## STATE OF NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES OIL CONSERVATION DIVISION

# APPLICATION OF YATES PETROLEUM CORPORATION FOR APPROVAL OF A UNIT AGREEMENT, CHAVES AND LEA COUNTY, NEW MEXICO.

## CASE NO. 13476

#### AFFIDAVIT OF H. TIM MILLER

STATE OF NEW MEXICO) ) ss. COUNTY OF EDDY BEFORE THE OIL CONSERVATION DIVISION Santa Fe, New Mexico Case No. <u>13476</u> Exhibit No. 1 Submitted by: <u>Yates Petroleum Corporation</u> Hearing Date: <u>April 21, 2005</u>

I, H. Tim Miller, being first duly sworn on oath, states as follows:

1. My name is Tim Miller. I reside in Carlsbad, New Mexico. I am the petroleum geologist employed by Yates Petroleum Corporation ("Yates") who is responsible for the formation of the proposed Chicken Little State Exploratory Unit ("the Unit") comprised of 3323.16 acres, more or less, of State and Fee lands situated in Chaves County and Lea County, New Mexico. The horizontal limits of said Unit Area are described as follows:

#### Township 10 South, Range 31 East, N.M.P.M.

Section 24: All Section 25: All Section 35: NE/4, S/2 NW/4, SW/4, SE/4 Section 36: All

### Township 11 South, Range 32 East, N.M.P.M.

Irregular Section 4:Lots 3, 4, S/2 SW/4Irregular Section 5:Lots 1, 2, 3, 4, S/2 S/2 (All)Irregular Section 6:Lots 1, 2, 3, 4, 5, SE/4 SW/4, S/2 SE4(All)

2. Yates, the designated Unit Operator in the Chicken Little State Exploratory Unit Agreement, proposes the formation of the Unit to test all formations from the surface to the base of the Mississippian formation.

3. The initial unit well will be drilled at a standard gas well location 660 feet

from the South line and 660 feet from the West line of Section 36, Township 10 South, Range 31 East, NMPM, Chaves County, New Mexico with a proposed total depth of 11,255 feet.

4. <u>Attachment A</u> to this Affidavit is a copy of the Unit Agreement for the proposed Chicken Little State Exploratory Unit. This agreement is on the New Mexico State Land Office State/Fee Unit Agreement form.

5. <u>Attachment B</u> is the plat to the Unit Agreement that shows the boundaries of the Chicken Little State Exploratory Unit.

6. <u>Attachment C</u> to this Affidavit is a copy of Schedule B to the Unit Agreement for the Chicken Little State Exploratory Unit that identifies the working interest ownership in the unit area. Approximately 83% of the working interest in the Unit Area is owned by Yates and its affiliated companies and is committed to the Unit. 337.04 acres in the Unit is unleased fee land. <u>Yates Exhibit 2</u> are copies of the notice letters that were sent to all owners with unleased mineral interests in the proposed Unit area. The letter advises each owner that they have the option of leasing their interest to Yates (<u>Attachment A to Exhibit 2</u> is the lease sent to each unleased interest owner), participating in the Unit, or not participating at all by signing a waiver (<u>Attachment B</u> to Exhibit 2 is a copy of the waiver of joinder sent to each unleased interest owner).

7. The schedule under <u>Attachment C</u> also identifies the royalty interest in the Unit Area. Approximately 89% of the royalty interest is owned by the State of New Mexico and under <u>Attachment D</u> to this Affidavit is a letter from the New Mexico Commissioner of Public Lands giving preliminary approval of the State Land Office to the proposed Chicken Little State Exploratory Unit.

8. All of Yates' interest in the Unit Area has been committed to the Unit.

9. Attachment E is a Top of Devonian Structure Map and Attachment F is a Top of Austin Cycle Structure Map. Both structure maps display a high to the West and a high to the East of the proposed well location, with a low between them. This structural low is the depositional area of greater sand accumulation (Thick) which corresponds to the Atoka-Austin Cycle Isopach Map (Attachment G). By staying in the structural low, the chances are greatly increased for finding several productive Morrow and Atoka sands. The Aztec Oil & Gas #1 Murphy Reid Well (in Section 35), the U.S. Smelting Proctor #1 Well (in Irregular Section 5) and the Jack Grimm Ghaste #1 Well (in Section 8) all had sands in the Atoka and Morrow intervals that might have been productive if they had been tested. Yates attempted to reenter and test the Jack Grimm Well but was unsuccessful in the reentry. The U.S. Smelting Well was analyzed as too risky for a reentry attempt for the Morrow sands.

10. <u>Attachment H</u> is Stratigraphic Cross-Section A-A', <u>Attachment I</u> is Structural Cross-Section A-A', <u>Attachment J</u> is Stratigraphic Cross-Section B-B', and

2

Attachment K is Structural Cross-Section B-B'. The Morrow sands are highlighted in yellow on each cross-section. The sonic log porosity and the neutron density porosity is indicated in red on each cross-section. The U.S. Smelting Proctor #1 Well has four Morrow sands that were never tested. The second Morrow sand from the top of the Morrow Clastics (as shown on each cross-section) in the U.S. Smelting Well is thirty-two feet thick. Yates proposed well location has a very good chance of encountering this same sand. As shown in the stratigraphic cross-sections (Attachments H & J), the interval from the top of the Atoka to the top of the Austin Cycle thickens at the proposed well location with possibly 640 feet. This thickening would enhance the possibility of more deposition of sands than thinner areas. For example, John Cox's Proctor Well (as shown on Attachment J) and Natomas' Well (as shown on Attachment J) have thinner intervals. Both wells have less sands in the Atoka and Morrow Clastics intervals than the U.S. Smelting well and Jack Grimm's well. The A-A' Cross-Section is positioned more in the thicker part of the Atoka-Austin Cycle interval and reveals in all three wells that there are six or seven different sands.

11. The John Cox Proctor #1 Well produced 515 MMCF from the Atoka and Morrow sands. The Natoma New Mexico State #1 Well produced 449 MMCF from the Morrow sands. Both wells are shown on Attachments J and K. These wells indicate there is an excellent possibility that several Morrow and Atoka sands could be productive at Yates proposed well location.

12. The unit covers an area that can be reasonably developed under a unit plan.

13. Yates is attempting to develop Morrow sands as the main objective. Yates believes that the proposed location is slightly down dip and therefore in a thicker Atoka-Austin Cycle Isopach interval from the U.S. Smelting well. Also, Yates has secondary objectives in the Strawn, Canyon, Cisco, Wolfcamp limestones and Basal Abo dolomite.

17. This is a high risk project, but if the initial unit well is successful, additional wells will be drilled in the Unit Area. Accordingly, approval of the unit agreement will result in the efficient recovery of hydrocarbons.

18. Approval of the Chicken Little State Exploratory Unit and the development of the Unit Area pursuant to a unit plan is in the best interest of conservation, the prevention of waste and the protection of correlative rights.

## FURTHER AFFIANT SAYETH NOT.

3

N Tim Miller Petroluum Deologist

SUBSCRIBED AND SWORN before me on this  $\underline{12^{\text{th}}}$  day of April, 2005.



OFFICIAL SEAL Nancy Elrod NOTARY PUBLIC-STATE OF NEW MEXICO My commission expires: 10-17-05

1 Ancy Elod Notary Public

My Commission Expires: