GEOLOGIC REPORT

WEST TEAS YATES FIELD
Lea County, NM

by

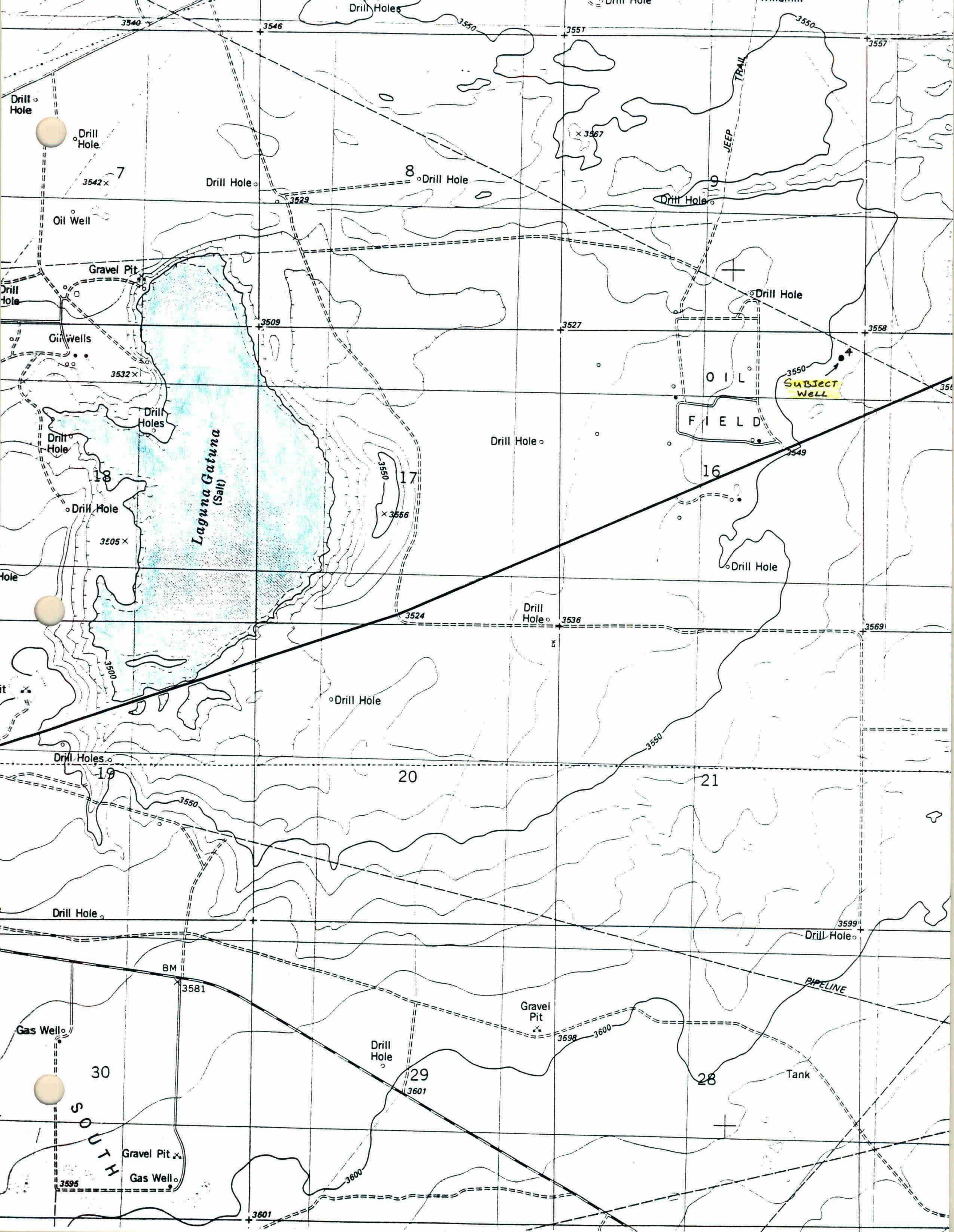
George J. Ulmo

The West Teas Yates Field, located in T-20-S, R-33-E in Lea County, NM, produces from sands and dolomites of the Yates Formation. The field is a structural closure with 100 to 150 feet of vertical closure covering approximately 1280 acres. It has produced more than 1,648,844 barrels of oil and 106,140 mcf gas from 28 wells, most of which has been produced by the 10 original wells in the field.

The structure at the Yates mapping horizon is caused primarily by drape over the underlying Capitan Reef, which in the vicinity, has developed through Seven Rivers time. Hence there is no Seven Rivers Formation present in the area (per Paul Koutz, NMOCD Geologist in Hobbs), although many operators wells in the area report a Seven Rivers Formation top near the base of the Yates Formation.

Reservoir quality within the sands and dolomites of the Yates Formation does not vary greatly throughout the field. The Yates Formation can be subdivided into 2 gross reservoir intervals. An interval of dense dolomite in the middle of the Yates Formation forms a natural vertical permeability barrier which divides the Yates into 2 distinct intervals (See cross sections A-A′ and B-B′) with different reservoir performance characteristics. Each interval produces from both sand and dolomite reservoir, but the two intervals seem to possess different drive mechanisms (based on decline curve analysis and gas oil ratios). The lower portion of the Yates produces by a strong water drive while the upper portion of the Yates produces from a solution of gas drive mechanism. Wells on the north end of the field, which produce from only the upper sands show a steep decline rate. Conversely, wells in the structurally higher southern end of the field, which produce from the lower Yates, have a much steadier production rate and a much gentler decline rate.

The Teas Field is similar to the Teas Yates-Seven Rivers Field, located two miles to the east, which has produced more than 3,392,932 barrels of oil and 428,466 mcf gas from 25 wells. That field has been unitized and is currently under waterflood. Cross sections A′-A" and C-C′show that the reservoir in that field is similar to the West Teas Field.


Drill Holes
Drill Hole
3550
3540
3546
3551
3557
Drill Hole
Drill Hole
3567
JEEP
TRAIL
7
3542
Drill Hole
8
Drill Hole
9
3529
Drill Hole
Oil Well
Gravel Pit
Drill Hole
Drill Hole
3509
3527
3558
Oil Wells
3532
O I L
F I E L D
3550
SUBJECT WELL
Drill Holes
Drill Hole
Drill Hole
Laguna Gatuna
(Salt)
3550
17
18
16
3549
Drill Hole
3556
3505
Drill Hole
Hole
Drill Hole
3524
3536
3569
3500
Drill Hole
3550
Drill Holes
19
20
21
3550
Drill Hole
3599
Drill Hole
PIPELINE
BM
3581
Gravel Pit
Gas Well
3598
3600
Drill Hole
29
28
Tank
30
3601
SOUTH
Gravel Pit
Gas Well
3596
3600
3601

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE