

A SURVEY OF EIGHT PROPOSED
CONTINENTAL OIL COMPANY OIL WELL LOCATIONS
IN LEA COUNTY, NEW MEXICO

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Performed under Bureau of Land Management
Antiquities Permit Number 78-NM-102

A REPORT PREPARED FOR THE CONTINENTAL OIL COMPANY, under the direction of Patrick H. Beckett of the Cultural Resources Management Division, Department of Sociology and Anthropology, New Mexico State University, Las Cruces, New Mexico.

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ABSTRACT

An intensive archaeological survey of eight oil well drilling locations and attendant vehicle and powerline access routes was conducted in Lea County, New Mexico for the Continental Oil Company. All survey locations are on private lands under lease to Continental Oil Company and with Federal mineral rights administered by the Bureau of Land Management, Roswell District. No significant archaeological resources were observed and it is recommended that archaeological clearance to the surveyed locations be given.

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INTRODUCTION


On January 4 and 5, 1979, Mark Bond and Floyd Geery of the Cultural Resources Management Division, Department of Sociology and Anthropology, New Mexico State University, conducted an intensive archaeological survey of eight proposed oil well locations and accompanying vehicle and powerline access routes in Lea County, New Mexico. In addition, powerline access routes for two other proposed drilling locations were surveyed. These surveys were performed at the request of Mr. Phillip Bodman of the Continental Oil Company. Mr. Allen Fredrickson, of the Continental Oil Company, accompanied the archaeologists to the general field areas and pointed out the access routes. The work was accomplished under authority of Bureau of Land Management Antiquities Permit Number 78-NM-102.

METHODOLOGY AND PROCEDURE

All of the proposed drill locations and access routes are located within surficial eolian deposits or sand dunes. The dunes are stabilized by vegetation although deflated areas occur frequently. Elevation changes are not great and are localized representing the crests of occasional tall dunes and the bottoms of basins within the dunes deflated by the wind. Previous archaeological surveys in nearby similar topographic situations have indicated that prehistoric cultural manifestations, when present, will be most readily observable within the deflated basins in the dunes (cf. Beckett 1975; Beckett 1976).

Parallel transects were walked over each drill location and an effort was made to observe the bottoms and sides of all deflated areas whether



FIGURE 1: PROJECT LOCATION 

they occurred within a transect or not. The archaeologists normally walked from thirty to fifty feet apart depending on surface topography and vegetation. Each drill location required clearance of a square 200 feet on each side. After observation of previously drilled locations in the area, we surveyed squares with 350 to 400 feet sides in order to cover any earth moving activities that might take place outside the originally requested drill location, or sites that might have indirect impact outside of the drill pad areas.

The access routes for vehicles and powerlines required a right-of-way of 50 and 30 feet respectively. Powerline routes are occasionally alongside of roads and the right-of-way for both was surveyed simultaneously when this was the case. Two possible well locations were, however, not surveyed for the drilling platforms though powerline access for these locations was surveyed. All drilling locations and access routes were staked and flagged for the archaeologists by the Continental Oil Company.

PROPOSED WELL LOCATIONS AND ACCESS ROUTES

All eight of the proposed well locations are located approximately 10 miles south of Hobbs, New Mexico, near State Road 18, the highway between Hobbs and Eunice, New Mexico. All of the locations are within Lea County, New Mexico. The locations are on private lands with Federal mineral rights administered by the Bureau of Land Management. Well location numbers supplied by the Continental Oil Company will be used to designate the locations in both the descriptions and the figures.

WARREN UNIT NUMBER 62

LOCATION: Southeast $\frac{1}{4}$ of the Southeast $\frac{1}{4}$, Section 20, Township 20 South, Range 38 East, Lea County, New Mexico. The well location is 660 feet from the South line and 660 feet from the East line of Section 20 (See Figure 2).

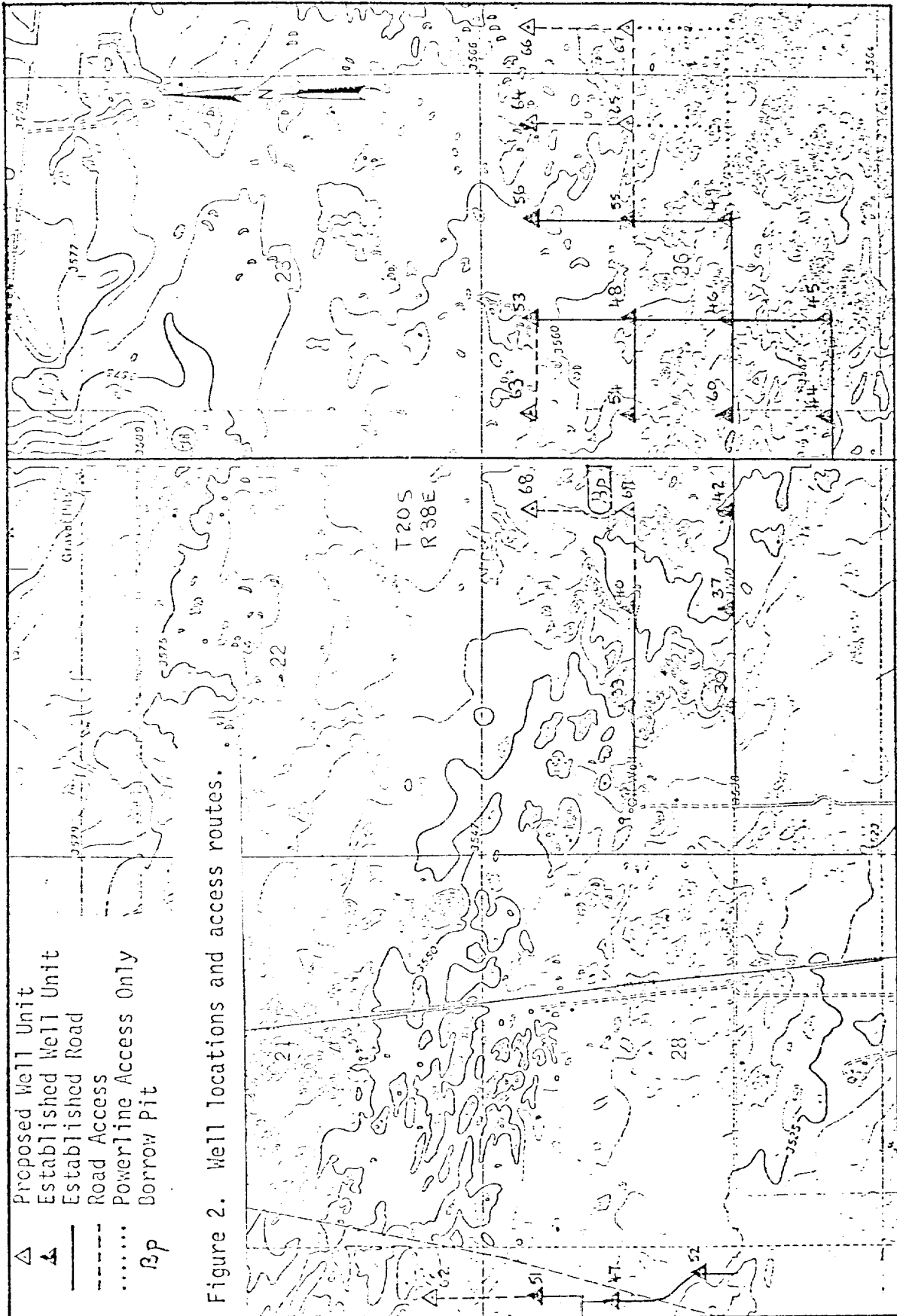
ELEVATION: 3549 feet

OWNERSHIP: Private land under lease to Continental Oil Company. Federal mineral rights are administered by the Bureau of Land Management, Roswell District.

AREA CLEARED: 350' x 350'

ACCESS: Both road and powerline access to Unit 62 is by a 80 by 1320 feet corridor originating at established Well Unit 51 and proceeding north to Unit 62 (See Figure 2).

CULTURAL DEBRIS OBSERVED: Four flakes of a milky-white chert were observed within the area of the well location. Two of the flakes were in a deflated basin in the extreme southeastern corner of the surveyed area and one each of the remaining flakes were in similar situations in the Northeast corner and the Southwest corner. None of the flakes exhibited evidence of cultural modification with macroscopic observation. The flakes were considered isolated occurrences and were not collected.



REMARKS: The access route for both a road and the power-line to Unit 62 originate in the Northwest corner of Unit 51 and proceed north to the Southwest corner of Unit 62.

RECOMMENDATIONS: Recommend that clearance be given.

WARREN UNIT NUMBER 6361

LOCATION: Northwest $\frac{1}{4}$ of the Northwest $\frac{1}{4}$, Section 26, Township 20 South, Range 38 East, Lea County, New Mexico. The well location is 660 feet from the North line and 660 feet from the West line of Section 26 (See Figure 2).

ELEVATION: 3560 feet

OWNERSHIP: Private land under lease to Continental Oil Company. Federal mineral rights are administered by the Bureau of Land Management, Roswell District.

AREA CLEARED: 400' x 400'

ACCESS: Access to Unit ⁶¹63 for both a road and a powerline is a 80' by 1320' corridor which originates at Well Unit 53 and proceeds west to Unit ⁶¹63 (See Figure 2).

CULTURAL DEBRIS OBSERVED: None

REMARKS: Access corridor follows prestaked route.

RECOMMENDATIONS: Recommend that clearance be granted.

WARREN UNIT NUMBER 64

LOCATION: Northeast $\frac{1}{4}$ of the Northeast $\frac{1}{4}$, Section 26,
Township 20 South, Range 38 East, Lea County,
New Mexico. Well location is 660 feet from the
North line and 660 feet from the East line of
Section 26 (See Figure 2).

ELEVATION: 3565 feet

OWNERSHIP: Private land under lease to the Continental
Oil Company. Federal mineral rights are administered
by the Bureau of Land Management, Roswell District.

AREA CLEARED: 400' x 400'

ACCESS: Access to Unit 64 originates at the established
Unit 55 and proceeds 1320 feet east to proposed
Unit 65 where it turns north for 1320 feet to
Unit 64. The right-of-way is 80 feet to
accommodate both a road and a powerline (See
Figure 2).

CULTURAL DEBRIS
OBSERVED: None

REMARKS: Access route follows prestaked route.

RECOMMENDATIONS: Recommend that clearance be granted.

WARREN UNIT NUMBER 65

LOCATION: Southeast $\frac{1}{4}$ of the Northeast $\frac{1}{4}$, Section 26,
Township 20 South, Range 38 East, Lea County,
New Mexico. Unit 65 is 1980 feet from the North
line and 660 feet from the East line of Section 26.

It is 1320 feet south of proposed Unit 64 (See Figure 2).

ELEVATION: 3557 feet

OWNERSHIP: Private land under lease to the Continental Oil Company. Federal mineral rights are administered by the Bureau of Land Management, Roswell District.

AREA CLEARED: 400' x 400'

ACCESS: Vehicle access to Unit 65 is by a 80' by 1320' corridor originating at the established Unit 55 and proceeding east to Unit 65. Powerline access to Unit 65 is by a 30' x 1320' corridor from the location of a possible future well south of proposed Unit 65 (See Figure 2).

CULTURAL DEBRIS OBSERVED: None

REMARKS: None

RECOMMENDATIONS: Recommend that clearance be granted.

WARREN UNIT NUMBER 66

LOCATION: Northwest $\frac{1}{4}$ of the Northwest $\frac{1}{4}$, Section 25, Township 20 South, Range 38 East, Lea County, New Mexico. Unit 66 is 660 feet from the North line and 660 feet from the West line of Section 25 (See Figure 2).

ELEVATION: 3569 feet

OWNERSHIP: Private land under lease to Continental Oil Company. Federal mineral rights are administered by the Bureau of Land Management, Roswell District.

AREA CLEARED: 400' x 400'

ACCESS: Access for both a road and a powerline to Unit 66 is through a 80' x 1320' corridor originating at proposed Unit 67 and proceeding north to Unit 66 (See Figure 2).

CULTURAL DEBRIS OBSERVED: One flake of a milky-white chert similar to that observed at proposed Unit 62 was recorded in a deflated area 85 feet northeast of the center flag of Unit 66. There was no apparent cultural modification of the flake and it was considered an isolated occurrence.

REMARKS: An underground pipeline exists immediately adjacent to the south of the Unit 66 location and proceeds from southwest to the northeast.

RECOMMENDATIONS: Recommend that clearance be granted.

WARREN. UNIT NUMBER 67

LOCATION: Southwest $\frac{1}{4}$ of the Northwest $\frac{1}{4}$, Section 25, Township 20 South, Range 38 East, Lea County, New Mexico. Proposed Unit 67 is 1980 feet from the North line and 660 feet from the West line of Section 25 (See Figure 2).

ELEVATION: 3566 feet

OWNERSHIP: Private land under lease to Continental Oil Company. Federal mineral rights are administered by the Bureau of Land Management, Roswell District.

AREA CLEARED: 400' x 400'

ACCESS: Vehicle access to Unit 67 is by a 80' x 1320' corridor originating at proposed Unit 65 and proceeding east to Unit 67. Powerline access is provided by a 30' x 1320' corridor from the location of a possible future well south of Unit 67 (See Figure 2).

CULTURAL DEBRIS OBSERVED: None

REMARKS: Access follows preestablished and staked routes.

RECOMMENDATIONS: Recommend that clearance be granted.

WARREN UNIT NUMBER 68

LOCATION: Northeast $\frac{1}{4}$ of the Northeast $\frac{1}{4}$, Section 27, Township 20 South, Range 38 East, Lea County, New Mexico. Unit 68 is 660 feet from the North line and 660 feet from the East line of Section 27 (See Figure 2).

ELEVATION: 3551 feet

OWNERSHIP: Private land under lease to Continental Oil Company. Federal mineral rights are administered by the Bureau of Land Mangement, Roswell District.

AREA CLEARED: 400' x 400'

ACCESS: Vehicle access to Unit 68 is by a 50 feet right-of-way corridor from proposed Unit 69 to Unit 68. This corridor skirts to the west of a large borrow pit immediately adjacent to State Road 18 and

between proposed Units 68 and 69. The borrow pit prohibits the straight north to south access route customary to these operations. At the advice of Mr. Allen Fredrickson of the Continental Oil Company, the access corridor follows the contour of the western edge of the borrow pit 90 feet from its lip until the North to South line between Units 68 and 69 is encountered on the north side of the borrow pit. At this point the access route turns north and proceeds to Unit 68 (See Figure 2).

CULTURAL DEBRIS
OBSERVED:

None

REMARKS:

No powerline access was surveyed.

RECOMMENDATIONS:

Recommend clearance be granted.

WARREN UNIT NUMBER 69

LOCATION:

Southeast $\frac{1}{4}$ of the Northeast $\frac{1}{4}$, Section 27, Township 20 South, Range 38 East, Lea County, New Mexico. Unit 69 is 1980 feet from the North line and 660 feet from the East line of Section 27. It is 1320 feet south of proposed Unit 68 (See Figure 2).

ELEVATION:

3551 feet

OWNERSHIP:

Private land under lease to Continental Oil Company. Federal mineral rights are administered by the Bureau of Land Management, Roswell District.

AREA CLEARED: 400' x 400'

ACCESS: Vehicle access to Unit 69 is through a 50' x 1320' corridor from established Unit 40 and proceeding east to Unit 69 (See Figure 2).

CULTURAL DEBRIS OBSERVED: None

REMARKS: No powerline access was surveyed.

RECOMMENDATIONS: Recommend clearance be given.

Access for powerlines to proposed Units 64, 65, 66 and 67 originates at the established Well Unit 49. A 30 feet right-of-way was surveyed east following a prestaked route to two possible future well locations. From these locations corridors were surveyed north to the proposed well units (See Figure 2). The west to east corridor is 1320 feet in length from Unit 49 to the first north junction and continuing 1320 feet more to the second north junction (to Units 66 and 67) for a total length of 2640 feet.

PHYSIOGRAPHY OF SURVEY AREAS

Briefly, all of the survey locations and access routes are in stabilized eolian dunes attributable to the Kermit soils associations and Dune land (See Turner, et al 1974:19-21). These soils consist of "excessively drained, noncalcareous loose sands" (ibid:19). The ground surface is hummocky with stabilized dunes and deflated areas. Drainage is into small basins where the water is quickly absorbed by the permeable sands. Local topographic relief changes are minor.

Vegetation observed at all locations included shinnery oak, narrowleaf yucca, prickly pear cactus, forbs and grasses. The winter condition of the

vegetation rendered absolute identification of the grasses and forbs difficult to impossible.

RESULTS OF THE SURVEY AND IMPACT ON CULTURAL RESOURCES

A total of eight proposed well locations were surveyed along with supporting and associated access routes. No significant prehistoric archaeological manifestations were observed. Historic artifacts observed were all closely associated with existing well drilling areas and thus date to the later half of the present century and are not considered significant at this time.

Damaging impact on archaeological resources can be considered to be caused by two means. The first of these is the immediate results on fragile resources derived from construction and other earth moving mechanisms. Also included here would be damage to the resource base caused by removal of artifacts from sites by non-qualified individuals and by methods nonconductive to the formulation of data or data control. The second causal means is the long term effect of construction projects on the resource base. For example new access roads into an area may open that area to increased impact from recreational off-road vehicles and their attendant trampling of resources. Also, removal of vegetation by construction projects can result in impact on the resource base due to increased wind and water erosion. The two means of damaging impact have recently been termed direct and indirect impact respectively (Scovill, et al 1972).

In the case of the present survey, direct impact does not seem to apply as there were no significant cultural resources observed. It must be

considered possible that they do exist, however, and are buried beneath the eolian deposits. Drilling the wells or construction of the well pads could damage such a buried resource.

Indirect impact due to increased public use of the area over the new access roads is not considered important in this case due to the ease of access from existing roads. It is possible that increased erosional activity could damage buried cultural resources but there is little indication that such exist.

IMPACT ON NATIONAL REGISTER SITES

The most recent listings of the National Register of Historic Places have been consulted and no sites which appear on the Register and no sites which have been nominated to the Register occur on the project area. The survey complies with the provision of the Historic Preservation Act of 1966 and with Executive Order 11593.

RECOMMENDATIONS

Because no sites or other significant cultural phenomena were observed during the above described survey, we recommend that archaeological clearance be granted for those areas surveyed and their access easements. Should buried resources be discovered during the course of construction, however, it will be necessary for construction activities in the immediate area to cease until the area can be reinvestigated by a qualified archaeologist.

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