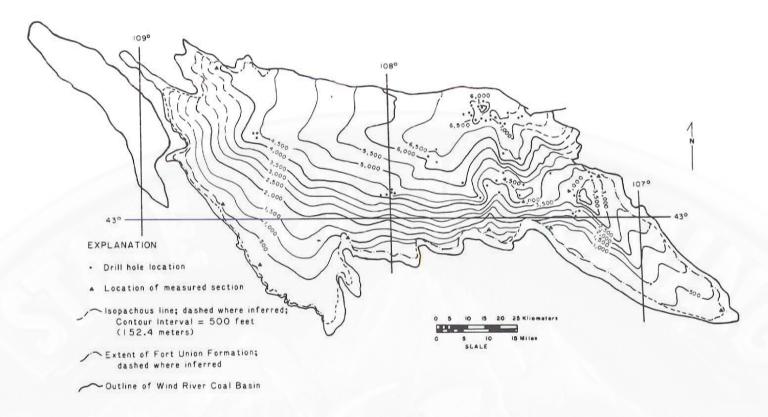


Figure 20. Isopachous map of the Fort Union Formation, Wind River Basin, Wyoming.

stratigraphically equivalent to the four members to the east plus a lower sequence of coal-bearing rocks as much as 2,000 ft (610 m) thick known here as the Alkali Butte member. These two sequences are separated by a major unnamed tongue of the Cody Shale which has a maximum thickness of 700+ ft (215 m). No significant intertonguing of the Mesaverde Formation and Cody Shale exists in the northwestern part of the basin where the Mesaverde reaches its maximum overall thickness of 2,300+ ft (700+ m).

Tectonic Event I. As early as 78 million years ago, development of structural features was contemporaneous with deposition of the Mesaverde Formation and controlled, in part, the depositional thicknesses of the formation. The Mesaverde is thickest in structurally low areas where synorogenic deposition occurred, such as in the major basin trough area and near Shotgun Butte syncline. Thinning of the Mesaverde from either nondeposition or erosion occurred over structurally high areas such as near Alkali Butte and at Madden anticline.

Depositional Event 2: Lewis Shale and Meeteetse Formation (Upper Cretaceous). The Lewis Shale was deposited in the southeastern part of the basin and is the marine equivalent of the nonmarine Meeteetse Formation. The Lewis is comprised of one to several tongues of shale, with a maximum combined thickness of 700+ ft (215 m). The Meeteetse Formation is difficult to distinguish from the overlying Lance Formation in the subsurface but where the formation can be distinguished, the Meeteetse has

a maximum thickness of 1,900+ ft (580 m) in the northeastern part of the basin.

Depositional Event 3: Lance Formation (Upper Cretaceous). The non-marine Lance Formation was deposited throughout much of the Wind River Basin. It varies in thickness from 0 in the southwestern part of the basin, where it has since been completely eroded, to over 5,100 ft (1,555 m) in the northeastern part of the basin.

Tectonic Event 2. Major overall structural development of the basin began during the latest Cretaceous as is evidenced by the extreme thickening of sedimentary rocks (the Lance Formation) along the present day northern and eastern edges of the basin. Downdropping of the basin continued into early Eocene time. Pulses of tectonic activity resulted in erosion or nondeposition, especially in the western part of the basin, while subsidence and deposition continued in other areas of the basin.

Depositional Event 4: Fort Union Formation (Paleocene). Continuous deposition occurred throughout most of the basin across the Cretaceous-Tertiary boundary. Because the rocks are so similar lithologically, the differentiation between the lower-most Paleocene and uppermost Cretaceous can best be determined using palynological data. The Fort Union Formation consists of three members in the eastern half of the basin. The Waltman Shale member has a maximum thickness of 2,800 ft (850+ m) and was deposited during a period of major ponding in much of the basin during Paleocene time. Including the Waltman

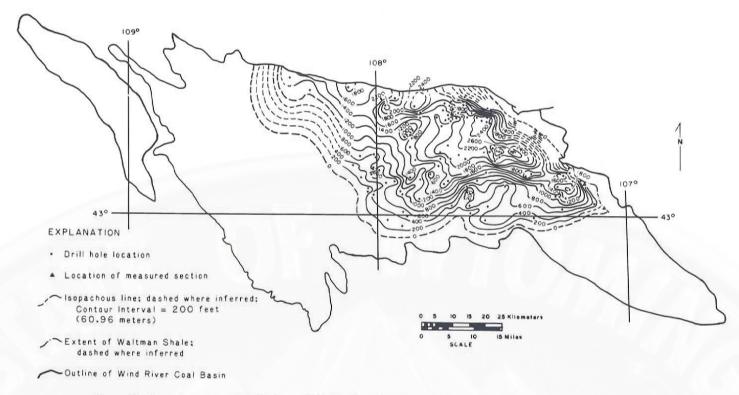


Figure 21. Isopachous map of the Waltman Shale Member of the Fort Union Formation, Wind River Basin, Wyoming.

Shale, the maximum overall thickness for the three members of the Fort Union is 7,000+ ft (2,140 m) in the northeastern part of the basin. In the western half of the basin the Fort Union consists of as much as 4,500 ft (1,372 m) of continuous sandstones, silt-stones, carbonaceous shales and coals, and has not been subdivided into members.

Tectonic Event 3. After deposition of the Fort Union Formation, major thrusting along the South Owl Creek Mountains thrust fault began. An unconformity on top of the Fort Union, especially along the basin margins, resulted when conglomerates shed off the upper plate of the thrust were deposited on top of the tilted Fort Union Formation.

Depositional Event 5: Indian Meadows Formation (lower Eocene). This formation was deposited during, and is the product of, major tectonic activity in and around the basin at this time. The Indian Meadows is, for the most part, unconformable with the rocks both above and below it. Predominantly conglomeratic, the Indian Meadows is extremely difficult to distinguish from the overlying Wind River Formation using geophysical well logs.

Tectonic Event 4. During deposition of the Indian Meadows and before deposition of the Lysite Member of the Wind River Formation, major thrusting continued along the South Owl Creek Mountains thrust fault. The Owl Creek Mountains and Casper Arch were thrust southward and westward up to (and possibly over) the structural axis of the basin. Erosion and structural deformation of the Indian Meadows and older rocks continued sporadically in the basin and an unconformity on top of the Indian Meadows was formed prior to deposition of the Wind River Formation.

Depositional Event 6: Wind River Formation (early Eocene). Large amounts of clastic debris, ranging from conglomerates to mudstones, began to accumulate as the Wind River For-

mation was deposited. This formation consists of two members: the lower Lysite member and the upper Lost Cabin member. In many surface exposures the members are separated by an angular unconformity; this unconformity most likely disappears in the subsurface. The combined maximum thickness for the Indian Meadows and Wind River formations is 5,500+ ft (1,680 m) in the northern part of the basin.

Tectonic Event 5. Widespread normal faulting occurred sometime post- Wind River Formation deposition. Evidence for this exists in many areas of the basin, but the Cedar Ridge fault in the Badwater area, north-central Wind River Basin, is particularly well documented (Love, 1978).

# OIL AND GAS POTENTIAL BELOW THE OWL CREEK MOUNTAINS THRUST PLATE

Trumbull (1914) described oil seeping from fractures in Precambrian granite at Copper Mountain, northeast of the Wind River Basin. The extent that the Owl Creek Mountains and Casper Arch overrode the basin is relatively unknown except for geophysical profiles and data from the Waltman and Tepee Creek fields. Gries (1983) described the Moncrief 16-1 well (T37N, R86W, sec. 16) which drilled through the Precambrian in the Casper Arch and into the overridden sedimentary rocks beneath the thrust, and produced 6 to 7 MCFGD from Cretaceous rocks. In the northeast part of the basin, only two to three miles south of the fault, the Madden field alone has produced more than 253 billion cubic feet of gas from Upper Cretaceous through lower Eocene rocks (Wyoming Oil and Gas Conservation Commission, 1988).

Two-dimensional views, as expressed by structure contour and isopachous maps for Upper Cretaceous through lower

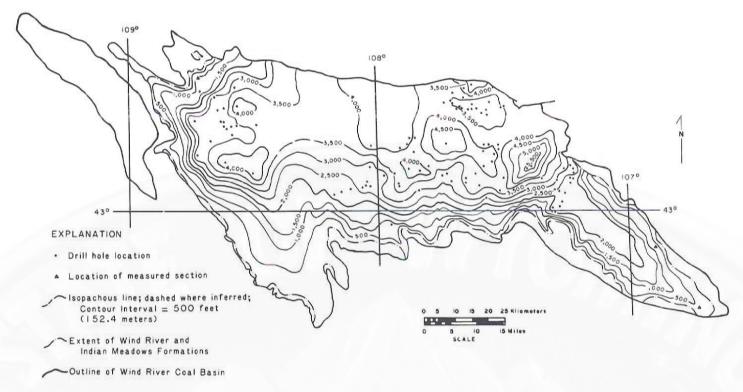


Figure 22. Isopachous map of the combined Wind River and Indian Meadows formations, Wind River Basin, Wyoming.

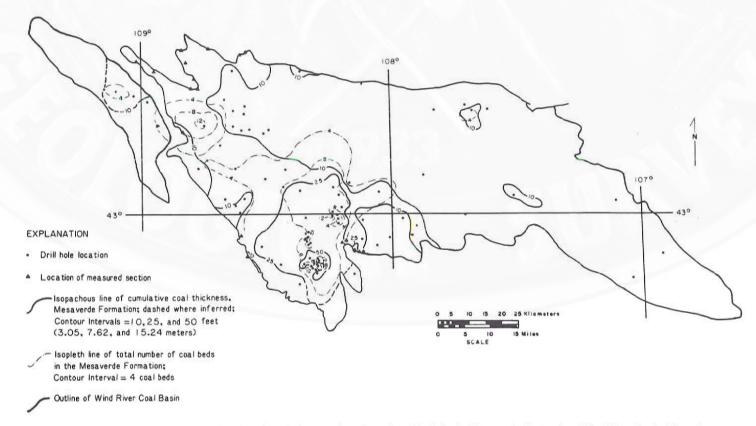


Figure 23. Isopachous map of total coal and isopleth map of number of coal beds in the Mesaverde Formation, Wind River Basin, Wyoming.

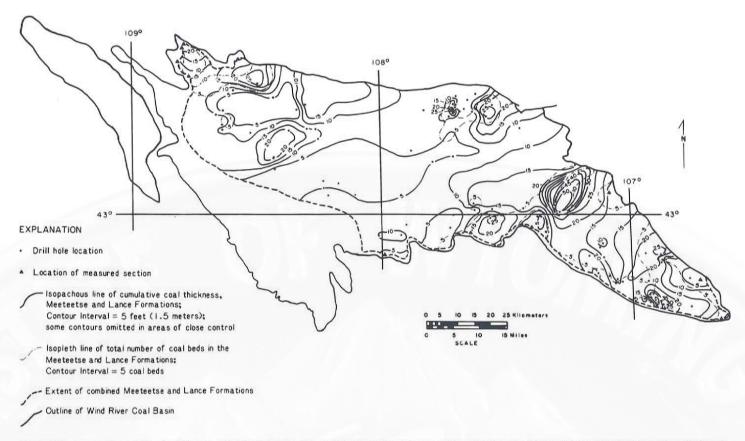


Figure 24. Isopachous map of total coal and isopleth map of number of coal beds in the Lance and Meeteetse formations, Wind River Basin, Wyoming.

Eocene rocks (Figs. 4, in pocket, 17, 18, 19, 20, 21, and 22) illustrate dramatically the great thickness of sedimentary rock directly adjacent to the surface trace of the South Owl Creek Mountains fault. Exploration beneath the fault into Eocene, Paleocene, and Upper Cretaceous rocks is minimal, particularly along the northern margin of the basin. At this time, one can only speculate on the existence of hydrocarbons and the presence of facies and fault traps in most of the subthrust half of the structural basin. However, it is possible, and we believe probable, that major hydrocarbon reserves exist in the sedimentary package beneath the South Owl Creek Mountains thrust fault.

#### CONCLUSIONS

This study demonstrates that as much as 20,000 feet (6,000 m) of predominantly fine-grained sedimentary rocks underlie (to the north and east) the South Owl Creek Mountains thrust fault. The question of exactly what the nature and extent of the thick sequence of sedimentary rocks is beneath the thrust in the eastern Wind River Basin has yet to be determined.

It has been well documented that the Wind River Basin is a major source of hydrocarbons (Benner, 1972; Brown and Shannon, 1989; Dunleavy and Gilbertson, 1986; Hodges and Knutson, 1980; Hubley, 1948; Jenkins, 1957; Keefer, 1969; Pirner, 1978; Ray, 1982; Rieke, 1981; Robertson, 1983; and Stauffer, 1971). Continued exploration will certainly discover significant additional hydrocarbons in the basin.

A refined and detailed three-dimensional stratigraphic frame-

work for Upper Cretaceous through lower Eocene rocks is here established. This framework has economic significance: hydrocarbons produced today in the Wind River Basin are directly related to stratigraphic traps in these rocks. Future potential for hydrocarbon production lies in untested areas, subthrust areas, areas of possible coalbed methane production, and ultra-deep areas. The stratigraphic framework outlined here should contribute to further understanding and future exploration of Wind River Basin mineral resources.

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. Drill hole data. Note: *data agrees with Chevron palynolo	ogy. #data agre	es with A	Amoco palyno	0,5	Fort Union	Fort							Mesaverde		Mesaverde			R.W. Jor	nes, T
erence Operator/Well Name	ship	XXXXXXX		Fort Union GL Formation	Formation Waltman Shale Member	Union Formation Lower Member	Lance Formation		Meeteetse Formation		Mesaverde Formation	Mesaverde Formation Teapot Sandstone	Formation unnamed middle member	Mesaverde Formation Parkman Sandstone	Formation Wallace Creek Shale	Mesaverde Formation Fales Member	Cody	Mesaverde Formation Alkali Butte Member	Cody Shale
Exxon CoJ#1 Tribal-731 Pan American Petroleum Corp./Tribal K #1 Pan American Petroleum Corp./Tribal #1 Impel Energy Co./Impel 3-8 Tribal Union Oil Co./Guy Forbs #1-C14	1N 2E 1N 2E 1N 2E 1N 4E 1N 4E		5449 542	90 27 30														2460 8368	4028 4809 10145
Pan American Petroleum Corp./S.A. Tribal Unit B Trigg Drilling Co./Trigg-Tribal #1-12 Continental Oil Co./Tribal 36-3 Florida Exploration Co./#1-4 Indian Butte	1N 5E 1N 5E 1N 5E 1N 6E	1 12 36 4	5049 503 4981 499 5132 51 5330 53	36 57 18 19														8308 7040 4787 8930	10340 8984 6068
Mapco Production Co./Tribal #1-19 Farmers Union Central Exchange/Tribal #1 Continental Oil Co./#32-6 Tribal Exxon Co./Tribal #534 Michigan-Wisconsin Pipeline Co./North Riverton Dome #1-12	1N 6E 1N 6E 1N 6E 1S 2E 1S 4E	19 28 32 2 12	5286 52 5462 545 5342 532 5270 525 5056 504	23 57					N.						A CONTRACTOR AND	a contraction of the contraction		5793 5490 5125 2575 4685	7780 7104 6430 3836 5850
Atlantic Richfield Co./Tribal #29 Atlantic Richfield Co./Tribal #1 Arco Oil and Gas Co./Tribal #40 Continental Oil Co./Tribal #7	1S 4E 1S 4E 1S 4E 1S 4E 1S 5E	25 25 25		59 64 60														3190 3171 3306 4764	4380 4350 4500 5750
	1S 5E 1S 5E 1S 5E 1S 5E	12	5249 523 5173 515 5213 515	57 97														4622 4714 4582 4482	5745 5878 5751 5672
Atlantic Refining Co./Tribal #13 Arco Oil and Gas Co./Arco-Tribal #41 Arco Oil and Gas Co./Tribal #37 Caulkins Oil and Gas Co./Alkali Butte Federal #1 Continental Oil Co./Tribal 6 #4	1S 5E 1S 5E 1S 5E 1S 6E 1S 6E	30 31	5283 526 5248 522 5392 537 5529 551 5220 520	25 76 18														3309 3350 3204 4821	4468 4498 4380 6010
Energetics Inc./Tribal #23x-17 Samedan Oil Co./#1 Woolery Exxon Co./#1 Tribal 90	1S 6E 1S 6E 2N 1E 2N 1E	17 11 21	5313 530 5339 532 5826 58	26 3155 11		CONTRACTOR OF THE PROPERTY OF												4813 3230 4795 1499	6032 4480 6547 3140
Amoco Production Co./#1-14 Tribal Impel Energy Co./#9-34 Tribal Phillips Petroleum Co./Missouri #1	2N 2E 2N 3E 2N 3E 2N 4E 2N 4E	14 34 8	5444 542 5443 542 5379 536 5415 540 5324	24 67 5498														7538 10948	9325 12641
Cities Services Oil Co./Tribal C-1 Husky Oil Co./11-17 Federal Paradise Atlantic Refining Co./Mary B. O'Conner #1	2N 4E 2N 4E 2N 5E 2S 4E 2S 4E	26 17 1	5324 5125 511 5281 526 5240 522 5335 538	66 24														2838 3023	4166 4399
Atlantic Refining Co./Tribal #11 Atlantic Refining Co./Tribal #7 Chicago Corp./Tribal #1	2S 5E 2S 5E 2S 6E 3N 1E	6 7 5	5427 541 5347 533 5686 567 5843 582	12 33 75							*400			93.8				2927 2718	4206 3960 1428
Austral Oil Co./Phillips-Austral #1 Hickerson Oil Co./W.E. Lloyd #1 Gulf Oil Corp./Mae Rhodes #1 Shell Oil Co./Tribal #33X-10	3N 1W 3N 2E 3N 2E 3N 2E	7 3 3 10	5685 5391 537 5399 538 5415 539	78 3378 87 *3445 91 3484			7833 *7785 7847				3000 9385 9268 9202						3605 11302 11100		
Shell Oil Co./Pavillion #11-14 Shell Oil Co./A. Woodring #23X-24 Samedan Oil Co./Clair E. Day #1	3N 2E 3N 2E 3N 2E 3N 2E	14 24	5338 532 5357 534 5252 524 5376 536	43 3450 43 3452 64 3410					*										-
Exxon Oil Co./Tribal #15-1 Belco Petroleum Co./#1-4 Five Mile	3N 3E 3N 3E 3N 3E 3N 4E	15 4	5306 529 5280 526 5217 519 5157 514	65 3500 96 45			10703				11740 11834						14645 14390		
Lomax Exploration Co./#1-9 Hardwick Tribal Lomax Exploration Co./#1-10 Tribal Mapco Inc./1-11 Tribal	3N 4E 3N 5E 3N 5E 3N 5E	9 10 11	5218 520 5008 499 4989 497 4957 494 4890 486	93 79 42					^				A CONTROL OF THE PROPERTY OF T					<u> </u>	
Hassie Hunt Inc./#1-2 Tribal Sinclair Oil Co./N.W. Pavillion 8 #1 Getty Oil Co./Government Hornbeck "A" #13-16	3N 5E 4N 1E 4N 2E 4N 2E 4N 2E	2 8 13	4890 486 5734 572 585 5440 542 5596 558	22 1078 59 3133 22 4340			8890 7960				10858 9638						12134		
Texaco Inc./Tribal "C" #1 Shell Oil Co./Government #41-26 Pan American Petroleum Corp./USA L. Wirth #1	4N 2E 4N 2E 4N 2E 4N 2E 4N 2W	25 26 28	5636 562 5707 569 5514 550 6116 610	24 95 01 3260			7300				8508								
Gulf Oil Co./Crowheart A 1-30-4A El Paso Natural Gas Co./#1 Hornbeck-Government	4N 2W 4N 2W 4N 3E 4N 3E	30 19	6038 601 5823 581 5490 547 5232 522	10 74 4313			*8790	<b>8</b>			3233 3434				-		3935 4047		
Florida Gas Exploration Co./Muddy Ridge #1-32 Impel Energy Corp.#1-8 Tribal Damson Oil Co./#16-1 Tribal Humble Oil Co./Tribal Tr.86 #1	4N 3E 4N 4E 4N 5E 4N 5E	32 8 16 19	5379 536 4991 498 4965 494 4981 496	67 80 45 63													0040		
Robert Emanuel/Tribal A #1 Gulf Oil Exploration and Production Co./#1 Shotgun Butte Tom Brown Inc./36-43 Tribal Phillips	5N 1E 5N 2E 5N 2E 5N 2E	7 10 36	6036 602 5612 559 5667 563 5398 536	99 34 68 3275				iii			270 4495 10090 10755						2340 12450		
Propel Energy Co./Tribal #1-20 Amoco Production Co./Tribal U #1 Gulf Oil Co./#1-35-1A Crowheart Butte-1	5N 3E 5N 3W 5N 3W 5N 3W	20 28 35	5105 507 6325 630 6282 627 6537 651	08 71 15					14896		16464 3734 3915 4695						18430 4452 4340 5420		
Pan American Petroleum Corp./S.A. Tribes Inc. Well #1 Phillips Petroleum Co./Boysen #1 Shell Oil Co./Government #23-20	5N 4E 5N 4E 5N 5E 32N 82W 32N 83W	11 27	5276 524 5131 511 4818 480 5675 566 631	18 03 63				5057 6900	7022	7307	5972 7581	5972 7581	6046 7671	6640 8146	6695 8208	7040 8457	7151 8600		
Union Oil Co. of California/Young Ranch Unit #1 Mobil Oil Co./Morton Creek #31-5-G Davis Oil Co./#1 Government-Diamond Ring Davis Oil Co./#1 Federal-Diamond Ring	32N 83W 32N 84W 32N 84W 32N 84W	34 5 18 19	5984 596 6158 614 6541 653 6667 665	63 46 30 56				5641	6415 8435 2112 1402	9045	9278 2784 2240	9278 2240	9350 2834 2280		9890 3325 2740	10089 3541 2867	10224 3742 3080		
Elf Aquitane Oil and Gas Co./Gray Rock Federal #1-20 Wayne E. Blackman/#1 Diamond Ring Ranch Wolf Exploration Co./Government #1 Champlin Petroleum Co./#1 Ryan Hill	32N 84W 32N 84W 32N 84W 32N 84W	20 28 29 35	6481 646 6776 676 7012 700 6862 684	66 66 00 47				5910	2705 2520 6033	6411	3648 3520 1493 6610	3648 3520 1493 6610	3720 3599 1535 6669	7150	4270 4291 2020 7196	4510 4610 2217 7416	4770 4950 2530 7625		
Tiger Oil Co./Federal #44-6 Cities Services/#1 Government The Grayrock Corp./Federal Austin Creek 1-14 Pubco Petroleum Corp./Krampert Federal #1	32N 85W 32N 85W 32N 85W 32N 97W	6 12 14 2	6400 639 6466 645 6469 645 5642 563	91 53 52 32			1		3744 3000	4260	1670 4559 3737	4559 3737	4669 3810	5067	2190 5113 4308	2458 5368 4512	2636 5530 4729 1550	9	
Pure Oil Co./Unit #5 Union Oil Co./USA 379 #1 National Associated Petroleum Co./Grieve #1 Pure Oil Co./#3 Unit	33N 84W 33N 84W 33N 84W 33N 84W	3 5 10 10	5998 598 6019 600 5957 594 5927 591	88 04 41					8550 8785		9431 9396 9490	9431 9396 9490	9530 9436 9578	9930	10100 9960 10003	10300 10834 10175 10189	10301		
Pure Oil Co./#1 Unit Union Oil Co. of California/West Poison Spider Unit #8 Union Oil Co. of California/West Poison Spider Unit #7 Union Oil Co. of California/West Poison Spider Unit #10	33N 84W 33N 84W 33N 84W 33N 84W	11 11 11 13	5889 587 5889 587 5871 585	72 72 56					8400 8306 8284	8821	9142 9101 9080 9212	9101 9080 9212	9190 9175 9272	±	9730 9727 9860	9940	9798 10052		
Union Oil Co. of California/West Poison Spider Unit #27-H21 Union Oil Co. of California/West Poison Spider Unit #23-23B Union Oil Co. of California/West Poison Spider Unit #20-D24	33N 84W 33N 84W 33N 84W 33N 84W	21 23 24	5880 586 6053 603 5842 583 5838 582 6127 611	35 30 21	۸				8225 9310 8716 8750 4206	9845 4857	9112 10171 9652 9691 5021	9112 10171 9652 9691 5021	9199 10230 9710 9780 5130		10794 10297 10340 5580	11005 10493 10563 5760	11120 10626 10662 5900		
Diamond Shamrock Corp./Soap Creek Federal #22-31 Chorney Oil Co./Soap Creek Unit #3 Chorney Oil Co./Soap Creek Unit #33-1	33N 85W 33N 85W 33N 85W 33N 85W 33N 86W	31 32 33	6127 611 6305 628 6210 619 6270 625 6164 615	89 98 54					4206 2220 2774 3003 4668	4857 5367	5021 3038 3642 3880 5542	5021 3038 3642 3880 5542	5130 3105 3784 3975 5609		5580 3550 4209 4411 6000	5760 3746 4398 4602 6219	5900 3950 4587 4789 6542		
Chorney Oil Co./#1 Bell Unit Apache Corp./U.S.AGeneva #1 Sinclair Oil and Gas Co./Federal Forest #1 General Atlantic Energy Corp./Morning Star #1-36	33N 86W 33N 86W 33N 86W 33N 86W 33N 86W	11 17 21	6164 615 6281 626 6406 639 6463 645 6312 630	61 94 51					1148 1681 1840	7050	7250 1878 2500 2702	7250 1878 2500 2702	7300 1957 2563 2780		7730 2369 3006 3240	7927 2550 3157 3450	8241 2883 3420 3695		
Sohio Petroleum Co./Zang #1-27 Gage Oil and Gas Co., Ltd./#1 Humble-State Clark Oil Producing Co./State 22-36	33N 86W 33N 86W 33N 86W 33N 86W	27 36 36	6683 666 6366 635 6410 639 6356 634	60 54 90					1061 1760 1763		1276 1946 2485 2650	1276 1946 2485 2650	1345 2055 2525 2685		1711 2491 3082 3172	1945 2685 3241 3327	2304 2910 3489 3580		
Occidental Petroleum Co./Government-Ronglis #1 Grynberg and Associates/Seven Mile Hill Area Federal 13-7 Sharples Oil Co./Government #1	33N 93W 33N 95W 33N 95W 33N 95W	3 7 15	5800 578 5401 538 5668 566 6435 640	87 85 61							3318						527 2720 4292	3610 4918	4684
Farmers Union Central Exchange Inc./Apache-Government #1 Pan American Petroleum Corp./B.C.U. #90 Pan American Petroleum Corp./B.C.U. #95	33N 95W 33N 96W 33N 96W 33N 96W	28 2 2	5714 569 5349 533 5325 531 5255 524	95 37 14							3381 1754 1983 1778						3971 2967 3210 2972	4330	5083
Stanolind Oil and Gas Co./Mesa Verde #26 Amoco Production Co./#141 Beaver Creek Diamond Shamrock Corp./Nine Mile Draw Federal #23-8	33N 96W 33N 96W 33N 96W 33N 96W	3 4 8	5266 525 5229 520 5350 533 5306 529	56 05 37							1520 #2520 3975 3888						2713 3718 5174 5292		
Amoco Production Co./Tensleep B.C.U. #115 Stanolind Oil and Gas Co./B.C.U. #8-A	33N 96W 33N 96W 33N 96W 33N 96W	9 9	5280 526 5289 527 5266 5267 525	76							2049 1953 1903 1749					9	3285 3075 3128 2908		× .
Stanolind Oil and Gas Co./Mesa Verde #20 Stanolind Oil and Gas Co./B.C.U. #24 Stanolind Oil and Gas Co./B.C.U. #39-M	33N 96W 33N 96W 33N 96W 33N 96W	10 10 10	5248 5241 5256 524 5298 528	83							1655 1652 1425 1470						2845 2685 2580 2550		
Stanolind Oil and Gas Co./B.C.U. #3 Amoco Production Co./B.C.U. Madison #146 Amoco Production Co./#143 Beaver Creek	33N 96W 33N 96W 33N 96W 33N 96W	14 15 15	5407 539 5384 5466 544 5267 524	44 43							1437 #1480 #1770					***************************************	2645 3197 2720		
Amoco Production Co./B.C.U. #123 Stanolind Oil and Gas Co./Tensleep #17 Pan American Petroleum Corp./B.C.U. #63	33N 96W 33N 96W 33N 96W 33N 96W	15 15 22	5296 526 5278 526 5375 535 5315 529	63 54 99							1580 1640 1515 3050						2742 2881 2782 4410 2470		
Sinclair Oil Co./Federal 646 Fremont #2 Pan American Petroleum Corp./U.S. Smelting and Refining #1 True Oil Co./Sun Ranch Unit #1	33N 96W 33N 97W 34N 85W 34N 85W 34N 86W	10 25 30	5702 569 5522 551 5939 592 6057 604	12 28 46			6033 4620		7342 6940		1845 2803 8155 7726	8155 7726	8226 7781		8710 8225	8880 8400	3974 8705		
Exxon Co. USA/Muddy Waters Unit #1  Diamond Shamrock Corp./Water Creek Unit #1  Diamond Shamrock Corp./Water Creek Unit #2	34N 86W 34N 86W 34N 86W	26 30 34	6196 618 6091 607 6296 628 6182 616	70 30 66	STRANCE		5585 5429 4412 5140		5633 6643 3138	3685	7605 6511 7500 3822	6511 7500	6594 7550		7005 8015 4338	7157 8151 4475	8518 7350 8475 4715		13
National Co-op Refinery Assn./Wallace Creek Government #1 Anchutz Oil Co./#1 Government C.I.G. Exploration Co./#3-34-91 State	34N 87W 34N 87W 34N 91W 34N 91W 34N 91W	22 2 3	6276 626 6219 620 5794 578 5734 572 5794 578	05 82 23			2549 2320		2933 447 1090	3483	3646 882 1512	3646	3715		4155	4275	4510 1750 2557 4010	2176 2862	2475 3193
W.E. Saver/Federal #43-11 Seaboard Oil Co./Double Butte #2 Seaboard Oil Co./Double Butte #1	34N 91W 34N 92W 34N 93W 34N 93W	11 8 2	5822 581 5745 573 5444 543 5577 556	15 36 35 1035	1670	1870	2440	<del>*************************************</del>	1400		1795 3080 2573						2602 3800 3449	4410 3881	4915
Ohio Oil Co./Government Cornell #1 Seaboard Oil Co./Double Butte #3 Occidental Petroleum Corp./#1 Government-Campbell Ridge	34N 93W 34N 93W 34N 94W 34N 94W	12 12 7	5503 549 5530 552 5585 557 5622 561	92 21 72	1022	1203			1711 1040 2082 1953		2150 1450 2580 2415						2882 2206 3229 3025	3618 3603 3373	4250 4680 4486
Amerada Petroleum Co./#1 USA Grisby Amoco Production Co./B.C.U. #142 Sinclair Oil Co./Federal 4000 Fremont #1	34N 94W 34N 96W 34N 98W 35N 84W	23 35 24	5624 561 5458 543 521 5995 597	36 15						,	853 #1765 *2117					*	1520	1894	2903
British American Production/Government Downer #1 Diamond Shamrock Corp./#1 McFarland Ranch Coastal Oil Co./Bullfrog #2-7-36-86	35N 84W 35N 85W 36N 86W 35N 86W	31 21 7	5945 593 5894 587 6370 634 5886 587	37 78 40 2610	3028	4080	6022		10632		11735	11735	11854		12415	12604	12944	4. 5	
Humble Oil and Refining Co./Hells Half Acre Unit #2 Terra Resources/#6-2 California Oil Co./Cooper Reservoir	35N 86W 35N 86W 35N 87W 35N 87W	14 2 15	5859 582 5876 586 6030 602 6162 615	63 20 2170 52 2170	2170 2575	5687 3668 3331	7450		11240	12464	12703	12703	12785	13450	13538	13861	8305		
Shell Oil Co./Aspirin Creek Unit 11-22 Sohio Petroleum Co./Wildhorse Butte 28-1 Sunray Mid-Continent Co./#1-C Federal	35N 87W 35N 87W 35N 87W 35N 88W 35N 88W	22 28 13	6187 617 6185 620 6140 611 6336 632 6442 642	03 *2245 17 2076 25			#4350 *4385 4150		6485	7182	7297	7235	7325		7714	7900	8071		
Diamond Shamrock Corp./Conoco Coal Bank #1-27 Davis Oil Co./Windjammer Federal #1 Conoco/Raderville #6	35N 88W 35N 88W 35N 88W 35N 88W	27 27 31	6305 628 6281 626 6601 658 6612 660	39 61 89	2480	2789													
El Paso Natural Gas Co./#1 Teepee Ring Inexco Oil Co./#1 Hawkins Draw Inexco Oil Co./#3 Hawkins Draw	35N 89W 35N 89W 35N 90W 35N 90W	7 18 9	6116 611 6160 614 5873 585 5885 587	11 2550 43	6105	6386													
Inexco Oil Co./#2 Hawkins Draw Continental Oil Co./Love Ranch #1 Lomax Exploration Co./Federal 14-23	35N 90W 35N 91W	25	6147 613		4340 4760	4829					8372 7165								5545
Quintana/Hawkins Draw #1 Scientific Exploration CoF.W.Gage/North Muscrat Gov't #1 Sun Oil Co./Wolf-Federal #1	35N 91W	23	5838 582 5718 570	71 30 27 05	4340 4760 3911 4661	4829 4912 4403 5090	3160				7165 6623 6142	6142 3955	6199			4534	7755 4950	5318	
	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W	23 26 18 20 31	5838 582 5718 570 5691 568 5446 543 5478 546 5600 558	71 30 27 55 56 80 34 57	4760 3911 4661 #2682 2640 1590	4912 4403 5090 #3185 3185 1858	3160 #5675 2894 4920				7165 6623					. 4534		5318 7508 4729 6741	8104 5310 7393
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 93W 35N 94W 36N 86W 36N 86W 36N 87W	23 26 18 20 31 27 29 18 19	5838 582 5718 570 5691 568 5446 543 5478 546 5600 558 5432 541 5445 543 6269 625 6140 613 6313 629	71 30 27 27 25 30 34 44 57 38 19 31 57 25 28 29 30 24 23	4760 3911 4661 #2682 2640 1590 2668 3000 2830 *3430	4912 4403 5090 #3185 3185 1858 3050 4010 4055 *4226	#5675 2894				7165 6623 6142 3955 6132 3264					4534	4950 6885 4208	7508 4729	5310
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 93W 35N 94W 36N 86W 36N 86W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W	23 26 18 20 31 27 29 18 19 1 11 21 24 25	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6140         613           6231         622           6198         618           6091         608           6008         600	71 72 73 75 75 75 75 75 76 76 77 78 78 78 79 79 79 70 70 70 70 70 70 70 70 70 70	4760 3911 4661 #2682 2640 1590 2668 3000 2830 3430 3630 3442 2785 2875	#3185 3185 1858 3050 4010 4055 *4226 4815 4448 3920 4062	#5675 2894 4920 6047 *6192				7165 6623 6142 3955 6132 3264					4534	4950 6885 4208	7508 4729	5310 7393
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 93W 35N 94W 36N 86W 36N 87W 36N 87W	23 26 18 20 31 27 29 18 19 1 11 21 24 25 33 34 3 9	5838         582           5718         570           5691         568           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6140         613           6231         622           6198         618           6091         608           6008         600           6278         626           6199         618           6006         598           5999         598	71	4760 3911 4661 #2682 2640 1590 2668 3000 2830 3430 3630 3442 2785 2875 2853 2405 6310 6525	#3185 3185 1858 3050 4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405	#5675 2894 4920 6047 *6192 5580 *6520 9656				7165 6623 6142 3955 6132 3264					. 4534	4950 6885 4208	7508 4729	5310 7393
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./#1-2	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 93W 35N 94W 36N 86W 36N 86W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W 36N 88W 36N 88W 36N 88W 36N 88W 36N 88W 36N 88W 36N 89W 36N 89W 36N 89W	23 26 18 20 31 27 29 18 19 11 21 24 25 33 34 3 9 24 23 34 1	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6008         600           6278         626           6199         618           6006         598           6093         608           5961         594           6105         5728	71 300 771 300 772 773 775 775 775 775 775 775 775 775 775	4760 3911 4661 #2682 2640 1590 2668 3000 2830 3430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567	4912 4403 5090 #3185 3185 1858 3050 4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080	#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349 *8449				7165 6623 6142 3955 6132 3264					. 4534	4950 6885 4208	7508 4729	5310 7393
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./#1-2 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 93W 35N 94W 36N 86W 36N 86W 36N 87W 36N 90W 36N 90W 36N 90W	23 26 18 20 31 27 29 18 19 1 11 21 24 25 33 34 3 24 23 34 1 14 21 26 28	5838         582           5718         570           5691         568           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6140         613           6231         622           6198         618           6008         600           6278         626           6199         618           6006         598           5999         598           6093         608           5961         594           6105         609	71	4760 3911 4661 #2682 2640 1590 2668 3000 2830 34430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567	#3185 3185 1858 3050 4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505	#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349		8745		7165 6623 6142 3955 6132 3264 5402			7		9915	4950 6885 4208	7508 4729	5310 7393
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./#1-2 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Walte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 94W 36N 86W 36N 86W 36N 87W 36N 89W 36N 89W 36N 90W 36N 90W 36N 90W 36N 90W	23 26 18 20 31 27 29 18 19 1 11 21 24 25 33 34 3 9 24 23 34 1 14 21 26 28 31 6 14 15	5838         582           5718         570           5691         568           56446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6008         600           6199         618           6006         598           5999         598           6093         608           5961         594           6105         609           5728         5810           5810         580           5726         571           5720         589           5720         589	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180 4200  4398 3830 3844	#3185 3185 1858 3050 4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400	#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349 *8449 7757 7070 7427		8745 10039		7165 6623 6142 3955 6132 3264 5402	3955	4042				4950 6885 4208 6260	7508 4729	5310 7393
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte #8 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal O60 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#2 Tide Federal Amerada Hess Corp./Federal #30-23	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 90W 36N 90	23 26 18 20 31 27 29 18 19 11 21 24 25 33 34 3 9 24 23 34 1 1 1 1 26 28 31 6 14 15 26 27 29 30 30 30 30 30 30 30 30 30 30	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6008         600           6278         626           6199         618           6006         598           5093         508           5728         5728           5720         569           5799         578           5540         552           5618         560           5677         565           5501         548           5406         548           5407         543           5403         544           543         544           543         544           543         544	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844 4655 4778 4418 4418	#3185 3185 3185 1858 3050 4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400 6032 5095 #5086 6150 5835 5307 5192	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *7757 7070 7427  #7305				7165 6623 6142 3955 6132 3264 5402	9310	9421			9915	4950 6885 4208 6260	7508 4729	5310 7393
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Squak Illis Unit #2 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#1 Squaw Butte J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal 1-C-13	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 89W 36N 90W 36N 90	23 26 18 20 31 27 29 18 19 11 21 24 25 33 34 4 23 34 1 1 126 28 31 6 14 15 24 25 30 31 31 31 31 31 31 31 31 31 31	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6008         600           6278         626           6199         618           6006         598           5999         598           5726         571           5726         571           5729         578           5540         552           5618         560           5678         565           5689         568           5640         548           5496         548           5403         539           5447         543           5493         548           5098         508           5002         502           5032         502 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844 4655 4778 4418 4288 3103 4940 4294 5413</td> <td>#3185 3185 3185 1858 3050 4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400 6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *7757 7070 7427  #7305</td> <td></td> <td></td> <td></td> <td>7165 6623 6142 3955 6132 3264 5402</td> <td>9310</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260</td> <td>7508 4729</td> <td>5310 7393</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844 4655 4778 4418 4288 3103 4940 4294 5413	#3185 3185 3185 1858 3050 4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400 6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *7757 7070 7427  #7305				7165 6623 6142 3955 6132 3264 5402	9310	9421			9915	4950 6885 4208 6260	7508 4729	5310 7393
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/#9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./Squaw Butte #7 Continental Oil Co./H6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 14-4 Inexco Oil Co./#1-16 Co./Squaw Butte Walte Wa	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 93W 35N 94W 36N 86W 36N 86W 36N 87W 36N 97W 36N 99W 36N 99W 36N 99W 36N 99W 36N 91W 36N 91W 36N 91W 36N 91W 36N 91W 36N 92W 36N 93W	23 26 18 20 31 27 29 18 19 1 11 21 24 25 33 34 3 9 24 23 34 1 14 21 26 28 31 6 14 15 24 9 11 13 14 15 16 17 18 19 10 10 10 10 10 10 10 10 10 10	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6098         600           6199         618           6006         598           5999         598           5726         571           5726         571           5720         589           5726         571           5799         578           5720         589           5726         571           5905         589           5618         560           5678         565           5689         568           5406         548           5403         539           5447         543           5098         508           5032         502 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 34430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835</td> <td>4912 4403 5090  #3185 3185 1858 3050  4010 4055 44226 4815 4448 3920 4062 3658 3503 7615  7405 *5150 *5908 5505 *6080 5394 4764  4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246  4951 5898 5307 7353 4317 5087</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *7757 7070 7427  #7305</td> <td></td> <td></td> <td></td> <td>7165 6623 6142 3955 6132 3264 5402</td> <td>9310</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260</td> <td>7508 4729</td> <td>5310 7393</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 34430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835	4912 4403 5090  #3185 3185 1858 3050  4010 4055 44226 4815 4448 3920 4062 3658 3503 7615  7405 *5150 *5908 5505 *6080 5394 4764  4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246  4951 5898 5307 7353 4317 5087	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *7757 7070 7427  #7305				7165 6623 6142 3955 6132 3264 5402	9310	9421			9915	4950 6885 4208 6260	7508 4729	5310 7393
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/#9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./Squaw Butte #7 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#1 Squaw Butte J.M. Huber Corp./#5-1 Federal Morrison J.M. Huber Corp./#5-1 Federal Morrison J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal 1-C-13 Humble Oil Co./Federal 1-C-13 Humble Oil Co./Federal N.D. #43-10 Mobil Oil Co./Carvner Homestead Unit # F33-14-6 Pan American Petroleum Corp./Fuller Reservoir #12-30 Echo Oil Co./Federal K.D. #43-10 Mobil Oil Co./Carvner Homestead Unit # F33-14-6 Pan American Petroleum Corp./Fuller Reservoir #12-25 Superior Oil Co./Fuller Reservoir #12-26	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 89W 36N 89W 36N 90W 36N 90	23 26 18 20 31 27 29 18 19 1 11 21 24 25 33 34 3 9 24 23 34 1 14 21 26 28 31 6 14 21 26 28 31 6 14 15 24 9 11 30 30 30 35 5 6 13 15 17 30 10 14 24 24 25 26	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6009         608           6199         618           6006         598           5999         598           6003         609           5726         571           5905         589           5720         569           5799         578           5618         560           5726         571           5905         589           5618         560           5799         578           5618         560           5678         568           5689         568           5403         539           5447         543           5449         548           5098         508 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844 4655 4778 4418 4288 3103 4940 4294 5413 4816 6768</td> <td>#3185 3185 3185 1858 3050  #010 4015 4426 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 44104 44081</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004</td> <td></td> <td></td> <td></td> <td>7165 6623 6142 3955 6132 3264 5402 10859 9310 11050</td> <td>9310</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515</td> <td>7508 4729 6741</td> <td>5310 7393 7313</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844 4655 4778 4418 4288 3103 4940 4294 5413 4816 6768	#3185 3185 3185 1858 3050  #010 4015 4426 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 44104 44081	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004				7165 6623 6142 3955 6132 3264 5402 10859 9310 11050	9310	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515	7508 4729 6741	5310 7393 7313
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./Squaw Butte #7 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#1 Squaw Butte J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal   Hanagan	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 87W 36N 88W 36N 87W 36N 88W 36N 87W 36N 89W 36N 90W 36N 91W 36N 91W 36N 91W 36N 91W 36N 91W 36N 92W 36N 93W 36N 93W 36N 93W 36N 93W 36N 93W 36N 93W 36N 94W 37N 86W 37N 87W	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 1 14 21 26 28 31 6 14 15 24 9 11 30 30 35 5 6 13 15 17 30 10 14 24 25 26 33 29 31 3	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6140         613           6231         622           6198         618           6091         608           6008         600           6278         626           6199         618           6006         598           6093         508           5961         594           6105         5728           5720         569           5799         578           5540         552           5618         560           5678         565           5689         568           5501         548           5496         548           5403         539           541         543           5493         548           5403         539           5370         535 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3430 3430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180 4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980</td> <td>#3185 3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 #4104 41404 #4081 3945 #*3638</td> <td>#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349 *8449 7757 7070 7427 #7305 #8820  7200 #7100 6995</td> <td></td> <td></td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402 10859 9310 11050</td> <td>9310</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3430 3430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180 4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980	#3185 3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 #4104 41404 #4081 3945 #*3638	#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349 *8449 7757 7070 7427 #7305 #8820  7200 #7100 6995			10430	7165 6623 6142 3955 6132 3264 5402 10859 9310 11050	9310	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #6 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./Squaw Butte #7 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Walte #8 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#1 Squaw Butte J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal 1-C-13 Humble Oil Co./Foderal 1-C-13 Humble Oil Co./Federal Inc.#13 Humble Oil Co./Federal Inc.#13 Humble Oil Co./Federal To-13 Humble O	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 93W 35N 93W 35N 94W 36N 86W 36N 87W 36N 90W 36N 91W 36N 91W 36N 92W 36N 93W 36N 93W 36N 93W 36N 93W 36N 93W 36N 93W 36N 94W 36N 94W 36N 94W 36N 94W 36N 94W 37N 86W 37N 86W 37N 86W 37N 86W 37N 88W 37N 88W	23 26 18 20 31 27 29 18 19 1 11 21 24 25 33 34 3 9 24 23 34 1 14 21 26 28 31 6 14 15 24 21 30 30 30 35 5 6 13 15 17 30 10 14 24 25 26 33 29 31 3 9 18 26 32	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6008         600           6278         626           6199         618           6006         598           5999         598           5726         571           5726         571           5728         5810           5800         579           578         566           5678         565           5689         568           5640         548           5496         548           5403         539           5447         543           5493         548           5403         539           5370         535           5111         509 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778</td> <td>4912 4403 5090  #3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615  7405 *5150 *5908 5505 *6080 5394 4764  4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 7447 #4104 #4081 3945</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760</td> <td></td> <td>10039</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402 10859 9310 11050 8215 8153 8015 7670 7471</td> <td>9310</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778	4912 4403 5090  #3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615  7405 *5150 *5908 5505 *6080 5394 4764  4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 7447 #4104 #4081 3945	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760		10039	10430	7165 6623 6142 3955 6132 3264 5402 10859 9310 11050 8215 8153 8015 7670 7471	9310	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #8 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./#4-2 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte #8 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#2 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#1 Squaw Butte J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal 1 To13 Humble Oil Co./Foderal 1 To14 Pan American Petroleum Corp./USA F.H. Lewis #1 Pan American Petroleum Corp./USA F.H. Lewis #1 Pan American Petroleum Corp./Finenchie Draw #9 Pan American Petroleum Corp./Finenchie Draw #0 Humble Oil and Refining Co./Frenchie Draw #3 Humble Oil and Refining Co./Frenchie Draw #3	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 87W 36N 88W 36N 87W 36N 89W 36N 90W 36N 91W 36N 91W 36N 91W 36N 92W 36N 93W 36N 94W 37N 86W 37N 86W 37N 86W 37N 86W 37N 86W 37N 86W 37N 88W	23 26 18 20 31 27 29 18 19 1 11 21 24 25 33 34 3 9 24 23 34 1 14 21 26 28 31 6 14 15 24 9 11 30 30 30 35 5 6 13 15 17 30 10 14 24 25 26 33 39 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6008         600           6278         626           6199         618           6006         598           5999         598           5726         571           5726         571           5905         589           5720         569           5799         578           5510         580           5678         565           5689         568           5689         568           5640         548           5496         548           5403         539           5032         502           5032         502           5370         535 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180 4200  4398 3830 3844 4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316</td> <td>#3185 3185 3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7353 4317 5087 7147 #4104 41404 #4081 3945  #*3638</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760</td> <td></td> <td>10039</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402 10859 9310 11050 8215 8153 8015 7670 7471</td> <td>9310</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180 4200  4398 3830 3844 4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316	#3185 3185 3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7353 4317 5087 7147 #4104 41404 #4081 3945  #*3638	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760		10039	10430	7165 6623 6142 3955 6132 3264 5402 10859 9310 11050 8215 8153 8015 7670 7471	9310	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #8 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #3 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./#4-2 Continental Oil Co./#5-2 Continental Oil Co./#5-2 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte #8 Norther Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte #8 Norther Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#2 Tide Federal Amerada Hess Corp./#6-deral #30-23 Northwest Exploration Co./#1 Squaw Butte J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal 1-C-13 Humble Oil Co./Sand Hills #3 Humble Oil Co./Cavner Homestead Unit #2 Husky Oil Co./Fuller Reservoir #12-30 Echo Oil Co./Federal K.D. #43-10 Mobil Oil Co./Cavner Homestead Unit # F33-14-6 Pan American Petroleum Corp./USA F.H. Lewis #1 Pan American Petroleum Corp./USA F.H. Lewis #1 Pan American Petroleum Corp./Faller Reservoir #22-25 Superior Oil Co./Maltman Unit #1 Champlin Oil and Refining Co./Frenchie Draw #9 Pan American Petroleum Corp./Filler Reservoir #12-66 W.C. McBride Inc./#1 Gov't- Croft Ranch Pure Oil Co./Waltman Unit #1 Champlin Oil and Refining Co./Frenchie Draw #3 Humble Oil and Refining Co./Frenchie Draw #3 Humble Oil and Refining Co./Frenchie Draw #3 Humble Oil and Refining Co./Frenchie Draw	35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 89W 36N 90W 36N 91W 36N 91W 36N 91W 36N 91W 36N 91W 36N 91W 36N 92W 36N 93W 36N 94W 37N 89W 37N 90W 37N 90	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 1 14 21 26 28 31 6 14 21 26 28 31 15 17 30 30 35 5 6 13 15 17 30 10 14 24 25 26 33 29 31 3 9 18 26 32 31 3 9 18 26 32 15 17 18 22 28 33 17 18 22 28 33 17 18 22 28 33 17 18	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6008         600           5999         598           6093         608           5961         594           6105         5728           5720         569           5720         569           5720         569           5540         552           5618         565           5689         568           5501         548           5496         548           5403         539           5032         502           5370         535           5311         509           5378         536           5032         502           5370         535 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180 4200  4398 3830 3844 4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5323 5335 5445 5310 5607 4988 5061 488 5061 488 5061 488 5061</td> <td>#3185 3185 3185 1858 3050  #010 4015 4055 *4226 42815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 71592 4448 5246 4951 5898 5307 7147 #4104 4140 #1408 #13945  #*3638 6910 7240 7080 7430 6849 6890 7030 66948 6820 6408 7178 6944 7850</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787</td> <td></td> <td>10039</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402 10859 9310 11050 8215 8153 8015 7670 7471</td> <td>9310</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180 4200  4398 3830 3844 4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5323 5335 5445 5310 5607 4988 5061 488 5061 488 5061 488 5061	#3185 3185 3185 1858 3050  #010 4015 4055 *4226 42815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 71592 4448 5246 4951 5898 5307 7147 #4104 4140 #1408 #13945  #*3638 6910 7240 7080 7430 6849 6890 7030 66948 6820 6408 7178 6944 7850	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787		10039	10430	7165 6623 6142 3955 6132 3264 5402 10859 9310 11050 8215 8153 8015 7670 7471	9310	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 4-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 60 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#2 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#1 Squaw Butte J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal I-C-13 Humble Oil Co./Sand Hills Wills #3 Humble Oil Co./Foloron Creek Unit #2 Husky Oil Co./Federal K.D. #43-10 Mobil Oil Co./Faderal K.D. #43-10 Mobil Oil Co./Faderal K.D. #43-10 Mobil Oil Co./Federal To. #43-10 Mobil Oil Co./Waltman Unit #1 California Oil and Refining Co./Frenchie Draw #9 Pan American Petroleum Corp./Julla Feservoir #1-26A Humble Oil and Refining Co./Frenchie Draw #10 Humble Oil and Refining Co./Frenchie Draw #10 Humble Oil and Refining Co./Frenchie Draw #11 Humble Oil and Refining Co./Frenchie Draw #	35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W 36N 89W 36N 90W 36N 90	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 1 1 26 28 31 6 14 15 24 9 11 30 30 35 5 6 13 15 17 30 10 14 24 25 26 33 29 31 3 9 18 26 32 15 17 18 22 28 33 17 21 10 11 12 22 24	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6140         613           6231         622           6198         618           6091         608           6078         626           6199         618           6090         598           5999         598           5999         578           5728         5728           5720         569           5799         578           5540         552           5618         565           5689         568           5580         568           5581         548           5493         548           5493         548           5493         548           5493         548           5493         548           5493         548           5493         548 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3430 3430 3630 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5323 5335 5445 5310 5607 4988 5061 4853 5607 4988 5061 4853 5607 4988 5061 4853 5607 4988 5061 4853 5607 4988 5061 4853 5607</td> <td>#3185 3185 3185 1858 3050  #010 4015 4055 *4226 44815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7147 #4104 4140 #4081 3945  #*3638 6910 7240 7080 7430 6849 6890 7030 6848 6820 6408 7178 6944 7850 7540 6523 6671</td> <td>#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349 *8449 7757 7070 7427 #7305 #8820  7200 #7100 6995 #7004 6760 5293</td> <td></td> <td>10039</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402 10859 9310 11050 8215 8153 8015 7670 7471 10614</td> <td>9310 11050</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3430 3430 3630 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5323 5335 5445 5310 5607 4988 5061 4853 5607 4988 5061 4853 5607 4988 5061 4853 5607 4988 5061 4853 5607 4988 5061 4853 5607	#3185 3185 3185 1858 3050  #010 4015 4055 *4226 44815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7147 #4104 4140 #4081 3945  #*3638 6910 7240 7080 7430 6849 6890 7030 6848 6820 6408 7178 6944 7850 7540 6523 6671	#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349 *8449 7757 7070 7427 #7305 #8820  7200 #7100 6995 #7004 6760 5293		10039	10430	7165 6623 6142 3955 6132 3264 5402 10859 9310 11050 8215 8153 8015 7670 7471 10614	9310 11050	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc.#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #9 California Oil Co./Waltman Unit #9 Amax Petroleum Corp.#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#1-30 Rederal California Oil Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./\$quaw Butte Unit 23-3 Phillips Petroleum Co./\$quaw Butte #7 Continental Oil Co./#1-2 Continental Oil Co./#5quaw Butte #7 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 26-1 Phillips Petroleum Co./Squaw Butte #8 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 24-1 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills buti #2 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-24 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-30 Echo Oil Co./Federal Federal Common Did Tide Federa	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 93W 36N 86W 36N 87W 36N 89W 36N 90W 36N 91W 36N 91W 36N 91W 36N 91W 36N 92W 36N 93W 36N 94W 36N 94	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 1 1 4 21 26 28 31 6 14 15 24 9 11 30 30 30 35 5 6 13 15 17 30 10 14 25 26 33 39 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 31 32 32 31 33 39 39 30 30 30 30 30 30 30 30 30 30 30 30 30	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6140         613           6231         622           6198         618           6091         608           6008         600           6278         626           6199         618           6006         598           5999         598           5726         571           5728         5810           580         5726           5720         569           5799         578           5540         552           5618         560           5678         565           5689         568           5640         548           5493         548           5403         539           5370         535           5411         509           5378         536 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3990 4398 *3316  5400 4388 4778 5418 3960 3980  *3316</td> <td>#3185 3185 3185 3185 1858 3050  #010 4015 4026 4815 4448 3920 4062 3658 3503 7615  7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 44104 #4081 3945  #*3638 6910 7030 6948 6890 7030 6948 6890 7030 66408 7178 7640 76523</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480</td> <td></td> <td>10039</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8015 7670 7471 10614</td> <td>9310 11050</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3990 4398 *3316  5400 4388 4778 5418 3960 3980  *3316	#3185 3185 3185 3185 1858 3050  #010 4015 4026 4815 4448 3920 4062 3658 3503 7615  7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 44104 #4081 3945  #*3638 6910 7030 6948 6890 7030 6948 6890 7030 66408 7178 7640 76523	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480		10039	10430	7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8015 7670 7471 10614	9310 11050	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc.#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp.#21-1 Amax Henline Chevron/44 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte Unit 26-5 Continental Oil Co./#1-2 Continental Oil Co./\$4 Eurit Cartinental Oil Co./#1-2 Continental Oil Co./\$4 Eurit Cartinental Oil Co./#1-2 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Walte Wal	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 87W 36N 87W 36N 87W 36N 89W 36N 89W 36N 90W 36N 90	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 1 1 4 21 26 28 31 6 14 15 24 9 11 30 30 30 35 5 6 6 13 15 17 30 10 14 24 25 26 33 9 18 26 32 17 21 1 10 11 22 24 27 29 2 2 3 16 23 21 10 11 22 24 27 29 2 2 3 16 23 21 32	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6098         600           6199         618           6006         598           5999         598           5726         571           5720         569           5799         578           5726         571           5720         569           5799         578           5540         522           5618         560           5678         568           5689         568           5689         568           5689         568           5640         58           5032         502           5032         502           5370         535	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3430 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5523 5335 5445 5310 5607 4988 5625 5323 5335 5445 5310 5607 4988 5625 5323 5335 5445 5510 5607 4988 5625 5627 56270 4775	#3185 3185 3185 3185 1858 3050  #010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 *5908 5505 *6080 6322 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 #4104 44081 3945  #*3638 6910 7030 6849 6890 7030 6849 6890 7030 6849 6890 7030 66489 66740 7680 7640 7680 7640 7680 7640 7680 7640 7680 7640 7680 7640 7680 7640 7680 7640 7680 7640 7680 7640 66523 6671 6180 6380 7102 7875	#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349 *8449 7757 7070 7427 #7305 #8820  7200 #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185		10039	10430	7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8015 7670 7471 10614	9310 11050	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc.##11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #9 California Oil Co./Waltman Unit #2 Chevron/Waltman Unit #9 Amax Petroleum Corp.##21-11 Amax Henline Chevon/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integriy Oil#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./\$quaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte Unit 26-5 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 28-1 Northmest Exploration Co./#3 Tide Federal Humble Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#1 Squaw Butte J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal 1-C-13 Humble Oil Co./Foller Reservoir #12-30 Echo Oil Co./Federal H.O. #43-1  Humble Oil Co./Foller Reservoir #12-30 Echo Oil Co./Federal H.O. #43-1  Omboil Oil Co./Foller Reservoir #12-6  W.C. McBride Inc.#1 Gov¹- Croft Ranch Pure Oil Co./Fuller Reservoir #1-26  W.C. McBride Inc.#1 Gov¹- Croft Ranch Pure Oil Co./Waltman Unit #1 California Oil Co./Bolo Oil Maltman Unit #3	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 87W 36N 87W 36N 89W 36N 90W 36N 90	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 11 21 26 28 31 6 14 15 24 9 11 30 30 30 35 5 6 13 15 17 30 10 14 24 25 26 33 29 31 3 9 18 26 32 21 17 18 22 24 27 29 2 2 3 31 11 22 24 27 29 2 2 3 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 33 32 31 31 32 33 32 31 31 32 33 32 31 31 32 33 32 31 31 32 33 32 31 31 32 33 32 31 31 32 33 32 31 31 32 33 32 31 31 32 33 33 32 31 31 32 33 33 32 31 31 31 32 33 33 32 31 31 31 32 33 33 32 31 31 31 32 33 33 32 31 31 31 32 33 33 32 37 31 31 31	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         608           6091         608           6006         598           6099         598           6093         608           5961         594           6105         569           5720         569           5720         569           5720         569           5720         569           5720         569           5618         560           5678         565           5640         548           5496         548           5403         539           5447         543           5493         548           5098         5032           5032         502           5370         535 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3430 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3990 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5335 5445 5310 5607 4988 5682 53335  5445 5310 5607 4988 5682 53335 5445 5310 5607 4988 5682 53335 5445 5310 5607 4988 5682 53335 5445 5310 5607 5607 5607 5607 5607 5607 5607 560</td> <td>#3185 3185 3185 3185 1858 3050  #010 4015 4026 4815 4448 3920 4062 3658 3503 7615 7405 *5150 \$5908 \$505 *6080 \$5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 #4104 #4081 3945  #*3638  6910 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6654</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 863 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611</td> <td></td> <td>10039</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8015 7670 7471 10614</td> <td>9310 11050</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3430 3442 2785 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3990 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5335 5445 5310 5607 4988 5682 53335  5445 5310 5607 4988 5682 53335 5445 5310 5607 4988 5682 53335 5445 5310 5607 4988 5682 53335 5445 5310 5607 5607 5607 5607 5607 5607 5607 560	#3185 3185 3185 3185 1858 3050  #010 4015 4026 4815 4448 3920 4062 3658 3503 7615 7405 *5150 \$5908 \$505 *6080 \$5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 #4104 #4081 3945  #*3638  6910 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6948 6890 7030 6654	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 863 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611		10039	10430	7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8015 7670 7471 10614	9310 11050	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Waltman Unit #8 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/H4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprisses/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte Unit 26-5 Continental Oil Co./#3 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./squaw Butte Unit 26-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Bay Tide Federal Amerada Hess Cop./Federal 430-23 Northwest Exploration Co./#1 Tide Federal Amerada Hess Cop./Federal 430-23 Northwest Exploration Co./#1 Squaw Butte J.M. Huber Cop./#6-1 Pavison J.M. Huber Cop./#6-1 Pavison J.M. Huber Cop./#6-1 Pavison Union Oil Co./Federal 1-C-13 Humble Oil Co./Sand Hills #3 Humble Oil Co./Sand Hills #3 Humble Oil Co./Canner Homestead Unit # F33-14-6 Pan American Petroleum Corp./Fuller Reservoir #22-25 Superior Oil Co./Federal 14-30-1 Robil Oil Co./Canner Homestead Unit # F33-14-6 Pan American Petroleum Corp./Fuller Reservoir #1-26 W.C. McBride Inc./#1 Gov*- Croft Ranch Pure Oil Co./Waltman Unit #1 California Oil Co./Pauler Homestead Unit #1-26A Humble Oil and Refining Co./Frenchie	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 87W 36N 87W 36N 88W 36N 89W 36N 90W 36N 91W 36N 91W 36N 91W 36N 91W 36N 92W 36N 93W 36N 94W 37N 89W 37N 89W 37N 89W 37N 89W 37N 99W 37N 99	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 1 1 21 26 28 31 6 14 21 26 28 31 15 17 30 30 30 35 5 6 13 15 17 30 10 14 24 25 26 33 29 31 17 18 22 28 33 17 18 22 28 33 17 18 22 24 27 29 2 2 3 3 16 22 24 27 29 2 2 3 3 17 18 22 24 27 29 2 3 3 1 10 11 12 22 24 27 29 2 3 3 3 29 31 30 30 30 30 30 30 30 30 30 30 30 30 30	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6140         613           6231         622           6198         618           6091         608           6006         598           6093         508           5999         598           6093         508           5728         5728           5810         580           5728         5720           569         578           5540         558           5540         558           5540         548           5496         548           5493         548           5032         502           5370         535           5311         509           5378         536           5032         502           5370         535           5371         537 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3432 2785 2875 2853 2405 6310 6525 4193 5567  *4766 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3990 4398 *3316  5400 4388 4778 5662 5323 5335 5445 5310 5607 4988 5061 4853 5838 5428 4838 4640 4704 5090 6325 7415 56270 4775 5295 6306</td> <td>#3185 3185 3185 1858 3050  #010 4015 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7147 #4104 4140 #4081 3945  #*3638 6910 7240 7240 7240 7240 7240 7240 7240 724</td> <td>#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349 *8449 7757 7070 7427 #7305 #8820  7200 #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611</td> <td></td> <td>10039</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8015 7670 7471 10614</td> <td>9310 11050</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3432 2785 2875 2853 2405 6310 6525 4193 5567  *4766 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3990 4398 *3316  5400 4388 4778 5662 5323 5335 5445 5310 5607 4988 5061 4853 5838 5428 4838 4640 4704 5090 6325 7415 56270 4775 5295 6306	#3185 3185 3185 1858 3050  #010 4015 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5246 4951 5898 5307 7147 #4104 4140 #4081 3945  #*3638 6910 7240 7240 7240 7240 7240 7240 7240 724	#5675 2894 4920 6047 *6192 5580 *6520 9656 *8284 8295 8349 *8449 7757 7070 7427 #7305 #8820  7200 #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611		10039	10430	7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8015 7670 7471 10614	9310 11050	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Maltman Unit #8 California Oil Co./Maltman Unit #2 Chevront/Waltman Unit #3 Amax Petroleum Corp./#21-1 Amax Henline Chevront/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./\$2 Cooper Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 23-3 Philips Petroleum Co./Squaw Butte #7 Continental Oil Co./#1-2 Continental Oil Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 28-5 Continental Oil Co./Squaw Butte Unit 28-5 Continental Oil Co./Squaw Butte Unit 28-5 Continental Oil Co./Squaw Butte Unit 28-1 Philips Petroleum Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal O60 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-25 Northwest Decention Co./#3 Tide Federal Amerada Hess Corp./Federal #30-25 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-25 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-25 Northwest Exp	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 93W 35N 94W 36N 86W 36N 86W 36N 87W 36N 90W 36N 91W 36N 91W 36N 91W 36N 91W 36N 91W 36N 91W 36N 92W 36N 93W 36N 94W 36N 94W 36N 94W 37N 86W 37N 89W 37N 99W 37N 91W	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 11 421 26 28 31 6 14 15 24 9 11 30 30 35 5 6 13 15 17 30 10 14 24 25 26 33 39 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 33 9 18 20 21 32 22 24 27 29 2 2 3 3 16 32 33 32 7 7 8 8 1 2 2 33 33 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 3 3 3 2 7 7 8 8 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6006         598           6993         598           6993         608           5994         598           5728         5728           5810         580           5726         571           5729         578           5540         552           5599         578           5618         560           5798         5720           5698         568           5640         552           5799         578           5540         582           5403         539           5403         539           5447         543           5493         548 </td <td>71</td> <td>4760 3911 4661  #2662 2640 1590 2668  3000 2830 3430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5323 5335 5445 5510 5607 4988 5061 4863 5001 4863 5400 4388 4778 5662 5323 5335 5445 5510 5607 4988 5061 5483 5488 4778 5662 55295 6306 5619 3683 *4898 3560 3710 3310 3310 3310 3310 3310 3310 331</td> <td>#3185 3185 3185 3185 1858 3050  4010 4055 *4226 4815 4428 4815 4448 3920 4062 3658 3503 7615  7405 *5150 *5908 5505 *6080 5394 4764  4400  6032 5095 #5086  6150 65835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 #4104 #4081 3945  #*3638  6910 7240 7080 7480 7480 6849 6820 6408 77540 6654 6651 6654 6654 6651 7505 7608 6654 6555 7608 6654 65515 5768 6654</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611  9997 10940 *14055 10340 *8730 9809 98097 *9590</td> <td></td> <td>10039 10120 14245 12188</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8105 7670 7471 10614  15553</td> <td>9310 11050</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2662 2640 1590 2668  3000 2830 3430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5323 5335 5445 5510 5607 4988 5061 4863 5001 4863 5400 4388 4778 5662 5323 5335 5445 5510 5607 4988 5061 5483 5488 4778 5662 55295 6306 5619 3683 *4898 3560 3710 3310 3310 3310 3310 3310 3310 331	#3185 3185 3185 3185 1858 3050  4010 4055 *4226 4815 4428 4815 4448 3920 4062 3658 3503 7615  7405 *5150 *5908 5505 *6080 5394 4764  4400  6032 5095 #5086  6150 65835 5307 5192 4448 5246 4951 5898 5307 7353 4317 5087 7147 #4104 #4081 3945  #*3638  6910 7240 7080 7480 7480 6849 6820 6408 77540 6654 6651 6654 6654 6651 7505 7608 6654 6555 7608 6654 65515 5768 6654	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611  9997 10940 *14055 10340 *8730 9809 98097 *9590		10039 10120 14245 12188	10430	7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8105 7670 7471 10614  15553	9310 11050	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Maltman Unit #8 Chevron/Waltman Unit #8 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Monsanto Co./#1-3 Neal Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Continental Oil Co./#2 Logouw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte Unit 23-3 Phillips Petroleum Co./Squaw Butte #7 Continental Oil Co./#2 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./#2 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 606 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills #3 Humble Oil Co./Federal Horison J.M. Huber Corp./#6-1 Pavison Union Oil Co./Federal Horison J.M. Huber Corp./#6-1 Pavison Union Oil Co./Federal Horison Union Oil Co./Federal Horison J.M. Huber Corp./#6-1 Pavison Union Oil Co./Federal Horison J.M. Huber Corp./#6-1 Pavison Union Oil Co./Federal Horison J.M. Huber Corp./#6-1 Pavison J.M. Huber Corp./#6-1 Pavison Union Oil Co./Federal Horison J.M. Huber Corp./#6-1 Pavison Union Oil Co./Federal Horison J.M. Huber Corp./#6-1 Pavison J.M. Huber Corp./	35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 87W 36N 87W 36N 89W 36N 90W 36N 90W 36N 90W 36N 91W 36N 92W 36N 93W 36N 94W 36N 99W 37N 89W 37N 89W 37N 89W 37N 89W 37N 99W 37N 99	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 11 44 21 26 28 31 6 14 15 24 9 11 30 30 30 35 5 6 13 15 17 30 10 14 24 25 26 33 15 17 17 18 22 24 27 29 2 11 10 11 22 24 27 29 2 24 27 29 2 24 33 16 23 31 31 32 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 32 31 31 31 32 31 31 32 31 31 31 32 31 31 31 31 31 32 31 31 31 31 32 31 31 31 31 31 31 31 31 31 31 31 31 31	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           6008         600           6278         626           6199         618           6005         598           5999         598           5726         571           5728         5810           5800         569           5799         578           5501         589           5720         569           5799         578           5540         552           5618         565           5689         568           5648         565           5689         568           5640         548           5403         539           5370         535 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4766 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5523 5335 5445 5607 4988 5607 4988 5607 4988 5607 5607 4988 5625 5335 5445 5610 5607 5607 5607 5607 5607 5607 5607 560</td> <td>4912 4403 5090  #3185 3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 *6080 5594 4764  4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246  4951 5898 52067 7353 4317 7353 4317 7353 4317 7353 4317 7417 #4104 44081 3945  #*3638  6910 7240 7080 7480 7480 7680 671 67240 7080 7480 7680 76944 7850 7540 6523 6671 6180 6380 7102 7875 7030 6654 6654 6651 6501 75515 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 7599</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611  9997 10940 *14055 10340 *8730 98597</td> <td></td> <td>10039 10120 14245 12188</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 81015 7670 7471 10614  15553</td> <td>9310 11050</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196 16808</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4766 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5523 5335 5445 5607 4988 5607 4988 5607 4988 5607 5607 4988 5625 5335 5445 5610 5607 5607 5607 5607 5607 5607 5607 560	4912 4403 5090  #3185 3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 *6080 5594 4764  4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246  4951 5898 52067 7353 4317 7353 4317 7353 4317 7353 4317 7417 #4104 44081 3945  #*3638  6910 7240 7080 7480 7480 7680 671 67240 7080 7480 7680 76944 7850 7540 6523 6671 6180 6380 7102 7875 7030 6654 6654 6651 6501 75515 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 75595 5853 5802 6654 6501 7599	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611  9997 10940 *14055 10340 *8730 98597		10039 10120 14245 12188	10430	7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 81015 7670 7471 10614  15553	9310 11050	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196 16808	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc./#11-29 Government Croft Ranch California Oil Co./Maltman Unit #8 Chevron/Waltman Unit #8 Chevron/Waltman Unit #9 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Contineratiol Oil Co./#2 Gooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Contineratiol Oil Co./Squaw Butte Unit 23-3 Contineratiol Oil Co./#3 Unit Walter #7 Contineratiol Oil Co./#3 Unit Co./#3 Unit Reservoir Kanasa-Nebraska Natural Gas Co./Squaw Butte #10 Contineratiol Oil Co./Squaw Butte Unit 26-5 Contineratiol Oil Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 606 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Squaw Butte J.M. Huber Corp.#6-1 Davison Union Oil Co./Federal 1-C-13 Humble Oil Co./Federal Horison J.M. Huber Corp.#6-1 Davison Union Oil Co./Federal World Wills #3 Humble Oil Co./Federal Horison J.M. Huber Corp.#6-1 Davison Union Oil Co./Federal World Wills #3 Humble Oil Co./Federal World Wills #4 Humble Oil Co./Federal World Wills #4 Humble Oil	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 93W 35N 94W 36N 86W 36N 86W 36N 87W 36N 90W 36N 91W 36N 91W 36N 91W 36N 91W 36N 92W 36N 93W 36N 94W 37N 86W 37N 89W 37N 91W	23 26 18 20 31 27 29 18 19 1 11 21 24 25 33 34 3 9 24 23 34 1 14 21 26 28 31 6 15 17 30 30 30 5 5 6 6 13 30 30 35 5 6 6 13 30 30 35 5 5 17 30 10 14 24 25 26 33 32 29 31 3 9 9 18 26 32 21 17 11 12 2 24 27 29 2 2 3 16 23 31 17 21 1 10 11 22 24 27 29 2 2 3 3 3 29 31 3 3 9 9 18 26 27 27 29 2 2 3 3 3 29 31 3 3 27 31 18 29 2 2 3 36 21 10 11 22 24 27 29 2 2 3 36 21 10 11 22 24 27 29 2 2 3 3 3 27 31 18 29 2 2 3 3 3 27 3 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 33 32 37 31 31 32 32 33 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 37 31 31 32 32 33 32 33 32 37 32 33 32 33 33 32 37 32 33 32 33 33 33 32 37 33 33 34 33 34 34 34 34 34 34 34 34 34	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         618           6091         608           607         618           6199         618           6006         598           5999         598           5726         571           5728         5810           5810         580           5726         571           5720         569           5799         578           5720         569           5799         578           5510         589           5618         565           5689         568           5681         568           5689         568           5689         568           5648         548           5496         548 <td>71</td> <td>4760 3911 4661  #2662 2640 1590 2668  3000 2830 3430 3630 3442 2785 2875 2853 2805 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5323 5355 5445 5510 5607 4988 5061 4853 5848 4838 4640 4704 5090 6325 7415 5475 66270 4775 5295 6306 5619 3683 *4898 35601 3797 4775 5295 6306 5619 3683 *4898 35601 3797 4775 5295 6306</td> <td>#3185 3185 3185 3185 3185 3185 3185 3185</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10171 9997 104055 10340 *730 9800 9597 *9590 9682</td> <td></td> <td>10039  10120  14245  12188  15600 13815</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8015 7670 7471 10614  15553</td> <td>9310 11050</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196 16808</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2662 2640 1590 2668  3000 2830 3430 3630 3442 2785 2875 2853 2805 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5323 5355 5445 5510 5607 4988 5061 4853 5848 4838 4640 4704 5090 6325 7415 5475 66270 4775 5295 6306 5619 3683 *4898 35601 3797 4775 5295 6306 5619 3683 *4898 35601 3797 4775 5295 6306	#3185 3185 3185 3185 3185 3185 3185 3185	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10171 9997 104055 10340 *730 9800 9597 *9590 9682		10039  10120  14245  12188  15600 13815	10430	7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 8015 7670 7471 10614  15553	9310 11050	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196 16808	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc./#11-29 Government Croft Ranch Californa Oil Co./Maltman Unit #3 Chevron/Waltman Unit #3 Chevron/Waltman Unit #3 Amax Petroleum Corp./#21-1 Amax Henline Chevron/#4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #7 Continental Oil Co./#6 Unit Kansas-Nebraska Natural Gas Co./Squaw Butte #10 Continental Oil Co./Squaw Butte Unit 28-5 Continental Oil Co./Squaw Butte Unit 28-1 Phillips Petroleum Co./Squaw Butte #18 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 18-1 Phillips Petroleum Co./Squaw Butte Unit 18-1 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Linexco Oil Co./Federal Hansgan #1-15 Internorth, Inc./Federal 060 #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./#5-1 Federal Morrison Union Oil Co./Federal t.C-13 Humble Oil Co./Garver Hesservoir #12-30 Echo Oil Co./Federal To13 Humble Corp./#6-1 Co./Federal #12-30 Echo Oil Co./Federal To13 Humble Oil Co./Federal Feservoir #12-8 W.C. McGride Inc./#1 Pan American Petroleum Corp./Unite Reservoir #14-8 Pan American Petroleum Corp./Holleuf Reservoir #12-8 Humble Oil and Refining	35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 87W 36N 87W 36N 89W 36N 90W 36N 90W 36N 90W 36N 92W 36N 93W 36N 94W 36N 99W 37N 99	23 26 18 20 31 27 29 18 19 1 11 21 24 25 33 34 3 9 24 23 34 1 14 21 26 28 31 6 14 15 24 9 11 30 30 30 5 5 6 13 15 17 30 30 30 5 5 6 13 30 30 30 5 5 6 13 15 17 30 30 30 5 5 6 13 15 17 30 30 30 5 5 6 13 15 17 30 10 14 24 25 26 33 32 29 31 3 3 9 18 26 32 21 17 18 22 28 33 17 21 1 10 11 22 24 27 29 2 2 3 36 20 30 30 30 30 30 30 30 30 30 30 30 30 30	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         608           6091         608           6006         598           6093         608           5961         594           6105         569           5720         569           5720         569           5720         569           5720         569           5720         569           5678         565           5678         565           5679         580           5501         548           5496         548           5403         539           5403         539           5403         539           5403         539           5447         543           5493         548 <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2853 2405 6310 6525 4193 5567  *4766 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5523 5335 5445 5310 5607 4988 5625 5623 5335 5445 5310 5607 4988 5625 5623 5335 5445 5310 5607 5607 5607 5607 5607 5607 5607 560</td> <td>4912 4403 5090  #3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 \$505 *6080 5394 4764  4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 57147 #4104 #4081 3945  #*3638  6910 7030 6949 6890 7030 6949 6890 7030 6949 6890 7030 66498 66523 6671 6180 6380 7102 7875 7030 6849 6890 7030 6849 6890 7030 6948 6820 6408 7178 66523 6671 6180 6380 7102 7875 7030 6850 5595 5595 5595 5595 5595 55853 5820 6051 75595 55853 5820 60525 5859 6650 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10171 9997 104055 10340 *730 9800 9597 *9590 9682</td> <td></td> <td>10039 10120 14245 12188 15600 13815 13260 13448</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 81015 7670 7471 10614  15553  13570 15425</td> <td>9310 11050</td> <td>9421</td> <td></td> <td></td> <td>9915</td> <td>4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196 16808 14742 16532 20770 16582</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3630 3442 2785 2853 2405 6310 6525 4193 5567  *4766 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5523 5335 5445 5310 5607 4988 5625 5623 5335 5445 5310 5607 4988 5625 5623 5335 5445 5310 5607 5607 5607 5607 5607 5607 5607 560	4912 4403 5090  #3185 3185 1858 3050  4010 4055 *4226 4815 4448 3920 4062 3658 3503 7615 7405 *5150 \$505 *6080 5394 4764  4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246 4951 5898 5307 7353 4317 57147 #4104 #4081 3945  #*3638  6910 7030 6949 6890 7030 6949 6890 7030 6949 6890 7030 66498 66523 6671 6180 6380 7102 7875 7030 6849 6890 7030 6849 6890 7030 6948 6820 6408 7178 66523 6671 6180 6380 7102 7875 7030 6850 5595 5595 5595 5595 5595 55853 5820 6051 75595 55853 5820 60525 5859 6650 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505 66505	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8863 9787 9792 8947 8446 8185 10480 10191 10171 9997 104055 10340 *730 9800 9597 *9590 9682		10039 10120 14245 12188 15600 13815 13260 13448	10430	7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 81015 7670 7471 10614  15553  13570 15425	9310 11050	9421			9915	4950 6885 4208 6260 10512 12233 8919 8978 8760 8515 8196 16808 14742 16532 20770 16582	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023
W.C. Mc Bride Inc.#11-29 Government Croft Ranch California (Ol Co./Mattman Unit #8 Chevron/Waltman Unit #8 Chevron/Waltman Unit #9 Amax Pertoleum Corp.#21-1 Amax Henline Chevron/Waltman Unit #9 Amax Pertoleum Corp.#21-1 Amax Henline Chevron/W4 Waltman Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises/ #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Supus Walte W7 Continental Oil Co./Supus Walte W12-3 Phillips Petroleum Co./Supusw Butle W12-3 Phillips Petroleum Co./Supusw Butle W12-3 Northwest Exploration Co./Supusw Butle W13-3 Continental Oil Co./Supusw Butle W11-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal 606 #1-24 Northwest Exploration Co./#2 Tide Federal Humble Oil Co./Sand Hills Unit #2 Inexploration Co./#2 Tide Federal Humble Oil Co./Sand Hills Unit #2 Inexploration Co./#2 Tide Federal Humble Oil Co./Sand Hills Unit #2 Husley Oil Co./Sand Hills W11-4 Humble Oil and Refining Co./Fenchie Draw #3 Humble Oil and Refining Co./Fenchie Draw #3 Humble Oil and Refining Co./W11-4 Humble Oil and Refining Co.	35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W 36N 89W 36N 90W 36N 90W 36N 90W 36N 90W 36N 91W 36N 91W 36N 92W 36N 93W 36N 94W 36N 99W 37N 99	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 1 1 4 21 26 28 31 6 14 15 24 9 11 30 30 35 5 6 13 15 17 30 10 14 25 26 33 39 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 3 9 18 26 32 31 31 3 9 18 26 32 31 31 32 31 31 31 31 31 31 31 31 31 31 31 31 31	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6131         629           6231         622           6198         608           6006         598           6093         608           59699         598           6093         608           5726         571           5810         580           5728         5720           580         5720           569         5799           5740         552           5618         565           5501         548           5496         548           5496         548           5497         589           5689         568           5501         548           5496         548           5496         548           5497         543           5496         548 </td <td>71</td> <td>4760 3911 4661  #2682 2640 1590 2668  3000 2830 3430 3430 3430 3442 2785 2853 2405 6310 6525 4193 5567  *4766 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5335 5445 5310 5607 4988 5483 5488 4640 4704 5090  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W.C. Mc Bride Inc.#11-29 Government Croft Ranch California (Ol Co./Maltman Unit #8 Chevron/Waltman Unit #8 Amax Petroleum Corp.#21-1 Amax Henline Chevron/Waltwan Unit #9 Amax Petroleum Corp.#21-1 Amax Henline Chevron/Waltwan Unit #8 Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal California Oil Co./#2 Cooper Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enferprises/ #9-12 Humbio Oil and Refining Co./Government Witt #1 Continental Oil Co./Squaw Butte Unit 29-3 Philips Petroleum Co./Squaw Butte Unit 29-3 Philips Petroleum Co./Squaw Butte Unit 29-3 Philips Petroleum Co./Squaw Butte Unit 29-5 Continental Oil Co./Squaw Butte Unit 28-5 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butte #8 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butte Unit 14-4 Inexco Oil Co./Federal Hanagan #1-15 Internorth, Inc./Federal Ose #1-24 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#3 Tide Federal Humble Oil Co./Sand Hills Will #2 Northwest Exploration Co./#3 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#1 Squaw Butte J.J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal Ko./#6-10 J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal Ko./#6-10 J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal Mortison J.M. Huber Corp./#6-1 Davison Union Oil Co./Federal Mortison J.M. Huber Corp./#1-16-13 Humble Oil Co./Federal Ko./#6-13 Humble Oil Co./Federal Mortison J.M. Huber Corp./#1-16-13 Humble Oil and Refining Co./Government Featherstone #1 Pan American Petroleum Corp./Puller Reservoir #12-26 Buch Oil Co./Federal To./Government-Corp./#1-1	35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 86W 36N 87W 36N 89W 36N 90W 36N 90W 36N 90W 36N 91W 36N 91W 36N 92W 36N 93W 36N 94W 36N 99W 37N 89W 37N 89W 37N 89W 37N 89W 37N 89W 37N 99W 37N 91W 37N 91	23 26 28 28 29 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 1 1 4 21 26 28 31 6 14 15 24 9 11 30 30 30 35 5 6 13 15 17 7 30 10 14 25 26 33 39 18 26 32 31 3 9 18 26 27 29 21 10 11 22 24 27 29 21 31 10 11 22 24 27 29 21 31 10 11 22 24 27 29 2 2 3 3 16 20 31 31 31 31 31	5838         582           5718         570           5691         568           5446         543           5478         546           5600         558           5432         541           5445         543           6269         625           6140         613           6231         622           6198         618           6091         608           607         627           6278         626           6199         618           6006         598           5999         598           5909         598           5728         5810           580         5728           5720         569           5799         578           5618         565           5678         565           5689         568           5720         569           5799         578           5540         522           5618         565           5689         568           5648         568           55501         548 <td>71   300   301   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   302   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3430 3630 3442 2785 2875 2853 2405 6310 6525 4193 5567  *4706 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940 4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5323 5335 5445 5510 5607 4988 5061 4853 5348 4778 5662 5323 5335 5445 5510 5607 4988 5061 5483 5488 4778 5662 5323 5335 5445 5510 5607 5607 5607 5607 5607 5607 5607 560	#3185 3185 3185 1858 3050  #010 4055 *4256 *4256 *4216 4448 3920 4062 3658 3503 7615 7405 *5150 5908 5505 *6080 5394 4764 4400  6032 5095 #5086 6150 5835 5307 5192 4448 5346 4951 5898 5307 7353 4317 5087 7147 #4104 #4081 3945  #*3638 6910 7240 7240 7280 7430 68490 7030 68498 68408 7178 69449 68490 7030 68498 6850 7540 6523 6671 6180 6380 77540 6523 6671 6180 6380 77568 6654  6501 7555 *5915 5850 5768 6654  6501 7555 *5915 5850 5768 6654  **3636 6654  **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 **3638 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W.C. Mc Bride Inc.#11-29 Government Croft Ranch California (Oil Co./Mathman Unit #8 Chevron/Waltman Unit #8 Chevron/Waltman Unit #9 Chevron/Waltman Unit #9 Amax Petroleum Corp.#21-1 Amax Henline Chevron/Waltman Unit #9 Amax Petroleum Corp.#21-1 Amax Henline Chevron/Waltman Unit #9 Amax Petroleum Corp.#21-1 Amax Henline Chevron/Waltman Unit #9 Lario Oil and Gas Co./Waltman USA #1 Integrity Oil/#1-33 Federal Amax Petroleum Corp. Waltman USA #1 Integrity Oil/#1-38 Federal Monsanto Co./#1-3 Nall Reservoir Monsanto Co./#1-3 Nall Reservoir Bass Enterprises #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./Suquaw Butte #7 Continental Oil Co./#1-22 Continental Oil Co./#1-22 Continental Oil Co./#1-22 Continental Oil Co./#1-22 Continental Oil Co./#1-25 Continental Oil Co./#1-25 Continental Oil Co./#1-25 Continental Oil Co./#1-25 Continental Oil Co./#1-26 Continental Oil Co./#2-25 Continental Oil Co./#2	35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 86W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W 36N 89W 36N 90W 36N 90W 36N 90W 36N 90W 36N 92W 36N 93W 36N 94W 36N 99W 36N 99	23 26 18 20 31 27 29 18 19 1 1 11 21 24 25 33 34 3 9 24 23 34 1 1 21 26 28 31 6 14 15 24 9 11 30 30 30 35 5 6 13 15 17 30 30 30 30 35 5 6 13 15 17 18 24 24 27 29 2 2 3 31 31 32 31 11 12 21 11 12 22 24 27 29 2 2 3 3 3 3 27 31 8 29 2 1 10 11 22 24 27 29 2 2 3 3 3 3 27 31 8 29 2 1 10 11 22 24 27 29 2 2 3 3 3 3 27 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5370         535           5311         509           5370         535 <td>71</td> <td>#2682 2640 1590 2668  3000 2830 3430 3430 3430 3442 2785 2853 2405 6310 6525 4193 5567  4706 4546 4180  4200  4398 3804 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3900 3980  *3316  5408 4778 4418 4288 3103 4840 4778 5615 5617 4988 5625 5633 5335  5445 5310 5607 4988 5625 5625 5626 5619 3683 5838 5428  4838 4640 47704 5900  6325 7415 5475 6270 4775 5295 6306 5619 3683 5838 5428 4838 4640 4704 5900  6325 7415 5475 6270 4775 5295 6306 5619 3683 5889 5428 4838 5428 4838 5428 4838 5428 4838 54460 4704 5900 6325 7415 5475 6270 4775 5295 6306 5619 3683 5883 5428 4888 4888 4480 4780 5780 67126 67126 67126 67127 6727 6727 6727</td> <td>#3185 3185 1858 3050  #3185 1858 3050  #010 4055 *426 4815 4448 3920 4062 3658 35615  7405 *5150 \$5150 *6080 5394 4764  4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246  4951 5898 5307 7353 4317 5192 4448 3945  #*3638  6910 7030 6948 6849 6890  7030 6948 6849 6890  7030 6948 6849 6890  7030 6948 6849 6890  7030 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6524 5595 5595 5595 5595 5595 5595 5595 5</td> <td>#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8663 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611  9997 10940 *14055 10340 *8730 99597 *9590 9682 9898</td> <td></td> <td>10039  10120  14245  12188  15600 13815  13260 13448  13690</td> <td>10430</td> <td>7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 81015 7670 7471 10614  15553  13570 14495 14545 14905 16347 16394 16265 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 17369 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67126 67126 67127 6727 6727 6727	#3185 3185 1858 3050  #3185 1858 3050  #010 4055 *426 4815 4448 3920 4062 3658 35615  7405 *5150 \$5150 *6080 5394 4764  4400  6032 5095 #5086  6150 5835 5307 5192 4448 5246  4951 5898 5307 7353 4317 5192 4448 3945  #*3638  6910 7030 6948 6849 6890  7030 6948 6849 6890  7030 6948 6849 6890  7030 6948 6849 6890  7030 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6523 6671 6180 6524 5595 5595 5595 5595 5595 5595 5595 5	#5675  2894 4920  6047  *6192  5580 *6520 9656  *8284 8295 8349 *8449 7757 7070 7427  #7305  #8820  7200  #7100 6995 #7004 6760 5293  10530 8220 9082 8663 9787 9792 8947 8446 8185 10480 10191 10174 9970 8611  9997 10940 *14055 10340 *8730 99597 *9590 9682 9898		10039  10120  14245  12188  15600 13815  13260 13448  13690	10430	7165 6623 6142 3955 6132 3264 5402  10859  9310  11050  8215 8153 81015 7670 7471 10614  15553  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Me Bride Inc.#11-29 Government Croft Ranch California (Ol Co./Mathman Unit #8 Chevron/Waltman Unit #8 Amax Petroleum Corp.#21-1 Amax Henline Chevron/Waltman Unit #8 Amax Petroleum Corp.#21-1 Amax Henline Chevron/Waltman Unit #8 Lario Oil and Gas Co./Waltman USA #1 Lario Oil and Gas Co./Waltman USA #1 Lario Oil and Gas Co./Waltman USA #1 Continental Oil Co./#1-3 Neal Reservoir Monsanto Co./#1-3 Neal Reservoir Bass Enterprises #9-12 Humble Oil and Refining Co./Government Witt #1 Continental Oil Co./#1-20 Layau Butle #7 Continental Oil Co./#1-20 Layau Butle #10 Continental Oil Co./#1-20 Layau Butle #10 Continental Oil Co./#2-20 Layau Butle #10 Continental Oil Co./#2-20 Layau Butle #8 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butle Unit 126-5 Continental Oil Co./Squaw Butle Unit 126-1 Phillips Petroleum Co./Squaw Butle #8 Northern Gas Co./#1 Federal Continental Oil Co./Squaw Butle #15 Internorth, Inc./Federal 600 #1-24 Northwest Exploration Co./#2 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#2 Tide Federal Humble Oil Co./Sand Hills Unit #2 Northwest Exploration Co./#1 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#1 Tide Federal Amerada Hess Corp./Federal #30-23 Northwest Exploration Co./#1 Tide Federal Amerada Hess Corp./Federal #30-24 Northwest Exploration Co./#1 Tide Federal Amerada Horth Corp./#1-1 Federal Morrison Union Oil Co./Federal 1-C-13 Humble Oil Co./Sander Hills Unit #2 Humble Oil Co./Federal 1-C-13 Humble Oil Co./Sander Hills Unit #2 Humble Oil Co./Federal 1-C-13 Humble Oil Co./Sander Hills Unit #2 Humble Oil and Refining Co./Frenchie Draw #1 Humble Oil and Refining Co./Fre	35N 91W 35N 91W 35N 92W 35N 92W 35N 92W 35N 92W 35N 92W 36N 86W 36N 86W 36N 87W 36N 87W 36N 87W 36N 87W 36N 87W 36N 89W 36N 99W 36N 90W 36N 90W 36N 90W 36N 92W 36N 93W 36N 94W 36N 99W 37N 99	23 26 28 28 29 18 29 18 19 1 11 21 24 25 33 34 3 9 24 23 34 11 21 26 28 31 6 14 15 24 9 11 30 30 30 35 5 6 6 13 15 17 30 10 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16582 20770 16582 17775 1867 15905 16226 16302 16239 17751 18784 18784 18784 18784 18748 177418</td> <td>7508 4729 6741 9275 9330 9106</td> <td>5310 7393 7313 9890 10023</td>	71	#2682 2640 1590 2668  3000 2830 3430 3430 3432 2785 2875 2853 2405 6310 6525 4193 5567  *4766 4546 4180  4200  4398 3830 3844  4655 4778 4418 4288 3103 4940  4294 5413 4816 6768 3900 4835 6418 3960 3980  *3316  5400 4388 4778 5662 5523 5335 5445 5617 4988 4838 4778 5662 5625 4193 5607 4988 4778 5607 4988 4778 5607 4988 4778 5607 4988 5618 5607 4988 562 5623 5335 5445 5310 5607 5607 5607 5607 5607 5607 5607 560	#3185 3185 1858 3050  #3185 1858 3050  #010 4055 *4226 4815 4448 3920 4062 3658 35015  7405 *5150 *6080 5505 *6080 6032 5095 #5086  6150 6535 5307 5192 4448 5246  #4951 5898 5505 *6080 6150 6830 7102 7875 7353 4317 7353 4317 7353 4317 7353 4317 7353 4317 7353 4317 7353 6871 7147 #4104 #4081 3945  #*3638  6910 7030 6948 6820 6408 71080 7630 7640 7680 6523 6671 66180 66380 7102 7875 7030 6849 6890 7030 6849 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16050	9310 11050	9421			9915	4950 6885 4208 6260 10512 10512 12233 8919 8978 8760 8515 8196 16808 14742 16532 20770 16582 20770 16582 17775 1867 15905 16226 16302 16239 17751 18784 18784 18784 18784 18748 177418	7508 4729 6741 9275 9330 9106	5310 7393 7313 9890 10023

D. G. Hogle and R. W. Jones Figure 15. Cross section J-J'