## KANSAS CORPORATION COMMISSION ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

| Type Test  | _  | ONL  | r Oller G                         | (See Insi              | tructions of Rev                 |              | CLIVERADIL                             |                             | •   | Form (                                |                |
|--|--|--|-----------------------------------|------------------------|----------------------------------|--------------|--|-----------------------------|---|---------------------------------------|----------------|
|  | Open Flov  |  |                                   |                        |                                  |              |  |                             |   | (Kav.                                 | 2 <b>(48</b> ) |
|  | Deliverab  | ility  |                                   | Test Date:             |                                  |              | API No. 15-                            | 129 21403                   | - 0000  |                                       |                |
| Company<br>ANADARKO  | ompany<br>NADARKO PETROLEUM CORPORATION                        |  |                                   |                        | Lease<br><b>ARNOLD</b>           |              |  | Well Number<br><b>C-1</b>   |   |                                       |                |
| County   | Location   |  |                                   | Section                |                                  |              | TWP                                    | RNGE (E/W)                  |   | Ad                                    | res Attribute  |
| Morton<br>Field  | 1450FNL&1250FWL  |  |                                   | 8                      |                                  |              | 33S<br>Gas Gathering C                 | 41W<br>Connection           |   |                                       | 640            |
| DUNKLE   | Reservoir<br>WABUNS  |  |                                   | SEE                    |                                  |              | Gas Gathering C                        | g                           |   |                                       |                |
| Completion Date  |  |  | Plug Back Tot                     | •                      |                                  |              |  | Packer Set a                | =   |                                       | ,              |
| 09/01/95<br>Casing Size  |  |  | Moight                            | 2956                   | Interenal Diam                   | otor         | Set at                                 |                             | NA<br>Perforations                            | To                                    |                |
| 5.5  | Weight<br>15.5   |  |                                   | 4.95                   |                                  |              | 3009                                   | 2904                        |   |                                       |                |
| Fubing Size  | Weight   |  | Interenal Diameter                |                        |                                  | Set at       | Perforations                           |                             | To  |                                       |                |
| 2.375  |  |  | 4.7                               |                        | 1.995                            |              | 2932                                   | _                           | NA  | NA                                    |                |
| Type Comptetion (  |  |  |                                   | Type Fluid Pro         | oduction                         |              | Pump Unit or Tra                       |                             | 17  | Yes / No                              |                |
|  | INGLE GAS oducing Thru (Annulus / Casing)                      |  |                                   | WATER % Carbon Dioxide |                                  |              | Pumping Unit % Nitrogen                |                             | PUMP Gas Gravity - Ga                         |                                       |                |
| CASING   | e (Anning)   |  |                                   | 0.196                  |                                  |              | 25.086                                 |                             | 0.754   |                                       |                |
| Vertical Depth (H)   | 1)   |  |                                   | Pressure Taps          |                                  |              | (Meter Run)                            |                             | (PROVER) Size                                 |                                       |                |
| 2909   |  |  |                                   | Flange                 |                                  |              | X                                      |                             |   | 2                                     |                |
| Pressure Buildup:  |  | Shut in  |                                   | -                      | 8:40 am                          | (AM)(PM)     |  | 3/6/13                      | -   |                                       | (AM)(PM)       |
| Vell on Line:  |  | Started  | n/a                               | _ at                   | n/a                              | (AM)(PM)     | Taken                                  | n/a                         | _ at  | n/a                                   | (AM)(PM)       |
|  |  |  |                                   | OBSE                   | RVED SURI                        | FACE DATA    |  | Duration of Sh              | ut-in   | 24                                    | Hours          |
|  |  | Circle One:  | Pressure                          | ]                      |                                  | C            | Casing                                 | Tu                          | bing  | "                                     | Liquid         |
| Static /   | Orifice  | Meter or   | Differential                      | Flowing                | Well Head                        | 1            | ad Pressure                            |                             | 1 Pressure                                    | Duration                              | Produced       |
| Dynamic<br>Property  | Size<br>inches   | Prover Pressure psig   | in (h)<br>Inches H <sub>2</sub> O | Temperature<br>t       | Temperature<br>t                 | psig         | (P <sub>t</sub> ) or (P <sub>c</sub> ) | psig                        | P <sub>t</sub> ) or (P <sub>c</sub> )<br>psia | (Hours)                               | (Barrels)      |
| Shut-In  | indies .   | paig   | manes rizo                        | <u> </u>               | <del> </del>                     | 16           | 30.4                                   | PUMP                        | pora  | 24                                    |                |
| Flow   | 0.500  | N/A  | N/A                               | N/A                    | 60                               | N/A          | 0                                      | PUMP                        |   | N/A                                   | 0              |
|  |  |  |                                   | <b></b>                |                                  |              | _                                      | 1                           | •   |                                       |                |
| Plate  | Ī oʻ   |  | Pressure                          | FLOI                   | W STREAM                         | ATTRIBUTE    | <u>s</u>                               | 1                           |   | El-                                   | da.a.          |
| Coefficient  |  |  | Extension                         | Gravity                | Flowing ty Temperature Deviation |              | Metered Flow                           | G                           | OR  | Flowing Fluid                         |                |
| $(F_b)(F_p)$   | Provei   | r Pressure   | Sqrt                              | Factor                 | Factor                           | Factor       | R                                      | (Cubi                       | Cubic Feet/ Gravity                           |                                       | vity           |
| Mcfd   |  | psia   |                                   | F <sub>0</sub>         | F <sub>ft</sub> F <sub>pv</sub>  |              | (Mcfd)                                 | Barrel)                     |   | G <sub>m</sub>                        |                |
| 1.219  | <u> </u>   | 14.4   | 0                                 | 1.151                  | 1.063                            | 1.000        | 0                                      | 0                           |   | 0.0                                   | 00             |
|  |  |  | (OP                               | EN FLOW) (             | DELIVERAE                        | BILITY) CALC | CULATIONS                              |                             |   |                                       |                |
| _  |  | _  | •                                 | • •                    | •                                | ·            |  |                             |   | (P <sub>w</sub> ) <sup>2</sup> =0.207 |                |
| (P <sub>c</sub> ) <sup>2</sup> =                                     | 0.924  | (P <sub>w</sub> ) <sup>2</sup> =   | 0                                 | . Pa≃                  |                                  | . %          | (P <sub>c</sub> -14.4)+14.4=           |                             | (P <sub>d</sub> ) <sup>2</sup> =              |                                       |                |
| (D.)2 (D.)2  |  | Choose formula 1 or 2:   | LOG of                            |                        |                                  | sure Curve   |  |                             |   | Open                                  |                |
| (P <sub>c</sub> ) <sup>2</sup> -(P <sub>a</sub> ) <sup>2</sup>       | (P <sub>c</sub> ) <sup>2</sup> -(P <sub>w</sub> ) <sup>2</sup> | 1. P <sub>c</sub> <sup>2</sup> -P <sub>a</sub> <sup>2</sup><br>2. P <sub>c</sub> <sup>2</sup> -P <sub>a</sub> <sup>2</sup> | formula                           | $(P_c^2 - P_w^2)$      |                                  | e = "n"      | n x LOG() Antilog E                    |                             | l .   | Deliverability Equals R x Antilog     |                |
| or<br>(P <sub>c</sub> ) <sup>2</sup> -(P <sub>d</sub> ) <sup>2</sup> | (F2) 7(FW)   | divided by   | 1. or 2.<br>and divide            | (Fc =Fw )              |                                  | origned      | "***                                   | IG( )                       | Antilog                                       | Equals R<br>Mo                        | _              |
| (16) (14)  |  | P <sub>c</sub> <sup>2</sup> -P <sub>w</sub> <sup>2</sup>   | by:                               |                        |                                  | rd Slope     |  |                             |   | *****                                 |                |
| 0.717  | 0.924  |  | -0.                               | .11                    | 0.8                              | 383          | -0.0                                   | 97                          | 0.8   | 0                                     |                |
|  |  |  |                                   | ·                      |                                  |              |  |                             |   |                                       |                |
| O Fla  |  |  |                                   |                        | Dalisanskili                     | <b>4.</b> .  |  |                             |   |                                       |                |
| Open Flow  | <del></del>  |  |                                   |                        | Deliverabili                     | ıy           |  |                             |   |                                       |                |
|  |  |  |                                   |                        |                                  |              | nake the above of March 2013           |                             | that he has                                   | knowledge                             |                |
|  |  |  |                                   |                        |                                  |              |  |                             | Thomas I                                      | Waleh                                 |                |
| Witness (if any)   |  |  |                                   | •                      |                                  |              |  | Thomas L. Walsh For Company |   |                                       |                |
|  |  | ••   |                                   |                        |                                  |              |  |                             | •   | •                                     |                |
|  | For Commi  | esion  |                                   |                        |                                  |              |  | <del></del>                 | Checked b                                     |                                       |                |
|  | i or commit  | 33(011   |                                   |                        |                                  |              |  |                             | Ollecken D                                    | y<br>RECEIVED                         |                |
|  |  |  |                                   |                        |                                  |              |  |                             | KANSAS CO                                     | RECEIVED<br>RPORATION CA              | MMISSION       |

APR 1 8 2013

| (Rev: | 8/98)  |
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| I declare under penalty or perjury under the laws of the state of Kansas that I am auti exempt status under Rule K.A.R. 82-3-304 on behalf of the operator Andorko and that the foregoing information and statements contained on this application form are true and correct to the best of my knowledge and belief based upon gas production records and records of equipment installation and/or of type completion or upon use of the gas well herin named.  I hereby request a permanent exemption form open flow testing for the Arnold C-1 gas well on the grounds that said well:  (Check One) |
|---|
| is a coalbed methane producer  is cycled on plunger lift due to water  is a source of natural gas for injection into an oil reservoir undergoing ER  is on vacuume at the present time; KCC approval Docket No  is incapable of producing at a daily rate in excess of 150 mcf/D  |
| Date: 16- Apr - 2013  |
| Signature:  |
|   |

Instructions All active gas wells must have at least on original G-2 form on file with the conservation division. If a gas well meets the eligibility criteria set out in KCC regulation K.A.R. 82-3-304, the operator may complete the statement provided above in order to obtain a testing exemption.

At some point during the succeeding calender year, wellhead shut-in pressure shall be measured after a minimum of 24 hours shut-in/buildup time and shall be reported on the front side of this form under "observed surface data." Shut-in pressure shall therafter be reported yearley in the same manner.

The G-2 form conveying the newest shut-in pressure reading shall be filed with the Wichita office no later than thirty (30) days after the taking of the pressure reading. The form must be signed and dated on the front side as though it was a verified report of test results.

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KANSAS CORPORATION COMMISSION

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CONSERVATION DIVISION WICHITA, KS