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James Doyle Sell Mining Collection

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FILE MEMORANDUM

Deep Drilling Potential
Arizona

Mr. Floyd Moulton of the Anschutz Corporation, Denver, was the AGS speaker of Oct. 31, 1978. His paper was entitled "The Utah-Arizona Hinge-line Thrust Belt . . . ."

The basic premise is that by gravity, magnetics, and deep seismic, plus available geology, they can put together a reasonable picture of rock units to a depth of 40,000-60,000 feet, and what they indicate is that the basin-range area of Arizona is underlain by two and possibly three overthrust sheets with thick Paleozoic and Mesozoic sections being emplaced at these great depths.

I have attached the newspaper note of the meeting, a hand-out sheet on the "Proposal of Study," and the hand-out sheet for "Participation Contract."

After the field work is completed, they intend to drill a number (6 more or less) of holes to the 10 to 20-thousand-foot depth to confirm the existence of these thrusts and rock sections, and if continued favorable results evolve, then 30-thousand-foot holes will be programmed (at perhaps $16 million per hole).

Proposed early holes will be at Red Lake (Kingman), North Gila Bend (60 miles west of Phoenix), and in Cochise County.

James D. Sell

JDS:1b
Atts.
July 27, 1978

RE: PROPOSAL FOR HYDROCARBON POTENTIAL STUDY OF HINGELINE-OVERTHRUST BELT.

Gentlemen:

PROPOSAL

This letter is a proposal to your company by TerraScan Group to conduct a Hydrocarbon Potential Study of the Hingeline-Overthrust areas of Utah, Nevada, Mexico, and Arizona. The overall area to be studied is outlined on the enclosed index map.

INTRODUCTORY DISCUSSION

The recent discoveries of large petroleum reserves along the overthrust belt in southwestern Wyoming and northeastern Utah have changed many of the old ideas about oil exploration techniques. It is not without reason that the increased interest in this region is now spreading to include the entire Cordilleran Orogenic Belt from Montana to Mexico in an effort to fit more of these areas into the "mold" of the overthrust success story. In the not too distant future without a doubt more hydrocarbon accumulations will be discovered under similar structural conditions, but in reality we may have only scratched the surface of the true solution to the exploration problem.

In western Utah explorationists are slowly beginning to recognize that there is potential along what has been called the "Fillmore Arch" and all the area west of the Jurassic Age Sanpete-Sevier Rift where this area is isolated from the Colorado Plateau and has not been affected by tilting or dissection. Recent work has proven that the true position of the middle Mesozoic hingeline lies along the west flank of the Fillmore Arch. This hingeline has not as yet been evaluated and the potential facies development and associated potential for hydrocarbons along such a feature is virtually unlimited.
In Nevada the same overthrust play as in Utah is projected into the southwestern corner of the state. Windows of Paleozoic and Mesozoic rocks are variously folded and faulted along the frontal edge of the overthrusted Sevier Belt and the better exposed thrust faults west and north of Las Vegas.

In Arizona the picture is not as complete, but there is evidence that an overthrust belt does exist. Recent work indicated that, although obscure, there is continuity to prove that the relationship between the Nevada and Chihuahua overthrust belts is continuous without major interruptions and that complications are the result of pre-orogenic and post-orogenic events. The Sonoran and Arizonan portions of the overall thrust belt are now recognized as events that occurred in late Laramide. This thrusting positioned detached rocks of various Precambrian and Paleozoic ages over a sequence of marine Cretaceous sediments that have been estimated to be over 30,000 feet thick. This section is similar to the productive marine rocks in Mexico.

Recent information from Mexico has defined the Sonoran Trough as trending out of Mexico to the northwest and under the thrusting in south-central and western Arizona.

THE TERRASCAN PROGRAM

There is an abundance of surface and subsurface information available in all the areas mentioned above. Unfortunately very little of this information has been utilized to evaluate these areas for oil and/or gas potential. The primary objective of TerraScan's program will be to integrate all of this available data with a series of additional studies outlined below that we feel will be necessary to properly evaluate and grade the hydrocarbon potential of these areas. As the index map indicates we have separated the overall study area into north and south sections. We felt that this was necessary because:

1. Although these areas are orogenically related, they do have distinctive structural and stratigraphic characteristics that for exploration purposes make them dissimilar.

2. These differences being what they are, we would not want to force potential clients away from the program by not offering these areas on either a combined or separate basis.
Additional studies in Arizona, Nevada, Mexico, and Utah.

1. A six man-month field program will be carried out to collect samples for a geochemical source rock determination study. A minimum of 200 samples will be collected in each area and analyzed for total organic carbon with a more complete analysis to be run on selected samples that warrant kerogen and vitrinite determinations.

2. A two to four man-month field investigation of reservoir rock facies at all levels in the stratigraphic column, with porosity and permeability determinations.

3. Complete coverage by LANDSAT photo imagery for locating and evaluating regional linears, subtle geomorphic anomalies, or other events defined by remote sensing.

Studies in Arizona only.

1. A geothermal gradient study will be done to determine if there are any "hot spots" in Arizona that might have some effect on the preservation or destruction of available hydrocarbons.

2. A special study will be conducted in selected areas of southern Arizona to determine the relationship between metamorphosed upper plate rocks and unmetamorphosed lower plate sediments.

Data to be provided in the report.
(Note: All maps provided will be on a scale of 1:500,000).

1. Isopach maps of all major stratigraphic units.

2. Lithofacies maps of all potential reservoir rocks.

3. Regional structural map with major tectonic trends.

4. Correlation charts with palinspastic reconstruction of major units.
5. Final report containing a summary of structural and stratigraphic history of both areas; an analysis of the results determined in all studies and a comprehensive discussion of those areas that have the best potential for future exploration.

**SCHEDULE AND SUBSCRIPTION RATES**

These program areas are offered both as a divided or undivided package. The fees to participate in the projects are as follows:

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<td>Area I only</td>
<td>$18,500.00</td>
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<tr>
<td>Area II only</td>
<td>$17,000.00</td>
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As an added incentive there will be a reduction in the cost to the first four participants who sign up for either one or both programs. The amount of reduction will be determined at a fixed rate of 5 percent of the original cost per client signed over 4 to a maximum of 9. If in the event that 9 clients sign, the original 4 participants would realize a reduction of 25 percent in their original purchase price.

Both programs are scheduled to commence on September 15, 1978. Participating companies will have the exclusive rights to use the materials, maps and analyses for a period of six months from delivery of the final reports. After six months TerraScan Group, Inc. will have the right to resell the report, maps and data derived as a result of these studies.

As an additional offer to participating companies in the Hingeline-Overthrust program, TerraScan will give an option to purchase the Eastern Great Basin Program (see blue area on index map) at a reduced rate when it will be released from its exclusive status at the end of December. The fee for the Great Basin program is scheduled to be $32,500.00. The option fee would be set at $25,000.00 for participants who elect to purchase the proposed study.
ADDitional PROGRAMS

Within 30 days TerraScan, Lisle Associates and Edcon will offer additional programs for gravity and magnetics in both areas I and II.

If there are any questions about the programs please do not hesitate to call us for additional information.

Sincerely,

[Signature]

E.L. Howard
President TerraScan Group, Inc.

mv:ELH
Enclosure
PARTICIPATION CONTRACT

TerraScan Group, Inc. Date:
11219 West 27th Avenue
Lakewood, Colorado 80215

Gentlemen:

We would like to participate and receive the Geologic and Hydrocarbon Potential Study of the Hingeline-Overthrust Belt areas of Utah, Nevada, New Mexico, Arizona and northern Mexico as outlined in your original proposal letter of July 27, 1978, under option ___ as listed below.

Option "A". We agree to pay TerraScan Group, Inc. $32,500.00 ($36,000.00 if purchased after October 15, 1978) for the combined Geologic and Geochemical Programs of Area I (Arizona, New Mexico Overthrust Belt) and Area II (Hingeline Overthrust Belt of western Utah and southeastern Nevada).

Option "B". We agree to pay TerraScan Group, Inc. $18,500.00 ($20,000.00 if purchased after October 15, 1978) for the Geologic and Geochemical Study of Area I (Arizona, New Mexico Overthrust Belt).

Option "C". We agree to pay TerraScan Group, Inc. $17,000.00 ($18,500.00 if purchased after October 15, 1978) for the Geologic and Geochemical Study of Area II (Hingeline-Overthrust Belt of western Utah and southeastern Nevada).

We further agree that within (20) days after the date of this contract we will pay fifty (50) percent of the price of the study or studies under the option chosen above. We further agree and understand that we will be billed for an additional twenty five (25) percent of the cost of the selected program ninety (90) days after the first billing date and will pay the remaining balance upon completion and final delivery of the study or studies.

We understand that TerraScan Group, Inc. will exercise its best judgment in the preparation and supervision of data collection, interpretations, maps and the final reports. It is also understood and agreed that TerraScan Group, Inc. shall not be liable under any conditions for any damages due to inaccuracy of the maps or any data supplied by them. Though TerraScan Group, Inc. shall use their best efforts to keep the data and maps free of errors, they do not guarantee their accuracy.

We understand and agree that all data, maps, reports, and interpretations are copyrighted materials, registered with the U.S. Register of Copyrights. We agree that recognition of this copyright forbids us to give, sell or loan any of this information to a third party or parties.

Please deliver all communications, data, maps and the completed report to the individual at the address listed below.

AGREED AND ACCEPTED: Sincerely yours,

TerraScan Group, Inc. Company

By By
Title Title
Date
Street
City State Zip
Idaho – Jerussie 7 – in Idaho-celebrity. Aig to
dotted test but has Jerussie polymorphs hence – the
mother may be Jerussie of later angled into test sites.

Red Lake, Mo (Kropinin)
40,000 ft of the (sericite). They will drill.
Thrusting preceded Tertiary basin collapse.

North Elko, B.C. Sericite also
4 1/2 million acres under lease.

Idaho – pegmatoid thrusts indicate 39 mile of
used to east transport prior to an underlying
thrust being developed & moved eastward
with pegmatoid of older thrust units.

See Am Jour Sci 1975 – Buickfield & Davis.

20 – 30 thousand ft of Blues-Meesey below long
thrust plate. May be 2 or 3 plates.
10-15-20 thousand foot hole.
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|       |          |           | Rock is mentioned every time. 
<p>|       |          |           | Gray Rock at 715 to 716. |
| 556.6 | 35-bbd   | TD 1970   | 710-930 Siltstone Zone |
|       |          |           | 650-1000 Gray Schistone granite 75% |
|       |          |           | Granitics 20% |
|       |          |           | Quartz 5% |
|       |          |           | 30-40 Grav. |
| 350-360 | 19-cbd  | TD 360    | 350-360 Blue Gray Schist |
| U.S.G.S. |          |           | Pending File |
| U.S.G.S. |          |           |</p>
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<tr>
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<td>1000</td>
<td>TD 1000</td>
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<td>20 ab6</td>
<td>USGS: 840-1000 Very Good Coarse Grav. Some Gravel Bids</td>
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<td>550-600</td>
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<td>29 ab6</td>
<td>USGS: 580-600 Sandstone &amp; Rock (USGS G)</td>
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<td>30 ab6</td>
<td>USGS: 377-940 Hard Rock</td>
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<tr>
<td>650</td>
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<td>34 ab6</td>
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<td>34 dba</td>
<td>760-763 Sticky Clay</td>
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Scale 1:62,500

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**Scale 1:62,500**

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<td>35-35 Red Shist</td>
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<td>55-90</td>
<td>86-90 Shist - Hard - With Sharp Quartz Cuttings</td>
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<td>115-128</td>
<td>115-128 Sandy Lime</td>
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<td>128-135</td>
<td>128-135 Blue Lime Bed Rock Extremely Hard No Water in This Hole</td>
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<td>195-200 Schist Brown Very Little Mud</td>
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NOTE: SEE ASARCO PROJECT FILES FOR LOGS—ADDITIONAL DATA.

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Notes:
- SLD: Sandstone
- GSP: Greenstone
- M.E. Cooley's Map: Geological map
- 418 степень: 418 degree
- 444 степени: 444 degree

Date: 12/20/72
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- DATA USGS FILES

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Pending Files
J. Y. S., R. 12 E.

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<td>granite red hard</td>
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KAL VP O.T - SEE ASARCO FILES

Tippecanoe Land Exploration Co., Dec. 11, 1970

Scale 1:63,500

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<td>TD 1150</td>
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<td>TD 602</td>
<td>504-602 BROWN CLAY</td>
</tr>
<tr>
<td>23c1b</td>
<td>23c1b</td>
<td>TD 800</td>
<td>650-800 CLAY WITH SANDY streaks</td>
</tr>
<tr>
<td>24c1b</td>
<td>24c1b</td>
<td>TD 600</td>
<td>596-600 SANDY CLAY</td>
</tr>
<tr>
<td>25b1c</td>
<td>25b1c</td>
<td>TD 400</td>
<td>390-400 SANDY CLAY</td>
</tr>
<tr>
<td>25a1c</td>
<td>25a1c</td>
<td>TD 500</td>
<td>415-500 CLAY + SILT</td>
</tr>
<tr>
<td>25d1b</td>
<td>25d1b</td>
<td>TD 396</td>
<td>339-396 CLAY + CALIENE</td>
</tr>
<tr>
<td>26b1b</td>
<td>26b1b</td>
<td>TD 256</td>
<td>230-256 SANDY CLAY</td>
</tr>
<tr>
<td>29c1b</td>
<td>29c1b</td>
<td>TD 500</td>
<td>344-500 CLAY + CLAY SMALLS 50-50</td>
</tr>
<tr>
<td>30d1c</td>
<td>30d1c</td>
<td>TD 580</td>
<td>301-580 CLAY - CHANGING COLORS BROWN, GREEN + BLUE</td>
</tr>
<tr>
<td>30e1d</td>
<td>30e1d</td>
<td>TD 800</td>
<td>780-800 STICKY CLAY</td>
</tr>
<tr>
<td>31c1e</td>
<td>31c1e</td>
<td>TD 530</td>
<td>513-530 HARD STICKY CLAY - RED</td>
</tr>
<tr>
<td>31d1c</td>
<td>31d1c</td>
<td>TD 473</td>
<td>312-473 CLAY GRAVEL STARTS HOUSE FORMATION</td>
</tr>
<tr>
<td>Sample</td>
<td>Depth (ft)</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>31dec</td>
<td>TD 568</td>
<td>345-565 CLAY</td>
<td></td>
</tr>
<tr>
<td>31ddd</td>
<td>TD 741</td>
<td>515-741 HARD CLAY</td>
<td></td>
</tr>
<tr>
<td>32ccc</td>
<td>TD 500</td>
<td>414-500 HARD RED CLAY</td>
<td></td>
</tr>
<tr>
<td>32edd</td>
<td>TD 295</td>
<td>293-295 SAND</td>
<td></td>
</tr>
<tr>
<td>32dec</td>
<td>TD 600</td>
<td>320-600 CLAY &amp; SHALE</td>
<td></td>
</tr>
<tr>
<td>33cde</td>
<td>TD 1000</td>
<td>322-1000 CLAY &amp; CLAY SHALE</td>
<td></td>
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<tr>
<td>33edd</td>
<td>TD 795</td>
<td>[510 DEEPENED 298-795 57] 300-795 CLAY &amp; CLAY SHALE</td>
<td></td>
</tr>
<tr>
<td>34cab</td>
<td>TD 600</td>
<td>510 560 TOUGH CLAY</td>
<td></td>
</tr>
<tr>
<td>34dec</td>
<td>TD 500</td>
<td>262-500 CLAY &amp; CLAY SHALE</td>
<td></td>
</tr>
<tr>
<td>35add</td>
<td>TD 422</td>
<td>347-422 HARD CLAY</td>
<td></td>
</tr>
<tr>
<td>35dbb</td>
<td>TD 410</td>
<td>NO LOG [SEE EXMT 109]</td>
<td></td>
</tr>
<tr>
<td>36add</td>
<td>TD 1000</td>
<td>SLD [DEEPENED 502-1000 63] 970-1000 SAND/GRANITE, CONGLOMERATE, VERY TIGHT</td>
<td></td>
</tr>
<tr>
<td>36cdd</td>
<td>TD 700</td>
<td>SLD 500-600 CLAY &amp; CLAY SHALE</td>
<td></td>
</tr>
<tr>
<td>12eda</td>
<td>TD 360</td>
<td>280-365 cl, A SHALE WATER LAYERS PENDING FILE 21S. 65</td>
<td></td>
</tr>
<tr>
<td>20aaa</td>
<td>TD 1160</td>
<td>1066-1160 STRATA'S GRAVEL, SAND CLAY STRATA'S SOME OIL SN PENDING FILE 215.65</td>
<td></td>
</tr>
<tr>
<td>35baa</td>
<td>TD 378</td>
<td>PENDING FILE 21S.65</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Description</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------</td>
<td>--------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>12/5/72</td>
<td>To 230</td>
<td>ADD.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>56ac</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>800c</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8add</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14cdd</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10cbd</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10cdd</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18bba</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **ME. COOLEY'S MAP**
  - 230 CG (QTo) = clay + gravel
  - 800c Map
  - 8add Map
  - 14cdd Map
  - 10cbd Map
  - 10cdd Map
  - 18bba Map

- **M.S. Files**
  - 910-935 Rhyolite (Hard)
  - PENDING FILE
<table>
<thead>
<tr>
<th>Depth</th>
<th>Interval</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 add</td>
<td>TD 453</td>
<td>407-453 CLAY</td>
</tr>
<tr>
<td>2 add</td>
<td>TD 520</td>
<td>462-520 CEMENTED GRAVEL &amp; SAND NO WATER?</td>
</tr>
<tr>
<td>3 add</td>
<td></td>
<td>NO LOG OR TD.</td>
</tr>
<tr>
<td>4 add</td>
<td>TD 600</td>
<td>525-600 SAND</td>
</tr>
<tr>
<td>5 add</td>
<td>TD 505</td>
<td>445-505 CGL &amp; CLAY</td>
</tr>
<tr>
<td>6 add</td>
<td>TD 336</td>
<td>305-336 RED CLAY</td>
</tr>
<tr>
<td>7 add</td>
<td>TD 313'6&quot;</td>
<td>310-313 STICKY CLAY</td>
</tr>
<tr>
<td>8 add</td>
<td>TD 580</td>
<td>485-500 CLAY</td>
</tr>
<tr>
<td>9 add</td>
<td>TD 940</td>
<td>855-900 CGL WITH CLAY</td>
</tr>
<tr>
<td>10 add</td>
<td>TD 845</td>
<td>900-845 CGL</td>
</tr>
<tr>
<td>11 add</td>
<td>TD 745</td>
<td>545-750 SAND SOME CLAY</td>
</tr>
<tr>
<td>12 add</td>
<td>TD 316</td>
<td>730-845 TIGHT CGL</td>
</tr>
<tr>
<td>13 add</td>
<td>TD 530</td>
<td>311-316 CEMENT CGL</td>
</tr>
<tr>
<td>14 add</td>
<td>TD 530</td>
<td>510-530 GRANITITES 9070 SAND</td>
</tr>
<tr>
<td>15 add</td>
<td>TD 425</td>
<td>904-924 CLAY</td>
</tr>
<tr>
<td>16 add</td>
<td>TD 112</td>
<td>350-912 CLAY</td>
</tr>
<tr>
<td>17 add</td>
<td>TD 200</td>
<td>SEE LOG SCHEDULE FOR LOG</td>
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(Cont.)
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
<td>20 cad</td>
<td>552-580 clay, little gravel</td>
</tr>
<tr>
<td>22a bb</td>
<td>598-600 clay</td>
</tr>
<tr>
<td>24 bab</td>
<td>412-432 clay</td>
</tr>
<tr>
<td>28 bab</td>
<td>560-616 clay</td>
</tr>
<tr>
<td>28 ccb</td>
<td>350-800, grit, hard cemented sand, gravel</td>
</tr>
<tr>
<td>29 a da</td>
<td>520-556 tough clay, sandy streaks</td>
</tr>
<tr>
<td>30 cbb</td>
<td>582-600 clay</td>
</tr>
<tr>
<td>31 add</td>
<td>827-1000 sandy clay, some gravel</td>
</tr>
<tr>
<td>32 a cb</td>
<td>565-575 granite</td>
</tr>
<tr>
<td>32 b da</td>
<td>565-575 granite, water sand</td>
</tr>
</tbody>
</table>

*Notes:*
- TD 560
- Pending File
- V. 56.5 fies
- 990-900, hard cemented, decom, granite
- 707-950, hard cemented decom, granite
<table>
<thead>
<tr>
<th></th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>18</td>
<td>17</td>
<td>16</td>
<td>15</td>
<td>14</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
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<td>30</td>
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<td>28</td>
<td>27</td>
<td>26</td>
<td>25</td>
<td></td>
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<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
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DATA USGS FILES

Scale 1:62,500

55° 10E
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Description</th>
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<tbody>
<tr>
<td>920.6</td>
<td>SLD</td>
</tr>
<tr>
<td>705-502</td>
<td>140-502 clay + gravel</td>
</tr>
<tr>
<td>2700.0</td>
<td>SLD</td>
</tr>
<tr>
<td>707-507</td>
<td>498-507 fine silty sand</td>
</tr>
<tr>
<td>31 5V4/4, 5V4/4</td>
<td>WESTERN OIL FIELDS INC.</td>
</tr>
<tr>
<td>5142</td>
<td>S142 in Volo, (dimite breccia)</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td>31</td>
<td>32</td>
</tr>
</tbody>
</table>

Scale: 1:62,500

SS, N.C.
NO WELL OR LOGS A VS OS
No logs or wells at this time
NO LOGS OR WELLS
AT THIS TIME

(0-5-13)

12/6/72
<table>
<thead>
<tr>
<th>0-5-14</th>
<th>5/15/73</th>
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<tbody>
<tr>
<td><strong>250 Snagy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TD 50</strong></td>
<td></td>
</tr>
<tr>
<td><strong>40-50 Loose Sand Cobble Stones</strong></td>
<td></td>
</tr>
<tr>
<td><strong>D.5-14</strong></td>
<td></td>
</tr>
<tr>
<td><strong>20-70</strong></td>
<td></td>
</tr>
<tr>
<td><strong>210-350</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1000-2500</strong></td>
<td></td>
</tr>
<tr>
<td><strong>3000-5000</strong></td>
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</tr>
<tr>
<td><strong>5000-10000</strong></td>
<td></td>
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<tr>
<td><strong>&gt;10000</strong></td>
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</tr>
</tbody>
</table>
A-1 0-500 T.D. Pre cambrian granite and diorite porphyry.

A-2 0-145 Whitetail Conglomerate (?).

G-1 0-200 (?) Geb kivi silt.
200 (?) - 500 (?) Whitetail Conglomerate
500 (?) - 2000 Pre cambrian granite

G-2 0-90 (?) Geb kivi silt
90 (?) - 710 (?) Whitetail Conglomerate
710 (?) - 1280 Pre cambrian granite of graphic granite.
Hole Designation: Humboldt 32-1

Section: 5

Humboldt, Tucson

General File Reference: Pima County General, Ac-16,000

Total Depth: 12,556 ft.

Postmineral thickness: 11,957 ft.

Premineral bedrock: Gypsum Manganese

Source of Information:

Drill Contractor:

Affiliated Drilling Co.

Company:

Humboldt Oil Refining Co.

Date:

Spudded 9/14/72
Completed 12/18/72

Geologic Log:

Assays, Geochem:

Core, cuttings on file:

Cuttings probably on file with Pima GC.

Drilling Problems, Depth to Water:

Other:

Collar Elevation: 2,073 ft.
Pima County, Arizona

Other logs: Consolidated formative datum, Indication - Electrical, Basehole, Consolidated sonic log - Gamma Ray.

9-12-74
**COUNTY:** Pima  
**AREA:** 4 mi. SE of Tucson  
**LEASE NO.:** State 32

**WELL NAME:** HUMBLE OIL & REFINING COMPANY STATE (32) No. 1

**LOCATION:** NE/SW  
**SEC:** 5  
**TWP:** 16 S  
**RANGE:** 15E  
**ELEV:** 2873  
**GR:** 1  
**KB:**  
**SPUD DATE:** 9-16-72  
**FOOTAGE:** 2210 FWL - 2210 FSL  
**STATUS:** 1&A  
**COMP. DATE:** 12-18-72  
**TOTAL DEPTH:** 12,556

**CONTRACTOR:** Loffland Drilling Company

<table>
<thead>
<tr>
<th>Casing Size</th>
<th>Depth</th>
<th>Cement</th>
<th>Liner Size &amp; Depth</th>
<th>Drilled by Rotary</th>
<th>Drilled by Cable Tool</th>
<th>Productive Reservoir</th>
<th>Initial Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot;</td>
<td>199</td>
<td>265 sx</td>
<td></td>
<td></td>
<td></td>
<td>NA</td>
<td>Dry Hole</td>
</tr>
<tr>
<td>10 3/4&quot;</td>
<td>2982</td>
<td>1,070 sx</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

**Formation Tops**  
**Depths**

<table>
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<tr>
<th>Source</th>
<th>L.L.</th>
<th>E.L.</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Completion Report for formation changes - Operator claims formation tops picked. Basement rocks F/11987 to T.D.</td>
</tr>
</tbody>
</table>

**Electric Logs**

- Comp. Form. Density-1
- Comp. Neutron Form Density-1
- I.E.-1, Dual Ind. Laterolog-1
- Comp. Neutron Log-1
- BHC Sonic Log-Gamma Ray-2

**Sample Log Sample Descrp.**  
**Sample No.:** 1724

**Core Analysis**

- DSTs

**Remarks**

- Stratigraphic test

**Water Well Accepted By**

- BOND CO. THE AMERICAN INSU. COMPANY
- BOND AMT.: $25,000
- CANCELLED
- FILING RECEIPT: 2933
- Loc. Plat: X
- WELL BOOK: X
- PLAT BOOK: X
- API NO.: 02-019-20001
- DATE ISSUED: 9-5-72
- DATE: 5-10-11-58
- ORGANIZATION REPORT: 1-2-73
- DEDICATION: E/2 SW/4 80 acres

**Permit Number:** 597
WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

DESIGNATE TYPE OF COMPLETION:

New Well [ ] Work-Over [ ] Deepen [ ] Plug Back [ ] Same Reservoir [ ] Different Reservoir [ ] Oil [ ] Gas [ ] Dry [x]

DESCRIPTION OF WELL AND LEASE

Operator
Humble Oil & Refining Company

Address
P. O. Box 1600, Midland, Texas 79701

Federal, State or Indian Lease Number or name of lessor if fee lease
State (32) (State Lease No. 14232)

Well Number
1

Field & Reservoir
Stratigraphic Test Hole

Location
2,210' FSL & 2,210' FWL

County
Pima

Sec. TWP-Range or Block & Survey
Section 5, T-16-S, R-15-E

Date spudded
9-16-72

Date total depth reached
12-14-72

Date completed, ready to produce

Dry Hole

Total depth
12,556'

Elevation (DP, RKB, RT or Gr.)
2,873' GR

Elevation of casing hanger range
-

Dry Hole

Producing interval(s) for this completion

Rotary tools used (interval)

Cable tools used (interval)

Was this well directionally drilled?
No

Was directional survey made?
No

Was copy of directional survey filed?
No

Date filed
-

Type of electrical or other logs run (check logs filed with the commission)
Comp. Form. Density; Induction - Electrical; Borehole, Comp.

Sonic Log - Gamma Ray

CASING RECORD

Casing (report all strings set in well—conductor, surface, intermediate, producing, etc.)

Purpose
Conductor

Size hole drilled
20"

Size casing set
16"

Weight (lb./ft.)
65#

Depth set
199'

Sacks cement
265 sx

Amt. pulled
None

TUBING RECORD

Size
Surface

Depth set
13-3/4"

Packer set at
10-3/4"

Weight (lb./ft.)
40.5#

Depth Interval
2,982'

Casing record
1,070 sx

None

Liner Record

Size

Depth set

Packer set at

Weight (lb./ft.)

Depth Interval

None

PERFORATION RECORD

Number per ft.

Size & type

Depth Interval
None

Am't. & kind of material used

Depth Interval
None

INITIAL PRODUCTION

Date of first production
Dry Hole

Producing method (Indicate if flowing, gas lift or pumping—if pumping, show size & type of pump)

Date of test

Hrs. tested

Choke size

Oil prod. during test
bbls.

Gas prod. during test
bbls.

Cal'd rate of Pro-duction per 24 hrs.

Oil

Gas

Water

Oil gravity
API (Corr)

Tubing pressure

Casing pressure

Disposition of gas (state whether vented, used for fuel or sold):

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Proration Specialist of the Humble Oil & Refining Company (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date
12-29-72

Signature
D. L. Clemmer

NOTE: Copies of Logs Filed w/this Report

Orig.: OGCC - State of Arizona

cc: Drilling Section

cc: Central File

cc: D. L. Clemmer

 Permit No. 597

STATE OF ARIZONA

OIL & GAS CONSERVATION COMMISSION

RECEIVED

JUL 1 1973

Well Completion or Recompletion Report and Well Log

Form No. 4

File One Copy

O & G CONS. COMM.
<table>
<thead>
<tr>
<th>Formation</th>
<th>Top</th>
<th>Bottom</th>
<th>Description*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>850</td>
<td>Sd. and Conglomerate with red shale.</td>
</tr>
<tr>
<td></td>
<td>850</td>
<td>1,150</td>
<td>Med. to coarse grained sand</td>
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<tr>
<td></td>
<td>1,150</td>
<td>2,975</td>
<td>Red Clay, occasional sand</td>
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<tr>
<td></td>
<td>2,975</td>
<td>7,300</td>
<td>Sand, shale and conglomerate</td>
</tr>
<tr>
<td></td>
<td>7,300</td>
<td>7,710</td>
<td>Interbedded volcanic tuff, sand and shale</td>
</tr>
<tr>
<td></td>
<td>7,710</td>
<td>9,070</td>
<td>Interbedded andesitic basalt and shale</td>
</tr>
<tr>
<td></td>
<td>9,070</td>
<td>9,525</td>
<td>Conglomerate</td>
</tr>
<tr>
<td></td>
<td>9,525</td>
<td>10,036</td>
<td>Basalt vol. flow andesite and tuff</td>
</tr>
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<td></td>
<td>10,036</td>
<td>11,987</td>
<td>Conglomerate and shale</td>
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<tr>
<td></td>
<td>11,987</td>
<td>T. D.</td>
<td>Basement, Qtz. monzonite</td>
</tr>
</tbody>
</table>

Log by geologist or engineer, Bill Stanley, and Lyle Eberly.

* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

INSTRUCTIONS:
Attach drillers log or other acceptable log of well.
This Well Completion or Recompletion report and well log shall be filed with the State of Arizona Oil & Gas Conservation Commission not later than thirty days after project completion.

Form No. 4
### PLUGGING RECORD

**Operator:** Humble Oil & Refining Company  
**Address:** P. O. Box 1600, Midland, Texas 79701

**Federal, State, or Indian Lease Number, or lessor's name if fee lease:** State Lease No. 14232  
**Well No.:** 1  
**Field & Reservoir:** Wildcat - Core Test

<table>
<thead>
<tr>
<th>Location of Well</th>
<th>State (32)</th>
<th>Well No.</th>
<th>Field &amp; Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,210' FSL &amp; 2,210' FWL</td>
<td>Section 5, T-16-S, R-15-E</td>
<td>1</td>
<td>Wildcat - Core Test</td>
</tr>
</tbody>
</table>

**Application to drill this well was filed in name of:** Humble Oil & Refining Company  
**Has this well ever produced oil or gas:** No

**Date plugged:** December 18, 1972  
**Total depth:** 12,556

**Character of well at completion (initial production):**
- Oil: None
- Gas: None
- Dry: Yes

**Amount well producing when plugged:**
- Oil (bbls/day): None
- Gas (MCF/day): None
- Water (bbls/day): None

**Date plugged:** December 18, 1972  
**Total depth:** 12,556

**Character of well at completion (initial production):**
- Oil: None
- Gas: None
- Dry: Yes

**Amount well producing when plugged:**
- Oil (bbls/day): None
- Gas (MCF/day): None
- Water (bbls/day): None

**Name of formation containing oil or gas:** None - Dry Hole

**Fluid content of each formation:**
- None - Dry Hole

**Depth interval of each formation:**
- None
- Dry Hole 2

**Casing Record**

<table>
<thead>
<tr>
<th>Size pipe</th>
<th>Put in well (ft.)</th>
<th>Pulled out (ft.)</th>
<th>Left in well (ft.)</th>
<th>Give depth and method of parting casing (shot, ripped, etc.)</th>
<th>Packers and shoes</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot;</td>
<td>* 203'</td>
<td>None</td>
<td>203'</td>
<td>-</td>
<td>None</td>
</tr>
<tr>
<td>10-3/4&quot;</td>
<td>**2,970'</td>
<td>None</td>
<td>2,970'</td>
<td>-</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>** Set at 199'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>** Set at 2,982'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Was well filled with mud-laden fluid, according to regulations:** Yes  
**Indicate deepest formation containing fresh water:** 1,100'

**Names and Addresses of Adjacent Lease Operators or Owners of the Surface**

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Direction from this well:</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of Arizona</td>
<td>4515 N. 7th Avenue, Phoenix, Arizona</td>
<td>- -</td>
</tr>
</tbody>
</table>

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

Use reverse side for additional detail.

**Certificate:** I, the undersigned, under the penalty of perjury, state that I am the Division Drig. Oper. Supt. of the Humble Oil & Refining Company company, and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date: December 21, 1972  
Signature: H. C. Davidson

**RECEIVED**

DEC 24 1972  
O & G CONS. COMM.

**Permit No.:** 597

**STATE OF ARIZONA**  
**OIL & GAS CONSERVATION COMMISSION**  
**Plugging Record**  
**File One Copy**  
Form No. 10
Application to Abandon and Plug

FIELD: Wildcat - Core Test
OPERATOR: Humble Oil & Refining Company
ADDRESS: P.O. Box 1600, Midland, Texas 79701
Federal, State, or Indian Lease Number: State (32)
WELL NO.: 1
SURVEY: T-16-S, R-15-E
SECTION: 5
COUNTY: Pima
LOCATION: 2,210' FSL & 2,210' FHL

TYPE OF WELL: Dry Hole
TOTAL DEPTH: 12,556
ALLOWABLE (if assigned): __________
LAST PRODUCTION TEST: OIL (Bbls.) __________
GAS (MCF) __________
PRODUCING HORIZON: Dry Hole
PRODUCING FROM: _TO_ __________

1. COMPLETE CASING RECORD

16" 65# HW casing - 203' set at 199' - cemented w/265 sx Class "A" - cement circulated
10-3/4" 40.5# J-55 casing - 2,970' set at 2,982' - cemented w/1,070 sx Class "B" - cement circulated

2. FULL DETAILS OF PROPOSED PLAN OF WORK

RECEIVED

Plug and abandon well as follows:

| Plug #1 | 9,650 - 9,550 | w/50 sx cmt. | O & G CONS. COMM. |
| Plug #2 | 6,300 - 6,200 | w/55 sx cmt. |
| Plug #3 | 3,030 - 2,930 | w/125 sx cmt. |
| Plug #4 | 20 - 0 | w/20 sx cmt. |

Fill balance of hole w/8.9#/gal. mud; verbal approval obtained 12-14-72.

If well is to be abandoned, does proposed work conform with requirements of Rule 202? Yes If not, outline proposed procedure above.

DATE COMMENCING OPERATIONS: 12-16-72

NAME OF PERSON DOING WORK: Humble Oil & Refining Co.
ADDRESS: P.O. Box 1600, Midland, Texas 79701

CORRESPONDENCE SHOULD BE SENT TO: Humble Oil & Refining Company

Name: __________
Division: __________
Drilling Superintendent

Orig. & loc: OGCC - State of Arizona
cc: Drilling Section
cc: Central File
cc: D. L. Clemmer

Date Approved: 12-24-72

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Abandon and Plug
File Two Copies
Form No. 9

Permit No: 597

By: __________

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

Date: __________

State of Arizona
Oil & Gas Conservation Commission

Application to Abandon and Plug
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File Two Copies
Form No. 9

Permit No: 597

By: __________
Memorandum to Staff

Drill Location Index

It has recently come to my attention that not everyone on the staff has seen the attached memo by WLK (9/12/74), or remembers it. I wish to emphasize the importance of this information to our overall effort -- particularly in Southern Arizona where most of our new projects involve drilling through post-mineral cover.

Please note the next to last paragraph -- use your own discretion as to how many water wells you want to record which bottom in alluvium. Record all wells which bottom in pre-mineral rock or are unusually deep. Presumably you might want to record more wells in areas of interest to Asarco than elsewhere.

Everyone can and better contribute to this effort. Were this work to result in an Asarco discovery the benefits to us all should be obvious. The reverse should also be obvious. I can think of at least one example where a water well intersected an orebody (Pyhasalmi in Finland). It could easily happen in S. Ariz.

F. T. Graybeal

FTG:lb
Atts.

cc: WLKurtz
MEMORANDUM TO GEOLOGISTS

As we continue to explore the covered areas it becomes increasingly important to know the results of all previous drill penetrations (water well, geothermal well, oil and gas well, exploration hole). So we may have this data readily accessible and easily useable, I should like to institute the following procedure:

1) Plot drill holes on the AMS sheets showing only location, total depth, thickness of postmineral cover, and premineral rock type.

2) Record all known data on an 8-1/2 x 11 sheet to be filed by Township and Range in a looseleaf folder. Included on this sheet should be information such as: accurate location, drill contractor, for whom drilled, date, rock types, contact depths, assays, geochem data, core or cuttings on file, drilling problems, depth to water, etc., etc., and source of information.

Where a number of holes exist, outline the area drilled and write the number of holes beside it. If we have a report on the area, the 8-1/2 x 11 sheet simply needs to make reference to that report (e.g., the Courtland-Gleeson area would be represented by a circle with number of drill holes written by it and the 8-1/2 x 11 sheet would make reference to the "Evaluation of Bear Creek's Courtland Gleeson property" and Asarco's "Turquoise Project".

This index is primarily directed at keeping a record of competitor drilling. It is not necessary to plot all water wells on this index, but only those that are significant -- premineral bedrock penetration, thick section of postmineral valley fill. N. Whaley has been compiling and indexing water well data.

As time permits, give your information to Mrs. Kellogg to plot on the AMS sheets and detail information on attached form to Mrs. Bormolini for filing in looseleaf folder.

W. L. Kurtz

cc: JHCourtright
    VMKellogg
    LABormolini
General File Reference:

Total Depth:

Postmineral thickness:

Premineral bedrock:

Source of Information:

Drill Contractor:

Company:

Date:

Geologic Log:

Assays, Geochem:

Core, cuttings on file:

Drilling Problems, Depth to Water:

Other:

9-12-74
June 9, 1975

MEMORANDUM FOR STAFF

Please keep our drill location index up to date.

I consider this an important contribution to our overall exploration program.

W. L. Kurtz

W. L. Kurtz

cc: JHCourtright
LABormolini
VMKellogg
Velo: stove current 4/18/73
Hanna - Sof/Kusa

Gravel 0-700
0-700: inside slide block
700 foot set
900-1277 gravel - CGF
1277 - incline of Pit moment

W/ saltation - miscellaneous ??

Another hole collared next to an outcrop surrounded by gravel went to +1500 feet in gravel!
Nudelsor Project, Jerome Minerals
Cochise County, Ariz
T 20S, R 24E

GMS-1, Section 28, 1475' FNL & 2400' FEL
GMS-2, Section 21, 1000' FSL & 980' FNL
Note: fig 2, added only 5000' along section lines.

GMS-1, started 2/17/76, completed 3/10/76
T.D. 3575', Story Brothers, DMX Rotary

caller elev. 4675', weather

loc. E 1/4 NW 1/4, Sec 28

0-60 sand
60-1200 Gray, light tuff, tuff as, 1 tuff, gray tuff, ash.
1200-1250-3/4 John M.enk, Maren, tuff, tuff as.
3-140, 3575' T.D. granodiorite, clay & limonite, Nw. all vein.

Rotary 4' probe, surf. 3002.
spot area: 770-775; 10 25-1070; 12c1-1205; 1335-1350; 2525-2535

NX Core 3002-

GMS-2, started 3/10/76, completed 5/4/76
T.D. 3495', Beastley DMX

Rotary 4' probe, surf. 3003, loc. SW 1/4 SW 1/4, Sec 21

0-20-Quartz
20-1100, gray, dark (Nudelston Volcanic), gray
1100-3210, Beaker Fm, gray, medium, dark, Nw. all vein
1210-3495, granite Fm, 41 minor x's north of Beaker homestead 28c
also one spot, amphibolite grade (clay) two py.
Rotary: surf., 3003.

NX Core, 3003-3495 T.D.
Multiplex Drilling Costs

<table>
<thead>
<tr>
<th>Well Name</th>
<th>Total Feet</th>
<th>Direct Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS-1</td>
<td>50.02</td>
<td>11.25</td>
<td>59.4</td>
</tr>
<tr>
<td>GMS-2</td>
<td>3623</td>
<td>972</td>
<td>492</td>
</tr>
<tr>
<td>Total</td>
<td>5005</td>
<td>1065</td>
<td>73,439</td>
</tr>
</tbody>
</table>

Total direct & indirect cost of drilling = $114,000

Indirect cost = $29,000

Total project costs = $143,000

Overall ave direct cost = 14.56/ft GMS-1

= 11.25/ft GMS-2

more spot cases in GMS-1 (more in GMS-2)

& less curved section in GMS-2

A suggested ave rate of 23.75/ft below 3000 ft

Both holes reached 5 7/8" with 3 1/2" CD casing and 3" rotating penetration rate (overall) = 30-40 ft/hr, shift; will penetration rate of 40 ft/hr rotating.

Diagram of well location and connection to plant.
General File Reference: Pinal County General An-16A-0-0
Total Depth: 8024 feet
Postmineral thickness: OGC file not checked
Premineral bedrock: Noted as "Tertiary" in WLMAP "A"
Source of Information: OGC record: Well Location Key Form (1977)
Drill Contractor: (ASAHCO File Copy)
Company: Geothermal Kinetics and AMAX Exploration
Date: Completed 8/74
Geologic Log: See Oil & Gas Company File #622
Assays, Geochem:
Core, cuttings on file:
Drilling Problems, Depth to Water:
Other:
County: Pinal County, Arizona
Collo Elev: 1529 Kelly Beaching (KB)

9-12-74
DRILL RECORD

HOLE DESIGNATION Western Oil Field, Inc.
T 5 S
R 10 E
SEC 31 (center)

General File Reference: Pinal County General An-16A-0-0
Total Depth: 5142 ft
Postmineral thickness: 3310 ft
Premineral bedrock: Niobrara (bx)

Source of Information: Ariz.Oil & Gas Comm
Drill Contractor:
Company: Western Oil Field, Inc.
Date: 3-4-53 thru 5-27-53

Geologic Log: Operator's logs. (See file for except.)

Assays, Geochem:


Drilling Problems, Depth to Water:

Other:
County: Pinal County, Arizona
Collar Elevation: +470

9-12-74
RECOMMENDATION

We do not recommend further drilling or testing on this lease. The tremendous amount of recent valley fill plus absence of possible oil and gas producing formations and penetration of almost 100% detrital grano-diorite (quartz diorite) consisting of quartz, plagioclase feldspar, ferromagnesian minerals, (biotite, hornblende, and pyroxene) indicates basement complex or close proximity to basement complex which rules out the possibility of penetrating a sedimentary section necessary for oil and gas accumulation.

Dan Kralis
Co-Owner
Geologist-in-charge
FGA Flowline Gas Analysis
MGA Mud Gas Analysis
CGA Cuttings Gas Analysis

1995-2000 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, 60% plagioclase, 10% orthoclase, angular, 10% quartz, 20% chlorite, minor quantities of olivine, biotite and muscovite, hematitic stain on 20% of feldspar fragments, siliceous cement, bright to vitreous luster, good intergranular porosity; trace of caliche; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA Methane 0.0%, Ethane 0.0%, MGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 1995-96-10 minutes; 96-97-9 minutes; 97-98-8 minutes; 98-99-9 minutes; 99-2000-9 minutes.

2000-2005 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, angular fragments, bright to vitreous luster, siliceous cement, 70% plagioclase, 10% orthoclase, 5% quartz, 15% chlorite, minor quantities of olivine, biotite and muscovite, hematitic stain on 50% of feldspar fragments, good intergranular porosity; trace of caliche; no odor, no stain, no fluorescence, no with carbon tetrachloride; FGA Methane 0.0%, Ethane 0.0%, MGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2000-01-9 minutes; 01-02-5 minutes; 02-03-8 minutes; 03-04-10 minutes; 04-05-13 minutes.

Round trip at 2009; out of hole 9:45 A.M.; on bottom and drilling at 11:43 A.M.

Ran Bit #22, Hughes OWS, 9 7/8".

2005-2010 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, angular, bright to vitreous luster, siliceous cement, 80% plagioclase, 10% orthoclase, 10% chlorite, minor quantities of olivine, biotite, 75% of sample has hematite stain, good intergranular porosity; trace of caliche; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA Methane 0.0%, Ethane 0.0%, MGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2005-06-10 minutes; 06-07-11 minutes; 07-08-11 minutes; 08-09-17 minutes; 09-10-8 minutes.

2010-2015 Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, angular, bright to vitreous luster, siliceous cement, 80% plagioclase, 10% orthoclase, 10% chlorite, minor quantities of quartz, olivine and biotite, red hematitic stain predominant, good intergranular porosity; trace of caliche; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA Methane 0.0%, Ethane 0.0%, MGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2010-11-10 minutes; 11-12-5 minutes; 12-13-4 minutes; 13-14-5 minutes; 14-15-4 minutes.
2095-2100 Sandstone 100%, arkose, white, gray to pink, very coarse grain feldspar, loosely to unconsolidated, angular, subvitreous to vitreous luster, siliceous, limey cement, 60% plagioclase, 30% orthoclase, 10% quartz, strong trace of chlorite and hornblende, good intergranular porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2095-96-3 minutes; 96-97-13 minutes; 97-98-9 minutes; 98-99-5 minutes; 99-2100-7 minutes;

2100-2105 Sandstone 100%, arkose, white, gray to pink, very coarse grain feldspar, loosely to unconsolidated, angular, subvitreous to vitreous luster, siliceous, limey cement, 60% plagioclase, 30% orthoclase, 10% quartz, strong trace of chlorite and hornblende, good intergranular porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2100-01-6 minutes; 01-02-6 minutes; 02-03-5 minutes; 03-04-4 minutes; 04-05-4 minutes;

2105-2110 Sandstone 100%, arkose, white, gray to pink, very coarse grain feldspar, loosely to unconsolidated, angular, subvitreous to vitreous luster, siliceous, limey cement, 60% plagioclase, 30% orthoclase, 10% quartz, strong trace of chlorite and hornblende, good intergranular porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2105-06-5 minutes; 06-07-5 minutes; 07-08-6 minutes; 08-09-7 minutes; 09-10-5 minutes;

2110-2115 Sandstone 100%, arkose, white, gray to pink, very coarse grain feldspar, loosely to unconsolidated, angular, subvitreous to vitreous luster, siliceous, limey, siliceous cement; 60% plagioclase, 30% orthoclase, 10% quartz, strong trace of chlorite and hornblende, good intergranular porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%; BMGA Methane 0.0%, Ethane 0.0%; CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2110-11-6 minutes; 11-12-6 minutes; 12-13-5 minutes; 13-14-7 minutes; 14-15-8 minutes;

Twisted off pipe at 2117' at 2:06 a.m., waiting on overshot;

1:00 a.m., still waiting on overshot to arrive.
2675-2680 Sandstone 100%, arkose, white to gray, medium to coarse grained, angular, loosely consolidated, poorly cemented, angular, predominantly plagioclase; strong trace of quartz, chlorite, talc, hematite, serpentine; no odor, no strain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2675-26-21 minutes; 26-27-17 minutes; 27-28-16 minutes; 28-29-13 minutes; 29-30-19 minutes.

2680-2685 Sandstone 100%, arkose, white to gray, medium grain, loosely consolidated, poorly cemented, angular, predominantly plagioclase; strong trace of quartz, chlorite, talc, serpentine, hematite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2680-31-20 minutes; 31-32-13 minutes; 32-33-9 minutes; 33-34-10 minutes; 34-35-18 minutes.

Weight on bit: 20,000#.

2685-2690 Sandstone 100%, arkose, white to gray, medium grain, angular, loosely consolidated, poorly cemented, predominantly plagioclase; strong trace of quartz, chlorite, serpentine, talc, hematite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2685-36-20 minutes; 36-37-15 minutes; 37-38-21 minutes; 38-39-21 minutes; 39-40-17 minutes.

Weight on bit: 20,000#.

2690-2695 Sandstone 100%, arkose, white to gray, medium grains, angular, loosely consolidated, poorly cemented, predominantly plagioclase; strong trace of quartz, chlorite, serpentine, talc, hematite, calcite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2690-91-16 minutes; 91-92-10 minutes; 92-93-20 minutes; 93-94-19 minutes; 94-95-19 minutes.

Weight on bit: 20,000#.

2695-2700 Sandstone 100%, arkose, white to gray, medium grain, angular, consolidated, poorly cemented, predominantly plagioclase; strong trace of quartz, chlorite, serpentine, talc, hematite, calcite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2695-96-12 minutes; 96-97-12 minutes; 97-98-10 minutes; 98-99-17 minutes; 99-00-13 minutes.

2700-2705 Sandstone 100%, arkose, white to gray, medium grain, angular, loosely consolidated, poorly cemented, predominantly plagioclase; strong trace of quartz, chlorite, serpentine, talc, hematite, calcite; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2700-01-15 minutes; 01-02-15 minutes; 02-03-13 minutes; 03-04-11 minutes; 04-05-8 minutes.

8:00 a.m.

2705-2710 Sandstone 100%, arkose, white to gray, medium to coarse grained, angular, loosely consolidated, poorly consolidated, bright to subvitreous luster, 90% plagioclase, 10% chlorite, minor quantities of orthoclase; serpentine, hematite and calcite; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA, MGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2705-06-11 minutes; 06-07-11 minutes; 07-08-3 minutes; 08-09-11 minutes; 09-10-16 minutes.
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Round trip at 2713'; out of hole at 9:23 a.m.; run bit # 30, Hughes 8-S-R; 8 3/4'; reamed 7' to bottom; on bottom and drilling at 12:37 p.m.

2710-2715 Sandstone 100%, arkose, white to gray, coarse grained, medium soft, angular, bright to subvitreous luster, loosely consolidated, 70% plagioclase, 20% orthoclase, 5% hornblende, 5% chlorite; minor quantities of calcite, serpentine, biotite; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA, MGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2710-11-25 minutes; 11-17-15 minutes; 17-13-13 minutes; 13-1h-13 minutes; 14-15-20 minutes.

2715-2720 Sandstone 100%, arkose, white to gray, coarse grained, medium soft, angular, bright to subvitreous luster, loosely consolidated, 60% plagioclase, 20% orthoclase, 10% hornblende, 10% chlorite; minor quantities of calcite, serpentine and biotite; no odor, no stain, no fluorescence, no carbon tetrachloride cut; MCA, FGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2715-16-21 minutes; 16-17-21 minutes; 17-18-5 minutes; 18-19-15 minutes; 19-20-18 minutes.

4:00 p.m.

2720-2725 Sandstone (?) 100%, arkose, white to gray, pink, coarse grained, angular, subvitreous to vitreous, loosely consolidated, 50% plagioclase, 30% orthoclase; 10% quartz, 10% hornblende, chlorite and biotite; trace calcite, hematite and serpentine; no odor, no stain, no fluorescence, no carbon tetrachloride cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2720-21-34 minutes; 21-22-23 minutes; 22-23-20 minutes; 23-24-22 minutes; 24-25-23 minutes.

Weight on bit: 25,000#.

2725-2730 Sandstone 100%, arkose, white, gray, coarse grained, angular, subvitreous to vitreous, loosely consolidated, 70% plagioclase, 20% orthoclase, 10% hornblende, chlorite and biotite; trace calcite, hematite, serpentine; no odor, no stain, no fluorescence, no carbon tetrachloride cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2725-26-13 minutes; 26-27-16 minutes; 27-28-17 minutes; 28-29-15 minutes; 29-30-18 minutes.

2730-2735 Sandstone (?) 100%, arkose, white to gray, coarse grained, angular, loosely consolidated, 80% plagioclase, 10% orthoclase, 10% hornblende, chlorite and biotite; strong trace calcite, hematite and talc; no odor, no stain, no fluorescence, no carbon tetrachloride cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 2730-31-17 minutes; 31-32-11 minutes; 32-33-20 minutes; 33-34-20 minutes; 34-35-20 minutes.

Weight on bit: 23,000#.

Stopped drilling at 3:11 p.m.; connection at 2737'; resumed drilling at 8:17.

Mud Analysis: (9:30 p.m.) Viscosity 30, water loss 14, pH 6, Weight 8.6, Cake 1/32, Salt none.
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Round trip: 3200'; cut of hole 1:52 P.M.

4:00 P.M. April 7, 1953

New Bit #34, Hughes OWC; totco 11°.

On bottom 8:52 P.M.; total time 6 hours for trip and running.

3195-3200 Sandstone 100%, arkose, white to light gray, some pink, coarse grained, angular, vitreous to subvitreous luster, loosely consolidated, 60% plagioclase, 30% orthoclase, 10% chlorite, trace biotite and talc; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BGMA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3195-96-8 minutes; 96-97-10 minutes; 97-98-8 minutes; 98-99-13 minutes; 99-3200-17 minutes.

Drilling weight 20,000#.

3200-3205 Sandstone 100%, arkose, white, gray and pink, coarse grained, angular, loosely consolidated, vitreous to subvitreous luster, medium soft, 45% plagioclase, 40% orthoclase, 15% chlorite and talc; trace biotite; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BGMA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3200-01-10 minutes; 01-02-10 minutes; 02-03-14 minutes; 03-04-8 minutes; 04-05-11 minutes.

3205-3210 Sandstone 100%, arkose, white, gray, pink, green, black, coarse grained, angular, loosely consolidated, vitreous to subvitreous luster, medium soft, 55% plagioclase, 30% orthoclase, 15% chlorite and talc, trace biotite; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BGMA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3205-06-9 minutes; 06-07-11 minutes; 07-08-8 minutes; 08-09-8 minutes; 09-10-9 minutes.

Drilling weight 20,000#.

3210-3215 Sandstone 100%, arkose, white, gray, pink, green, black, medium to coarse grained, angular, loosely consolidated, vitreous to subvitreous luster, medium soft, 75% plagioclase, 10% orthoclase, 15% chlorite and talc, trace biotite; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BGMA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3210-11-8 minutes; 11-12-10 minutes; 12-13-7 minutes; 13-14-7 minutes; 14-15-9 minutes.

Stopped drilling 10:10 P.M.; connection 3216'; resumed drilling 10:17 P.M.

3215-3220 Sandstone 100%, arkose, white, light gray, pink, dark green, black, medium to coarse grained, angular, loosely consolidated, vitreous to subvitreous luster, medium soft, 75% plagioclase, 10% orthoclase, 15% chlorite, trace biotite and talc; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BGMA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3215-16-4 minutes; 16-17-5 minutes; 17-18-5 minutes; 18-19-9 minutes; 19-20-8 minutes.

12:00 Midnight
3495-3500 Talus Breccia Diorite 100%, gray to white, speckled with pink, green, black, angular fragments, loosely consolidated, hard, subvitreous luster; 80% plagioclase, 10% orthoclase, 10% chlorite, biotite; trace of olivine, hematite, calcite, limonite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3495-96-25 minutes; 96-97-26 minutes; 97-98-20 minutes; 98-99-22 minutes; 99-00-21 minutes.

3500-3505 Talus Breccia Diorite 100%, gray to white, speckled with pink, green and black, angular fragments, loosely consolidated, hard, subvitreous luster; 80% plagioclase, 10% orthoclase, 10% chlorite and biotite; trace of olivine, hematite, limonite, calcite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3500-01-27 minutes; 01-02-33 minutes; 02-03-21 minutes; 03-04-13 minutes; 04-05-21 minutes.

3505-3510 Talus Breccia Diorite 100%, gray to white, speckled with pink, green and black, angular fragments, loosely consolidated, hard, subvitreous luster; 80% plagioclase, 10% orthoclase, 10% chlorite and biotite; trace of olivine, hematite, limonite and calcite; no odor, no visible porosity, no stain, no fluorescence, no cut; MGA, BMGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 3505-06-21 minutes; 06-07-21 minutes; 07-08-24 minutes; 08-09-23 minutes; 09-10-21 minutes.

8:00 a.m. April 15, 1953.
from 3788.15 to 3787.15'; jetted pits.

3780-3785 Diorite Broccia 100%, gray, white, some green, medium to coarse grain, dull to vitreous luster, calcareous and hematitic cement, angular fragments, 60% plagioclase, 20% orthoclase, 20% chlorite and talc; no visible porosity; trace of hematite, calcite and olivine; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%; Drilling time: 3780-81-9 minutes; 81-82-6 minutes; 82-83-8 minutes; 83-84-6 minutes; 84-85-8 minutes.

Down from 7:21 to 7:27 P.M.; jetted pits.

3785-3790 Diorite Breccia 100%, white to gray, some green, medium to coarse grain, subvitreous to vitreous luster, calcareous and hematitic cement, angular fragments, 70% plagioclase, 20% orthoclase, 10% chlorite and talc; no visible porosity; no odor, no stain, subvitreous to vitreous luster, calcareous and hematitic cement, angular fragments, 70% plagioclase, 20% orthoclase, 10% chlorite and talc; trace of hematite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%; Drilling time: 3785-86-7 minutes; 86-87-8 minutes; 87-88-6 minutes; 88-89-7 minutes; 89-90-7 minutes.

3790-3795 Diorite Breccia 100%, white to gray, some green, medium to coarse grain, red, subvitreous to vitreous luster, calcareous and hematitic cement, angular fragments, 70% plagioclase, 20% orthoclase, 10% chlorite and talc; trace of hematite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%; Drilling time: 3790-91-6 minutes; 91-92-8 minutes; 92-93-7 minutes; 93-94-9 minutes; 94-95-9 minutes.

Drilling weight 20,000#.

3795-3800 Diorite Breccia 100%, white to gray, some green, red, medium to coarse grain, subvitreous to vitreous luster, calcareous and hematitic cement, angular fragments, 70% plagioclase, 20% orthoclase, 10% chlorite and talc; trace of hematite; no visible porosity; no odor, no stain, subvitreous to vitreous luster, calcareous cement, angular fragments, badly weathered feldspar in part, plagioclase 80%, orthoclase 20%, chlorite 10%, talc 10%; no visible porosity; no odor, no stain, subvitreous to vitreous luster, calcareous cement, angular fragments, badly weathered feldspar in part, plagioclase 80%, orthoclase 20%, chlorite 10%, talc 10%; MGA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%; Drilling time: 3795-96-10 minutes; 96-97-10 minutes; 97-98-9 minutes; 98-99-9 minutes; 99-3800-7 minutes.

3800-3805 Diorite Breccia 100%, white to gray, some green, red, medium to coarse grain, subvitreous to vitreous luster, calcareous and hematitic cement, angular fragments, 70% plagioclase, 20% orthoclase, 10% chlorite and talc; trace of hematite; no visible porosity; no odor, no stain, subvitreous to vitreous luster, calcareous cement, angular fragments, badly weathered feldspar in part, plagioclase 80%, orthoclase 20%, chlorite 10%, talc 10%; no visible porosity; no odor, no stain, subvitreous to vitreous luster, calcareous cement, angular fragments, badly weathered feldspar in part, plagioclase 80%, orthoclase 20%, chlorite 10%, talc 10%; MGA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%; Drilling time: 3800-01-8 minutes; 01-02-7 minutes; 02-03-8 minutes; 03-04-7 minutes; 04-05-8 minutes.

3805-3810 Diorite Breccia 100%, dark gray, white, gray, some green and pink, coarse grain, dull to subvitreous luster, calcareous cement, angular fragments, badly weathered feldspar in part, plagioclase 60%, orthoclase 20%, chlorite 10%, talc 10%; no visible porosity; no odor, no stain, subvitreous to vitreous luster, calcareous cement, angular fragments, badly weathered feldspar in part, plagioclase 60%, orthoclase 20%, chlorite 10%, talc 10%; MGA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%, BMA Methane 0.0%, Ethane 0.0%; Drilling time: 3805-06-7 minutes; 06-07-8 minutes; 07-08-11 minutes; 08-09-7 minutes; 09-10-8 minutes.
4295-4300 Diorite Breccia 100%, gray and white, some green and buff, medium hard, angular fragments, subvitreous to vitreous luster, calcareous cement, 60% plagioclase, 10% decomposed feldspar, 10% orthoclase, 10% chloride, 10% talc, no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4295-96-6 minutes; 96-97-3 minutes; 97-98-10 minutes; 98-99-8 minutes; 99-4300-12 minutes.

Drilling weight 26,000#.

4300-4305 Diorite Breccia 100%, white and gray, some green and pink, medium hard, angular fragments, calcareous cement, subvitreous to vitreous luster, 60% plagioclase, 20% chlorite, 10% talc, 10% orthoclase, minor quantities of hematite, no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4300-01-14 minutes; 01-02-7 minutes; 02-03-7 minutes; 03-04-12 minutes; 04-05-13 minutes.

6:00 P.M.

4305-4310 Diorite Breccia 100%, white and gray, some green and pink, coarse grain, angular fragments, calcareous cement, subvitreous to vitreous luster, 75% plagioclase, 10% orthoclase, 10% chlorite, 5% talc; trace of hematite; no visible porosity; no odor, stain fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4305-06-15 minutes; 06-07-22 minutes; 07-08-26 minutes; 08-09-18 minutes; 09-10-22 minutes.

Round trip at 4313'; stopped drilling at 8:40 P.M.; resumed drilling 12:15 A.M.; total time 3 hours 35 minutes.

Bit #53, Hughes CWS-R.

Drilling weight 22,000#.

4310-4315 Diorite Breccia 100%, white and gray, some green and pink, coarse grain, angular fragments, calcareous cement, subvitreous to vitreous luster, 70% plagioclase, 10% orthoclase, 10% chlorite, 10% talc; trace of olivine and hematite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4310-11-22 minutes; 11-12-25 minutes; 12-13-10 minutes; 13-14-22 minutes; 14-15-22 minutes.

4315-4320 Diorite Breccia 100%, white and gray, some green and pink, coarse grain, angular fragments, calcareous cement, subvitreous to vitreous luster, 70% plagioclase, 10% orthoclase, 10% chlorite, 10% talc; trace of olivine and hematite; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 4315-16-9 minutes; 16-17-16 minutes; 17-18-10 minutes; 18-19-16 minutes; 19-20-12 minutes.

Connection at 4324'; down from 2:53 to 3:03 A.M.
fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; MGA Methane 0.0%, Ethane 0.0%; CQA Methane 0.0%, Ethane 0.0%; Drilling time: 4485-86-20 minutes; 86-87-15 minutes; 87-88-20 minutes; 88-89-22 minutes; 89-90-17 minutes;

4490-4495 Diorite breccia 100%, dark gray, green, black and white, medium grained, medium hard, bright to vitreous luster, angular to tabular fragments, 50% plagioclase with chlorite and biotite inclusions, 20% biotite, 15% chlorite, 15% talc, no visible porosity; no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; MGA Methane 0.0%, Ethane 0.0%; CQA Methane 0.0%, Ethane 0.0%; Drilling time: 4490-91-21 minutes; 91-92-21 minutes; 92-93-16 minutes; 93-94-18 minutes; 94-95-16 minutes;

6:00 p.m.

4495-4500 Diorite breccia 100%, dark gray, white, green, black, medium grained, sub-vitreous to vitreous luster, angular fragments, 60% plagioclase, 20% biotite, 15% talc, 5% chlorite; trace of quartz and gabbro; no visible porosity; no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; MGA Methane 0.0%, Ethane 0.0%; CQA Methane 0.0%, Ethane 0.0%; Drilling time: 4495-96-22 minutes; 96-97-23 minutes; 97-98-23 minutes; 98-99-16 minutes; 99-4500-26 minutes;

Drilling weight 20,000#

Down from 6:43 to 6:50 p.m.

Stopped drilling at 7:42 p.m.; round trip at 4504'; resumed drilling at 11:55; slapsed time 4 hours and 13 minutes; Bit #57, CWS-R;

Connection at 4506', down from 12:11 to 12:20 a.m.

4500-4505 Diorite breccia 100%, white, green, black, dark gray, medium grain, sub-vitreous to vitreous luster, angular fragments, 50% plagioclase, 20% chlorite, 20% biotite, 10% talc, trace of calcite, quartz, and muscovite; no visible porosity; no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; MGA Methane 0.0%, Ethane 0.0%; CQA Methane 0.0%, Ethane 0.0%; Drilling time: 4500-01-28 minutes; 01-02-38 minutes; 02-03-13 minutes; 03-04-20 minutes; 04-05-34 minutes;

4505-4510 Diorite breccia 100%, white, green, black, dark gray, medium grain, sub-vitreous to vitreous luster, angular fragments, 70% plagioclase, 15% chlorite, 5% talc, 10% biotite, trace of calcite, muscovite and quartz; no visible porosity; no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; MGA Methane 0.0%, Ethane 0.0%; CQA Methane 0.0%, Ethane 0.0%; Drilling time: 4505-06-10 minutes; 06-07-7 minutes; 07-08-10 minutes; 08-09-14 minutes; 09-10-18 minutes;

Down from 2:22 to 2:26 a.m.

4510-4515 Diorite breccia 100%, white, gray, green, black, some pink, medium grain, hard, sub-vitreous to vitreous luster, angular fragments, 50% plagioclase, 20% orthoclase, 15% biotite, 10% chlorite, 5% talc, traces of calcite, muscovite and quartz; no visible porosity; no odor, no stain, no fluorescence, no cut; FGA Methane 0.0%, Ethane 0.0%; MGA Methane 0.0%, Ethane 0.0%; CQA Methane 0.0%, Ethane 0.0%; Drilling time: 4510-4515 minutes; 4515-4520 minutes; 4520-4525 minutes; 4525-4530 minutes; 4530-4535 minutes;
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Mud Analysis: (3:00 A.M. May 14, 1953) viscosity 31, weight 8.6, water loss 20.4, filter cake 1/32, pH 7, salt content—nil.

5110-5115 Diorite Breccia 90%, gray, white, some pink, black, and red, hard, subvitreous to vitreous luster, angular to subangular fragments, 40% plagioclase, 20% orthoclase, 10% talc, 10% serpentine, 5% chlorite, 5% quartz; shale 10%, gray, gray green, some red, fissile, flaky to chunky, soft to medium hard, slightly calcareous, no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5110-11-76 minutes; 11-12-37 minutes; 12-13-28 minutes; 13-14-47 minutes; 14-15-48 minutes.

6:00 A.M. May 14, 1953

5115-5120 Diorite Breccia 100%, gray and white, some black, green and red, medium hard, vitreous luster, angular to subrounded fragments, calcareous, 60% plagioclase, 15% biotite, 15% orthoclase, 10% talc, traces of quartz and shale; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5115-16-45 minutes; 16-17-40 minutes; 17-18-80 minutes; 16-19-41 minutes; 19-20-45 minutes.

Drilling weight 25,000#.

Round trip at 5122'; out of hole 10:00 A.M.; reamed 45' to bottom; on bottom and drilling 3:10 P.M.; total time 5 hours 10 minutes.

Ran Bit #78, Hughes, W7R, 7 7/8".

5120-5125 Diorite Breccia 100%, gray and white, some black, green and red, medium hard, vitreous luster, angular to subrounded fragments, calcareous, 60% plagioclase, 15% orthoclase, 10% biotite, 10% talc, 5% hematite and limonite; traces shale and quartz; no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5120-21-56 minutes; 21-22-23 minutes; 22-23-29 minutes; 23-24-21 minutes; 24-25-51 minutes.

6:00 P.M. May 14, 1953

Down from 6:23 to 6:46 P.M.; jet pits.

5125-5130 Granodiorite Breccia 100%, white, clear, gray, some black, green, pink and red, hard, vitreous luster, angular fragments, calcareous, 40% plagioclase, 20% orthoclase, 20% quartz, 10% biotite, 5% chlorite, 5% talc; traces of hematite, no visible porosity; no odor, no stain, no fluorescence, no cut; MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5125-26-45 minutes; 26-27-40 minutes; 27-28-49 minutes; 28-29-56 minutes; 29-30-45 minutes.

5130-5135 Diorite Breccia 100%, white, clear, gray, some black, green, pink and red, vitreous luster, hard, angular fragments, calcareous, 50% plagioclase, 15% orthoclase, 10% quartz, 10% biotite, 10% talc, 5% chlorite, no visible porosity; no odor, no stain, no fluorescence, no cut;
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MGA Methane 0.0%, Ethane 0.0%, BMGA Methane 0.0%, Ethane 0.0%, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5130-31-52 minutes; 31-32-49 minutes; 32-33-36 minutes; 33-34-59 minutes; 34-35-66 minutes.

Mud Analysis: (3:00 A.M. May 15, 1953) viscosity 33, weight 8.6, water loss 18.8, filter cake 1/32, pH 7, salt content—nil.

Drilling weight 30,000#.

Round trip at 5136'; stopped drilling 3:43 A.M.

6:00 A.M. May 15, 1953.

Ran bit # 79, Hughes OWSR-7 7/3"; on bottom and drilling at 8:20 a.m.

Connection at 51100'; down from 12:37 p.m. to 12:44 p.m.

5135-5140 Diorite Breccia 100%, gray and white, some black, green, and red, hard, subvitreous to vitreous luster, angular to subrounded fragments, calcarceous, 60% plagioclase, 15% orthoclase, 10% biotite, 10% quartz, 5% talc, trace of chlorite and hematite, no visible porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut; FGA Methane 0.0%, MGA, CGA Methane 0.0%, Ethane 0.0%; Drilling time: 5135-36-59 minutes; 36-37-83 minutes; 37-38-75 minutes; 38-39-83 minutes; 39-40-43 minutes.

Round trip at 5141'; out of hole at 4:02 p.m.; on bottom and drilling; total time elapsed: 4 hours, 1 minute; bit # 80, Hughes W7R.

Stopped drilling at 8:36 p.m.; waiting for orders.

Depth—5142'; Depth correction 5141' (trip)—5142'.

Total Depth ----- 5142'.
**Driller's Log**

<table>
<thead>
<tr>
<th>DATE</th>
<th>DEPTHS</th>
<th>FORMATION</th>
<th>REMARKS</th>
</tr>
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<tbody>
<tr>
<td>3-6-53</td>
<td>0-140</td>
<td>Surface sand</td>
<td>Spudded 8:00 a.m.</td>
</tr>
<tr>
<td></td>
<td>140-313</td>
<td>Water sand</td>
<td>Run 385'-10 3/4&quot; casing, Cement at 397' w/100 sacks.</td>
</tr>
<tr>
<td>3-7-53</td>
<td>313-376</td>
<td>Red beds</td>
<td>Plug down at 9:00 p.m.</td>
</tr>
<tr>
<td>3-8-53</td>
<td>376-402</td>
<td>Red beds</td>
<td>9 7/8&quot; bit, Drilled plug at 9:00 p.m.</td>
</tr>
<tr>
<td>3-11-53</td>
<td>376-761</td>
<td>Red beds</td>
<td>Run 808'-10 3/4&quot; casing, Cement at 795' w/200 sacks.</td>
</tr>
<tr>
<td>3-12-53</td>
<td>761-785</td>
<td>Gravel</td>
<td>Plug down at 10:30 a.m.</td>
</tr>
<tr>
<td>3-14-53</td>
<td></td>
<td></td>
<td>W.O.C.</td>
</tr>
<tr>
<td>3-15-53</td>
<td></td>
<td></td>
<td>W.O.C.</td>
</tr>
<tr>
<td>3-16-53</td>
<td></td>
<td></td>
<td>9 7/8&quot; bit.</td>
</tr>
<tr>
<td>3-17-53</td>
<td>795-925</td>
<td>Sand and gravel</td>
<td>Fishing for D.P.</td>
</tr>
<tr>
<td>3-18-53</td>
<td>925-946</td>
<td>Sandy lime</td>
<td>Fishing</td>
</tr>
<tr>
<td>3-19-53</td>
<td>946-1115</td>
<td>Sand and shale</td>
<td>Twisted off-fishing</td>
</tr>
<tr>
<td>3-20-53</td>
<td>1115-1263</td>
<td>Sand and shale</td>
<td>Fishing</td>
</tr>
<tr>
<td>3-21-53</td>
<td>1263-1297</td>
<td>Sand and shale</td>
<td>Red fish</td>
</tr>
<tr>
<td>3-22-53</td>
<td>1297-1323</td>
<td>Sand</td>
<td>Remarks 120' to bottom</td>
</tr>
<tr>
<td>3-23-53</td>
<td>1323-1378</td>
<td>Sand and shale</td>
<td></td>
</tr>
<tr>
<td>3-24-53</td>
<td>1378-1433</td>
<td>Sand and lime</td>
<td></td>
</tr>
<tr>
<td>3-25-53</td>
<td>1433-1520</td>
<td>Sand and shale</td>
<td></td>
</tr>
<tr>
<td>3-26-53</td>
<td>1520-1574</td>
<td>Sand and shale</td>
<td></td>
</tr>
<tr>
<td>3-27-53</td>
<td>1574-1648</td>
<td>Sand and shale</td>
<td></td>
</tr>
<tr>
<td>3-28-53</td>
<td>1648-1955</td>
<td>Sand and shale</td>
<td></td>
</tr>
<tr>
<td>3-29-53</td>
<td>1955-2117</td>
<td>See Geological</td>
<td></td>
</tr>
<tr>
<td>3-30-53</td>
<td>2117-2220</td>
<td></td>
<td>Report 1995 to T.D.</td>
</tr>
<tr>
<td>3-31-53</td>
<td>2220-2331</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-1-53</td>
<td>2331-2458</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-2-53</td>
<td>2458-2578</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-3-53</td>
<td>2578-2678</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-4-53</td>
<td>2678-2743</td>
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<td></td>
</tr>
<tr>
<td>4-5-53</td>
<td>2743-2835</td>
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</tr>
<tr>
<td>4-6-53</td>
<td>2835-2936</td>
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</tr>
<tr>
<td>4-7-53</td>
<td>2936-3074</td>
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<td></td>
</tr>
<tr>
<td>4-8-53</td>
<td>3074-3125</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-9-53</td>
<td>3125-3221</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-10-53</td>
<td>3221-3283</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-11-53</td>
<td>3283-3326</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-12-53</td>
<td>3326-3345</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-13-53</td>
<td>3345-3406</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-14-53</td>
<td>3406-3456</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-15-53</td>
<td>3456-3500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-16-53</td>
<td>3500-3533</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-17-53</td>
<td>3533-3570</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-18-53</td>
<td>3570-3710</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-19-53</td>
<td>3710-3817</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-20-53</td>
<td>3817-3970</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-21-53</td>
<td>3970-4096</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-22-53</td>
<td>4096-4165</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### GEOLOGICAL REPORT OF

##### FORMATIONS PENETRATED

<table>
<thead>
<tr>
<th>Depth Range</th>
<th>Formation 1</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-2005</td>
<td>Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, good intergranular porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.</td>
<td></td>
</tr>
<tr>
<td>2005-2050</td>
<td>Sandstone 100%, arkosic, gray, medium to coarse grained, medium soft, loosely consolidated, angular; red hematite stain; good intergranular porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.</td>
<td></td>
</tr>
<tr>
<td>2050-2115</td>
<td>Sandstone 100%, gray, arkosic, white and pink; medium to very coarse grained feldspar and some quartz, good intergranular porosity; no odor, no stain, no fluorescence, no cut.</td>
<td></td>
</tr>
<tr>
<td>2115-2135</td>
<td>Sandstone 100%, arkose, white to gray; fine to very coarse grained feldspar, loosely unconsolidated, angular; good intergranular porosity; no odor, no stain, no fluorescence, no cut.</td>
<td></td>
</tr>
<tr>
<td>2135-2155</td>
<td>Sandstone 100%, arkose, white to gray; fine to coarse grained; medium soft; loosely consolidated, angular; no odor, no stain, no fluorescence, no carbon tetrachloride cut.</td>
<td></td>
</tr>
<tr>
<td>2155-2160</td>
<td>Sandstone 100%, arkose, white to gray; fine to coarse grained, medium soft; loosely consolidated, angular; copper and iron staining predominant; traces of free copper imbedded in calcite; no odor, no fluorescence, no carbon tetrachloride cut.</td>
<td></td>
</tr>
<tr>
<td>2160-2180</td>
<td>Sandstone 100%, arkose, white to gray; fine to coarse grained; medium soft; loosely consolidated, angular; no odor, no stain, no fluorescence, no carbon tetrachloride cut.</td>
<td></td>
</tr>
</tbody>
</table>

---

W.O. Orders

Dismantling rig
2180-2275 Sandstone 100%, arkose, clear, white, gray with pink less common, fine to coarse grained, loosely consolidated, angular, probably fairly good intergranular porosity; no odor, no stain, no fluorescence, no cut.

2275-2325 Sandstone 100%, arkose, white to gray, medium to coarse grained, medium soft, angular, loosely consolidated; no odor, no stain, no fluorescence, no cut.

2325-2375 Sandstone 100%, arkose, white, gray to pink, hard, coarse grain, loosely to unconsolidated, no odor, no stain, no fluorescence, no cut.

2375-2550 Sandstone 100%, arkose, white to gray, medium to coarse grained, loosely consolidated, angular, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2550-2660 Sandstone 100%, arkose, gray, white, pink, coarse grained, angular, loosely consolidated, no visible but probable porosity; no odor, no stain, no fluorescence, no cut.

2660-2665 Sandstone 70%, arkose, white, gray, pink, coarse grained, angular, medium soft, fairly well consolidated, serpentine 30%, light green to gray, medium soft, no porosity; no odor, no stain, no fluorescence, no cut.

2670-2675 Sandstone 90%, arkose, white, gray to pink, medium to coarse grained, medium soft, angular, loosely consolidated, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2675-2835 Sandstone 100%, arkose, white, pink to gray, medium to coarse grained, medium soft, angular, loosely consolidated; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2835-2855 Sandstone 100%, arkose, white to gray, medium grain, angular, loosely consolidated, no odor, no stain, no fluorescence, no cut.

2855-2920 Sandstone 100%, arkose, white to light gray with pink less common, coarse to very coarse grained, angular, loosely consolidated; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2920-2925 Sandstone 100%, arkose, white to light gray with pink less common, coarse to very coarse grained, angular, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

2925-3015 Sandstone 100%, arkose, white to gray, medium to very coarse, angular, no odor, no stain, no fluorescence, no cut, no visible porosity.

3015-3040 Sandstone 100%, arkose, white to light gray with some pink, coarse grained, angular, good intergranular porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3040-3075 Sandstone 100%, arkose, white to gray, coarse grain, loosely consolidated, no odor, no stain, no fluorescence, no cut, no visible porosity.
3070-3090 Sandstone 100%, arkose, white to gray, fine to medium grained, angular, loosely consolidated, medium soft, no visible porosity, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3090-3125 Sandstone 100%, arkose, white to light gray, with pink less common, angular, loosely consolidated, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3125-3165 Sandstone 100%, arkose, white to gray, coarse grain, angular, loosely consolidated, no visible porosity, no odor, no stain, no fluorescence, no cut.

3165-3180 Sandstone 100%, arkose, white and gray, medium to coarse grained, medium soft, angular, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3180-3195 Sandstone 100%, arkose, white and gray, medium to coarse grained, angular, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3195-3205 Sandstone 100%, arkose, white to light gray, some pink, coarse grained, angular, loosely consolidated, no odor, no stain, no fluorescence, no cut.

3205-3220 Sandstone 100%, arkose, white, gray, pink, green, black, coarse grained, angular, loosely consolidated, medium soft, no odor, no stain, no fluorescence, no cut.

3220-3260 Sandstone 80%, arkose, white, gray, pink, green, black, coarse grained, medium soft, loosely consolidated, angular, no odor, no stain, no fluorescence, no cut.

3260-3275 Sandstone 60%, arkose, gray, white to pink, coarse grained, medium soft, loosely consolidated, angular, no odor, no stain, no fluorescence, no cut.

3275-3310 Sandstone 10%, arkose, white, light gray, green black, some pink and yellow, medium to coarse grained, angular, loosely consolidated, no odor, no stain, no fluorescence, no cut with carbon tetrachloride cut.

3310-3355 Talus Breccia 100%, diorite, light gray to light pink, with green and black, equi-granular texture, angular fragments, hard, no visible but probably interstitial porosity, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3355-3385 Diorite Breccia 100%, gray to white, some green and black, angular fragments, loosely consolidated, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3385-3395 Siltstone 100%, red and brown, medium soft, dull luster, chunky arenaceous, very micaceous, hematite, slightly calcareous, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

3390-3395 Talus breccia 95%, diorite, light gray to white, with green and black ferro-magnesium minerals, angular fragments, hard, loosely consolidated, no visible but probable interstitial porosity; Shale 5%, red, pink and spotted with black ferro-magnesium minerals, siltstone and claystone sized, arenaceous, no odor, no stain, no fluorescence, no cut.
Talus breccia 100%, diorite, light gray, white with some pink, green and black, angular fragments loosely consolidated, no visible but probable interstitial porosity; no odor, no stain, no fluorescence, no cut.

Diorite Breccia 100%, white to gray, medium to coarse grained, some green and black, bright to vitreous luster, angular, loosely consolidated, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

Strongly Altered Feldspar 100%, light to dark gray with some green, pink and black, very micaceous, trace pyritic, medium soft, angular, loosely consolidated, granular; poor interstitial porosity; no odor, no stain, no fluorescence, no cut.

Talus Breccia 100%, white to gray, medium to coarse grained, hard, angular fragments loosely consolidated, no odor, no stain, no fluorescence, no cut.

Talus Breccia 100%, diorite, light gray to white, some pink, green and black, angular fragments, loosely consolidated, hard, no visible but probably interstitial porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

Diorite Breccia 100%, white, gray, some pink, medium to coarse grained, some green and black, angular fragments, loosely consolidated, no odor, no stain, no fluorescence, no cut.

Diorite Breccia 100%, white and gray, medium to coarse grained, some green and black, hard, angular fragments, no visible porosity; no odor, no stain, no fluorescence, no cut.

Diorite breccia 100%, white and gray, some red, green and black, medium to coarse grained, hard, angular fragments, some iron staining, no odor, no stain, no fluorescence, no carbon tetrachloride cut.

Diorite Breccia 100%, white and gray, some green, brown, and black, medium to coarse grained, medium soft, angular fragments, badly decomposed feldspar in appreciable quantity, much iron staining, no odor, no stain, no fluorescence, no cut.

Quartz-Diorite Breccia 100%, white and gray, some green and yellow, hard, angular fragments, no visible porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.

Brecchia 100%, decomposed feldspar and pyroxenes, green, medium soft, dull luster, moderately calcareous, chunky, angular, minor quantity of diorite breccia; no odor, no stain, no fluorescence, no cut.

Diorite Breccia 100%, green and white, medium hard, angular fragments, no odor, no stain, no fluorescence, no cut.

Syenite Breccia 100%, light salmon pink, some white, gray, green, and black, angular, chunky fragments, no visible porosity; no odor, no stain, no fluorescence, no cut.

Diorite Breccia 100%, white, gray, some pink, black and green, medium hard, angular fragments, no odor, no stain, no fluorescence, no cut.

Shale 95%, gray, green, some red, soft, chunky, dull luster, slightly silty, calcareous; Diorite Breccia 100%, gray, green and white, some black and red, hard, flaky to angular fragments, no visible porosity; no odor, no stain, no fluorescence, no carbon tetrachloride cut.
Diorite Breccia 90%, white, pink, some green, black and red, hard, angular, flaky to chunky frags; no visible porosity; no odor, no stain, no fluorescence, no cut.

Diorite Breccia 100%, white, gray, some pink, green, black, red, hard, angular, chunky, no visible porosity; no odor, no stain, no fluorescence, no cut.

Granodiorite Breccia 100%, white, clear, gray, some black, green, pink and red, hard, vitreous luster, angular fragments, no visible porosity; no odor, no stain, no fluorescence, no cut.

Diorite Breccia 100%, white, clear, gray, some black, green, pink, and red, hard, angular fragments, no visible porosity; no odor, no stain, no fluorescence, no cut.
**DRILL RECORD**

**HOLE DESIGNATION** Hamblet 74-1

**T** 85  **R** 8E  **SEC** 2  **(Lea County)**  

---

**General File Reference:** Bernal County General, Aa-16 A 0-0  

**Total Depth:** 10,179 ft.  

**Postmineral thickness:** 0 - 10,055 ft.  

**Premineral bedrock:**  
Granite (Lesche Mtn).  

**Source of Information:**  
Amoco Oil & Gas Co., Inc.  

**Drill Contractor:**  
Lafferty Drilling Co.  

**Company:**  
Hamble Oil & Refining Co.  

**Date:**  
Spudded 6-8-72  
Terminated 7-14-72  

**Geologic Log:**  
Operator's log.  

**Assays, Geochem:**  
None  

**Core, cuttings on file:**  
Core No. 1 from 10,133 to 10,149 ft. — 16' recovery.  
Core No. 2 from 10,175 to 10,179 ft. — recovered 3' of pay and minor.  
Sample probe's cutting, probably no file with ABM 7 408 Gec.  

**Drilling Problems, Depth to Water:**  

**Other:**  
*Killer Elevation* 1580 ft.  
Bernal County, Arizona  

**Other log:** 125, ER-84C series, core logs 9, 4794-W  

"Grants Wash" from 9-57-98 to 9-57-98 with sample at 9750-9850 having yellow gain of middle to late Miocene to Pleistocene age.  

9-12-74
### WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

**Operator:** Humble Oil & Refining Company  
**Address:** P. O. Box 1600, Midland, Texas 79701

**Federal, State or Indian Lease Number or name of lessor if fee lease:** State (74) (State Lease No. 13774)

### DESCRIPTION OF WELL AND LEASE

<table>
<thead>
<tr>
<th>Field &amp; Reservoir</th>
<th>Field &amp; Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stratigraphic Test Hole</td>
<td>Stratigraphic Test Hole</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,980' FSL &amp; 1,980' FEL</td>
<td>1,980' FEL</td>
</tr>
</tbody>
</table>

**Sec. TWP-Range or Block & Survey:** Section 5 T-8-S, R-8-E

**Date spudded:** 6-8-72  
**Date total depth reached:** 7-14-72

### CASING RECORD

<table>
<thead>
<tr>
<th>Size hole drilled</th>
<th>Size casing set</th>
<th>Weight (lb./ft.)</th>
<th>Depth set</th>
<th>Sacks cement</th>
<th>Amt. pulled</th>
</tr>
</thead>
<tbody>
<tr>
<td>20&quot;</td>
<td>16&quot;</td>
<td>65#</td>
<td>37'</td>
<td>20 sx</td>
<td>None</td>
</tr>
<tr>
<td>13-3/4&quot;</td>
<td>10-3/4&quot;</td>
<td>40.5#</td>
<td>2,005'</td>
<td>914 sx</td>
<td>None</td>
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</table>

### TUBING RECORD

<table>
<thead>
<tr>
<th>Size</th>
<th>Depth set</th>
<th>Packer set at</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>in.</td>
<td>ft.</td>
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### LINER RECORD

<table>
<thead>
<tr>
<th>Size</th>
<th>Top</th>
<th>Bottom</th>
<th>Sacks cement</th>
<th>Screen (ft.)</th>
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</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>ft.</td>
<td>None</td>
<td>ft.</td>
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### PERFORATION RECORD

<table>
<thead>
<tr>
<th>Number per ft.</th>
<th>Size &amp; type</th>
<th>Depth Interval</th>
<th>Am't. &amp; kind of material used</th>
<th>Depth Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>None</td>
<td></td>
<td></td>
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</tbody>
</table>

**INITIAL PRODUCTION**

**Date of first production:** 6-8-72  
**Producing method** (indicate if flowing, gas lift or pumping—If pumping, show size & type of pump): Dry Hole

<table>
<thead>
<tr>
<th>Choke size</th>
<th>Oil prod. during test bbls.</th>
<th>Gas prod. during test MCF</th>
<th>Water prod. during test bbls.</th>
<th>Oil gravity (*) API (Corr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

**Tubing pressure:**  
**Casing pressure:**  
**Calculated rate of Production per 24 hrs.**  
**Gas:** bbls.  
**Gas:** bbls.  
**Water:** bbls.  
**Gas-oil ratio:**

**Disposition of gas (state whether vented, used for fuel or sold):**

---

### CERTIFICATE

I, the undersigned, under the penalty of perjury, state that I am the Proration Specialist of the Humble Oil & Refining Company, and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date: September 11, 1972

**Signature:** A. L. Clemmer

---

**ORIG.: OGCC - State of Arizona**

**RECEIVED:** SEP 13 1972

**STATE OF ARIZONA**

**OIL & GAS CONSERVATION COMMISSION**

**Well Completion or Recompletion Report and Well Log**

**Form No. 4**

**File One Copy**
DETAIL OF FORMATIONS PENETRATED

<table>
<thead>
<tr>
<th>Formation</th>
<th>Top</th>
<th>Bottom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface</td>
<td>0</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Sd. &amp; Gravel</td>
<td>46</td>
<td>526</td>
<td></td>
</tr>
<tr>
<td>Clay &amp; Shale</td>
<td>526</td>
<td>1,690</td>
<td></td>
</tr>
<tr>
<td>Anhy Salt &amp; Sh.</td>
<td>1,690</td>
<td>2,170</td>
<td></td>
</tr>
<tr>
<td>Anhy &amp; Shale</td>
<td>2,170</td>
<td>4,600</td>
<td></td>
</tr>
<tr>
<td>Anhy, Sh. &amp; Salt</td>
<td>4,600</td>
<td>5,010</td>
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</tr>
<tr>
<td>Gyp</td>
<td>5,010</td>
<td>5,693</td>
<td></td>
</tr>
<tr>
<td>Anhy &amp; Shale</td>
<td>5,693</td>
<td>6,455</td>
<td></td>
</tr>
<tr>
<td>Anhy &amp; Ash</td>
<td>6,455</td>
<td>6,818</td>
<td></td>
</tr>
<tr>
<td>Anhy &amp; Shale</td>
<td>6,818</td>
<td>7,044</td>
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</tr>
<tr>
<td>Anhy &amp; Chert</td>
<td>7,044</td>
<td>7,525</td>
<td></td>
</tr>
<tr>
<td>Anhy, Sh. &amp; Tuff</td>
<td>7,525</td>
<td>8,250</td>
<td></td>
</tr>
<tr>
<td>Sd., Salt &amp; Anhy</td>
<td>8,250</td>
<td>8,482</td>
<td></td>
</tr>
<tr>
<td>Conglomerate</td>
<td>8,482</td>
<td>8,943</td>
<td></td>
</tr>
<tr>
<td>Volc. Tuff</td>
<td>8,943</td>
<td>10,055</td>
<td></td>
</tr>
<tr>
<td>Granite</td>
<td>10,055</td>
<td>10,179</td>
<td></td>
</tr>
</tbody>
</table>

Core No. 1 from 10,133' to 10,144', no recovery.
Core No. 2 from 10,175' to 10,179', core bbl. jammed, rec. 3' of core. (Rec 3/12' of Gypsum Gravels)

DST No. 1 from 8,640' to 8,710', opened tool for 10 mins., IF period very weak blow, packer failed after 45 mins, tool was open 15 minutes of final flow period.

DST No. 2 from 8,766' to 8,840'
DST No. 3 from 8,683' to 8,780'
DST No. 4 from 8,550' to 8,650'

Dry Hole - Plugged and Abandoned on July 27, 1972.

* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

INSTRUCTIONS:
Attach drillers log or other acceptable log of well.
This Well Completion or Recompletion report and well log shall be filed with the State of Arizona Oil & Gas Conservation Commission not later than thirty days after project completion.

Form No. 4
APPLICATION TO ABANDON AND PLUG

FIELD: Wildcat - Core Test

OPERATOR: Humble Oil & Refining Company
ADDRESS: P. O. Box 1600, Midland, Texas 79701

Federal, State, or Indian Lease Number: State (74) (State Lease No. 13774)
WELL NO.: 1

SURVEY: T-8-S, R-8-E
SECTION: 2
COUNTY: Pinal

LOCATION: 1,980' FSL & 1,980' FEL

TYPE OF WELL: Dry Hole
ALLOWABLE (if assigned): 

TOTAL DEPTH: 10,179'

LAST PRODUCTION TEST
OIL: (Bbls.) 
WATER: (Bbls.) 
GAS: (MCF) 
DATE OF TEST:

PRODUCING HORIZON: Dry Hole
PRODUCING FROM: 
TO:

1. COMPLETE CASING RECORD: 10-3/4" 40.5# H-40 STC Casing (1,988') set at 2,005',
cemented w/664 sx of Class "C" Cement w/8% gel and 2% Calc., followed w/250
sx Class "C" cement w/2% Calc., circ. 190 barrels cement.

2. FULL DETAILS OF PROPOSED PLAN OF WORK: Plug and abandon well as follows: Plug No. 1,
8,000' to 8,100', 55 sacks cmt., Class "B"; Plug No. 2, 4,500' to 4,600', 55 sacks cmt.,
Class "B"; Plug No. 3, 1,955 to 2,055', 75 sacks cmt., Class "B"; Plug No. 4, 0' to 20',
10 sacks cmt., Class "B". Install dry hole marker with the following information:
Humble Oil & Refining Company, State (74), Well No. 1, NW SW Sec. 2, T8S, R8E, State
Drilling Permit No. 583. Veral approval was granted to P&A as shown above, this will
confirm our telephone request.

If well is to be abandoned, does proposed work conform with requirements of Rule 202? Yes . . . . If not, outline
proposed procedure above.

DATE COMMENCING OPERATIONS: July 26, 1972

NAME OF PERSON DOING WORK: Humble Oil & Refining Company
ADDRESS: P. O. Box 1600, Midland, Texas 79701

CORRESPONDENCE SHOULD BE SENT TO: Humble Oil & Refining Company

Orig. & cc: OGCC - State of Arizona
cc: Drilling Section
cc: Central File
cc: D. L. Clemmer

Date Approved: 

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Abandon and Plug
File Two Copies

Permit No. 583

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
RECEIVED
Form No. 9

JUL 31 1972

O & G CONS. COMM.
**PLUGGING RECORD**

**Operator**
Humble Oil & Refining Company

**Address**
P. O. Box 1600, Midland, Texas 79701

**Federal, State, or Indian Lease Number, or lessor's name if fee lease.**
State Lease No. 13774

**Well No.**
1

**Field & Reservoir**
Wildcat - Core Test

**Location of Well**
1,980' PSL & 1,980' FEL

**Application to drill this well was filed in name of**
Humble Oil & Ref. Co.

**Date plugged:**
July 27, 1972

**Total depth**
10,179

**Character of well at completion (initial production):**
Dry

**Amount well producing when plugged:**

<table>
<thead>
<tr>
<th>Formation</th>
<th>Depth Interval</th>
<th>Fluid Content</th>
<th>Depth of Plugs Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>160 - 1100</td>
<td>None</td>
<td>None - Dry Hole</td>
</tr>
<tr>
<td></td>
<td>4500 - 4600</td>
<td>None</td>
<td>None - Dry Hole</td>
</tr>
<tr>
<td></td>
<td>1955 - 2055</td>
<td>None</td>
<td>None - Dry Hole</td>
</tr>
</tbody>
</table>

**Date plugged:**
July 27, 1972

**Total depth**
10,179

**Character of well at completion (initial production):**
Dry

**Amount well producing when plugged:**

<table>
<thead>
<tr>
<th>Formation</th>
<th>Depth Interval</th>
<th>Fluid Content</th>
<th>Depth of Plugs Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>160 - 1100</td>
<td>None</td>
<td>None - Dry Hole</td>
</tr>
<tr>
<td></td>
<td>4500 - 4600</td>
<td>None</td>
<td>None - Dry Hole</td>
</tr>
<tr>
<td></td>
<td>1955 - 2055</td>
<td>None</td>
<td>None - Dry Hole</td>
</tr>
</tbody>
</table>

**CASING RECORD**

<table>
<thead>
<tr>
<th>Size pipe</th>
<th>Put in well (ft.)</th>
<th>Pulled out (ft.)</th>
<th>Left in well (ft.)</th>
<th>Give depth and method of parting casing (shot, ripped, etc.)</th>
<th>Packers and shoes</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-3/4&quot;</td>
<td>*1,988'</td>
<td>None</td>
<td>1,988'</td>
<td><strong>Guide Shoe &amp; Float Collar</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*Set at 2,005'</td>
<td></td>
</tr>
</tbody>
</table>

**Names and Addresses of Adjacent Lease Operators or Owners of the Surface**

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Direction from this well:</th>
</tr>
</thead>
<tbody>
<tr>
<td>William E. Housey</td>
<td>Eloy, Arizona</td>
<td>North - Sec. 35, T7S, R8E</td>
</tr>
<tr>
<td>Heirs of L. L. Page</td>
<td>San Francisco, California</td>
<td>West - Sec. 3, T8S, R8E</td>
</tr>
</tbody>
</table>

Humble is the Operator of the remainder of the Adjacent leases.

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

**CERTIFICATE:** I, the undersigned, under the penalty of perjury, state that I am the _Div. Drilling Operations Supt._ of the **Humble Oil & Refining Company,_ company, and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date: July 28, 1972

Signature: [Signature]

**STATE OF ARIZONA**

**OIL & GAS CONSERVATION COMMISSION**

**Plugging Record**

**File One Copy**

**Form No. 10**
DRILL RECORD

HOLE DESIGNATION: Humble State 14-1

T 35 R 11W
SEC 25 36 (center)

20 Miles NW of Sentinel
General File Reference: Yuma County General, Aa-25 A.0.0

Total Depth: 2,653 ft.

Postmineral thickness:
2,550 1,000

Premineral bedrock:
Granite (guess)

Source of Information:
Yuma County Records

Drill Contractor:
Lafland Drilling Co

Company:
Humble Oil & Refining Co

Date:
Spudded 7-31-72
Completed 8-10-72

Geologic Log:

Assays, Geochem:
None.

Core, cuttings on file:
Lab. on file with AGC.

Drilling Problems, Depth to Water:

Other:

'Lower Elevation 703 /f
Yuma County, Arizona
Other Logs: Gamma Ray, BHG Series, Induction, Compress. Density, Neutron Density.'
Well Name: HUMBLE OIL & REFINING CO. WELL NO. 1 STATE (14)

Location: NW/SE Sec. 25 Twp 3S Range 11W Footage 1980' FSL - 1980 FEL
Elev: 783' Gr 797' KB Date 7-31-72 Completed P&A Abandon 8-11-72 Total Depth 2653'

Contractor: Loffland Drilling Company

Casing Size Depth Cement
16" 42' 18 sx
10 3/4" 1290' 725 sx

Production Horizon
Initial Production

REMARKS: Dry Hole

Logs Neutron Porosity-2
Applic. to Plug X Plugging X Record X Completion X

Sample Log Lith log
Sample Descript.
Sample Set #1723
Core Analysis
DSTs

Water well accepted by

Bond Co.
& No. THE AMERICAN INSURANCE COMPANY - BOND NO. 5-10-11-58

Bond Am't $ 25,000 Cancelled Date
Filing Receipt 2923 Dated 7-14-72 Well Book X
API No. 02-027-20005 Loc. Plat X Dedication 80 acres

Permit Number Date Issued 7-14-72
**WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG**

**DESIGNATION TYPE OF COMPLETION:**

- [ ] New Well
- [ ] Work-Over
- [ ] Deepen
- [ ] Plug Back
- [ ] Same Reservoir
- [ ] Different Reservoir
- [ ] Oil
- [ ] Gas
- [ ] Dry

**DESCRIPTION OF WELL AND LEASE**

**Operator:** Humble Oil & Refining Company  
**Address:** P. O. Box 1600, Midland, Texas 79701

**Federal, State or Indian Lease Number or name of lessor if fee lease**  
State (14) (State Lease No. 13414)

**Location:**  
1,980' FSL & 1,980' FEL  
Sec. TWP-Range or Block & Survey: Section 25, T-3-S, R-11-W

**Date spudded:** 7-31-72  
**Date total depth reached:** 8-10-72  
**Data completed, ready to produce Dry Hole:**

<table>
<thead>
<tr>
<th>Total depth</th>
<th>P.B.T.D.</th>
<th>Single, dual or triple completion?</th>
<th>Dry Hole</th>
<th>If this is a dual or triple completion, furnish separate report for each completion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,653'</td>
<td></td>
<td></td>
<td>0'</td>
<td></td>
</tr>
</tbody>
</table>

**Producing interval(s) for this completion:**

<table>
<thead>
<tr>
<th>Dry Hole</th>
<th>Rotary tools used (interval)</th>
<th>Cable tools used (interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2,653'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Was this well directionally drilled?** No  
**Was directional survey made?** No  
**Was copy of directional survey filed?** No  
**Date filed:**

**Type of electrical or other logs run (check logs filed with the commission):**

- [ ] Dry Hole

**CASING RECORD**

<table>
<thead>
<tr>
<th>Casing (report all strings set in well—conductor, surface, intermediate, producing, etc.)</th>
<th>Purpose</th>
<th>Size hole drilled</th>
<th>Size casing set</th>
<th>Weight (lb./ft.)</th>
<th>Depth set</th>
<th>Sacks cement</th>
<th>Amt. pulled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor</td>
<td>20&quot;</td>
<td>16&quot;</td>
<td>65#</td>
<td>42'</td>
<td>18 sx</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Surface</td>
<td>13-3/4&quot;</td>
<td>10-3/4&quot;</td>
<td>40,5#</td>
<td>1,306'</td>
<td>725 sx</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

**TUBING RECORD**

<table>
<thead>
<tr>
<th>None</th>
<th>Depth set</th>
<th>Packer set at</th>
<th>Size Top</th>
<th>Bottom</th>
</tr>
</thead>
</table>

**Liner RECORD**

<table>
<thead>
<tr>
<th>ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD</th>
<th>Am't. &amp; kind of material used</th>
<th>Depth Interval</th>
</tr>
</thead>
</table>

**PERFORATION RECORD**

<table>
<thead>
<tr>
<th>Number per ft.</th>
<th>Size &amp; type</th>
<th>Depth Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

**INITIAL PRODUCTION**

<table>
<thead>
<tr>
<th>Date of first production</th>
<th>Producing method (Indicate if flowing, gas lift or pumping—if pumping, show size &amp; type of pump):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Hole</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date of test</th>
<th>Hrs. tested</th>
<th>Choke size</th>
<th>Oil prod. during test bbls.</th>
<th>Gas prod. during test MCF</th>
<th>Water prod. during test bbls.</th>
<th>Oil gravity API (Corr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tubing pressure</th>
<th>Casing pressure</th>
<th>Cal'd rate of Production per 24 hrs.</th>
<th>Oil bbls.</th>
<th>Gas MCF</th>
<th>Water bbls.</th>
<th>Gas-oil ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Disposition of gas (state whether vented, used for fuel or sold):**

**CERTIFICATE**

I, the undersigned, under the penalty of perjury, state that I am the Proration Specialist of the Humble Oil & Refining Company (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date: September 11, 1972  
Signature: D. L. Clemmer

**RECEIVED**

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION  
Well Completion or Recompletion Report and Well Log  
File No. 72-131
<table>
<thead>
<tr>
<th>Formation</th>
<th>Top</th>
<th>Bottom</th>
<th>Description*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sd. &amp; Ground</td>
<td>0</td>
<td>322</td>
<td>Red and white volcanics</td>
</tr>
<tr>
<td>Volcanics</td>
<td>322</td>
<td>1,333</td>
<td>Core No. 1 from 2,598' to 2,628', Rec. 30' of core.</td>
</tr>
<tr>
<td>Volcanics &amp;</td>
<td>1,333</td>
<td>1,890</td>
<td></td>
</tr>
<tr>
<td>Quartz</td>
<td>1,890</td>
<td>2,325</td>
<td></td>
</tr>
<tr>
<td>Volcanics</td>
<td>2,325</td>
<td>2,588</td>
<td></td>
</tr>
<tr>
<td>Vol. c Granite</td>
<td>2,588</td>
<td>2,653</td>
<td></td>
</tr>
<tr>
<td>Granite</td>
<td>2,653</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dry Hole - Plugged and Abandoned on August 11, 1972.

Pencil notes on log:
- @ 60 ft. Granite boulders.
- @ 473 Red and brown volcanics (top of core).
- @ 2318 Gray and green volcanics (top and gray green.
- @ 2550 Gray and green volcanics (top red brown.

* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

INSTRUCTIONS:
Attach driller's log or other acceptable log of well.
### Plugging Record

**Operator:** Humble Oil & Refining Company  
**Address:** P.O. Box 1600, Midland, Texas 79701

**Location of Well:**
- **State (14):**  
- **Federal, State, or Indian Lease Number, or lessor's name if fee lease:** 1  
- **Field & Reservoir:** Wildcat - Stratigraphic Test  
- **County:** Yuma  
- **Sec-Twp-Rge Block & Survey:** 25-3S-11W  
- **State (14):** No. 1  
- **Field Reservoir:** -  
- **Location of Well:** FSL & FEL  
- **Application to drill this well was filed in name of:** Humble Oil & Refining Co.  
- **Date plugged:** August 11, 1972  
- **Total depth:** 2,653'  
- **Amount well producing when plugged:** None

**Character of well at completion (initial production):**
- **Dry?** Yes

**Name of each formation containing oil or gas:** None - Dry Hole

**Fluid content of each formation**

<table>
<thead>
<tr>
<th>Formation</th>
<th>Depth interval of each formation</th>
<th>Size, kind &amp; depth of plugs used</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>None - None</td>
</tr>
</tbody>
</table>

**Casing Record**

<table>
<thead>
<tr>
<th>Size pipe</th>
<th>Put in well (ft.)</th>
<th>Pulled out (ft.)</th>
<th>Left in well (ft.)</th>
<th>Give depth and method of parting casing (shot, crippled, etc.)</th>
<th>Packers and shoes</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot;</td>
<td>42'</td>
<td>None</td>
<td>42'</td>
<td>-</td>
<td>None</td>
</tr>
<tr>
<td>10-3/4&quot;</td>
<td>1,290'</td>
<td>None</td>
<td>1,290'</td>
<td>-</td>
<td>None</td>
</tr>
</tbody>
</table>

**Was well filled with mud-laden fluid, according to regulations?** Yes

**Indicate deepest formation containing fresh water:** 500'

**Names and Addresses of Adjacent Lease Operators or Owners of the Surface**

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Direction from this well:</th>
</tr>
</thead>
<tbody>
<tr>
<td>U. S. A.</td>
<td>P.O. Drawer 1857, Roswell, N.M.</td>
<td>North and South</td>
</tr>
<tr>
<td>State of Arizona</td>
<td>4515 N. 7th Ave., Phoenix, Arizona</td>
<td>All</td>
</tr>
</tbody>
</table>

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

**Certificate:** I, the undersigned, under the penalty of perjury, state that I am the Div. Drilling Operations Supt. of the Humble Oil & Refining Company (company) and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

**Date:** August 16, 1972

**Signature:** H. C. Davidson

**Received:** AUG 17, 1972
APPLICATION TO ABANDON AND PLUG

FIELD  Wildcat - Core Test
OPERATOR  Humble Oil & Refining Company
ADDRESS  P. O. Box 1600, Midland, Texas 79701

Federal, State, or Indian Lease Number
or Lessor's Name if Fee Lease

WELL NO. 1
SURVEY  T-3-S, R-11-W
SECTION  25  COUNTY  Yuma
LOCATION  1980' FS & EL

TYPE OF WELL  Dry Hole
TOTAL DEPTH  2,600'

ALLOWABLE (If Assigned)

LAST PRODUCTION TEST  OIL  (Bbls.)  WATER  (Bbls.)
GAS  (MCF)  DATE OF TEST

PRODUCING HORIZON  Dry Hole  PRODUCING FROM  TO

1. COMPLETE CASING RECORD
_16" - _65# Casing (18') Cemented w/18 sx Neat - Cmt, Circulated
_10-3/4" - 40.5# Casing (1,290') Set @ 1,306' Cemented w/475 sx 8% gel and 250 sx Neat -
Cmt. Circulated

2. FULL DETAILS OF PROPOSED PLAN OF WORK
Plug and abandon well as follows:
Plug #1  1,350' to 1,250' w/ 75 sx - Class B Cmt.
Plug #2  20' to 0' w/ 10 sx - Class B Cmt.

Fill balance of hole w/ 8.8#/gal. mud.

Verbal approval obtained 8-8-72.

If well is to be abandoned, does proposed work conform with requirements of Rule 202?  Yes  If not, outline proposed procedure above.

DATE COMMENCING OPERATIONS  8-9-72

NAME OF PERSON DOING WORK  Humble Oil & Refining Co
ADDRESS  P. O. Box 1600, Midland, TX 79701

CORRESPONDENCE SHOULD BE SENT TO  Humble Oil & Refining Company

Orig. & cc  OGCC - State of Arizona
cc: Drilling Section
cc: Central File

Date Approved  _ STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By  _ STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Abandon and Plug
File Two Copies

Form No. 9
RECEIVED