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DOCKET NO. 1407-SP-2098

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Noble Energy, Inc.

**Cause No. 535
Docket No. 1407-SP-2098**

Noble Energy, Inc.
Julie T. Jenkins - Land Testimony
Cause 535; Docket No. 1407-SP-2098
Drilling and Spacing Unit Application – Cretaceous Formations (Defined below)
Unnamed Field, Weld County, Colorado

July 2014 Colorado Oil and Gas Conservation Commission Hearing

My name is Julie T. Jenkins, and I am currently employed as a Land Manager for Noble Energy, Inc. ("Applicant"). I graduated from Louisiana State University with a Bachelor of Science degree in Petroleum Land Management. I have 18 years of experience in oil and gas land work. I am familiar with the lands subject to, and matters set forth in, the verified application ("Application").

In support of Applicant's Application and my sworn testimony herein, I am submitting six (6) exhibits. This testimony and exhibits provide the supporting basis for approval of the Applicant's request for an order to a) vacate Order No. 535-3 only as to Section 19, Township 9 North, Range 60 West, 6th P.M.; and b) to establish an approximate 640-acre exploratory drilling and spacing unit for Section 19, Township 9 North, Range 60 West, 6th P.M.; and c) to authorize up to one (1) horizontal well in order to efficiently and economically recover the oil, gas and associated hydrocarbons from the Greenhorn, Graneros, Niobrara, and Codell Formations (collectively referred to as the "Cretaceous Formations") underlying the following lands ("Application Lands"):

Township 9 North, Range 60 West, 6th P.M.
Section 19: All
Weld County, Colorado

Exhibit A-1: Leasehold Ownership Map:

Exhibit A-1 is a map showing the location of the Application Lands and the leasehold ownership. The Application Lands consist of 100% fee minerals. The following parties own leasehold or unleased mineral interests in the Application Lands:

<u>INTEREST OWNER(S)</u>	<u>UNIT WI</u>
Noble Energy, Inc.	47.598253%
Noble Energy WyCo, Inc.	38.482764%
Denver Basin Oil & Gas, LLC	4.091668%
Sundance Energy, Inc.	3.337646%
JAL Interests, LLC	2.225097%
Heirs and successors of John W. Mueck	2.517517%
Church of Latter Day Saints	0.996869%
Heirs and Successors of Elsie Enax	0.498434%
Kenneth Mick	0.125876%
Margery J. Mick	0.125876%
TOTAL:	100.000000%

Exhibit A-2: Property Location Plat and Mineral and Surface Ownership Map:

Attached as Exhibit A-2 is a Property Location Plat, which sets forth the surface location for the drilling and spacing unit. The unit contains approximately 640 acres comprised of Section 19, Township 9 North, Range 60 West, 6th P.M. The mineral and surface ownership of the Applications lands is 100% fee.

Exhibit A-3: Topographic Map:

Exhibit A-3 is a map showing the topography of the Application Lands. Approval of a drilling and spacing unit would allow for a less impactful surface development plan.

Exhibit A-4: Setbacks Map:

Exhibit A-4 is a map showing the setbacks for the Application Lands. The Applicant has conformed to its statement that the treated interval of any horizontal well shall be no closer than 600 feet from the boundaries of the unit.

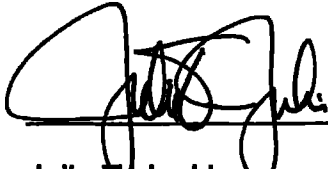
Based upon our examination of relevant documents, and under my direction and control, all of the interested parties included in Exhibit A attached to the Application received proper notice. As of the date of this testimony, Noble Energy, Inc. has not received any protests or objections to the Application.

The matters described herein were all conducted under my direction and control. To the best of my knowledge and belief, all of the matters set forth herein, my testimony and in the exhibits are true, correct and accurate.

[The remainder of this page is intentionally left blank.]

Affirmation

The matters described herein were all conducted under my direction and control.
I hereby swear that to the best of my knowledge and belief, all of the matters set forth
herein and in the exhibits are true, correct, and accurate.



PCW
JS

Julie T. Jenkins
Land Manager
Noble Energy, Inc.

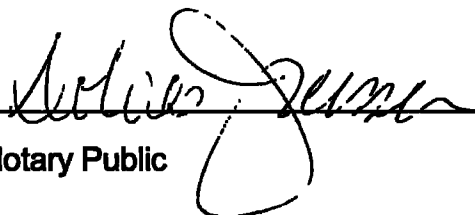
STATE OF COLORADO)
) ss.
CITY AND COUNTY OF DENVER)

The foregoing instrument was subscribed and sworn to before me this 15th day of
July, 2014, by Julie T. Jenkins, Land Manager for Noble Energy, Inc.

Witness my hand and official seal.

[SEAL]

My commission expires: 5/26/2018



Notary Public

Exhibit A-1: Leasehold Ownership Map

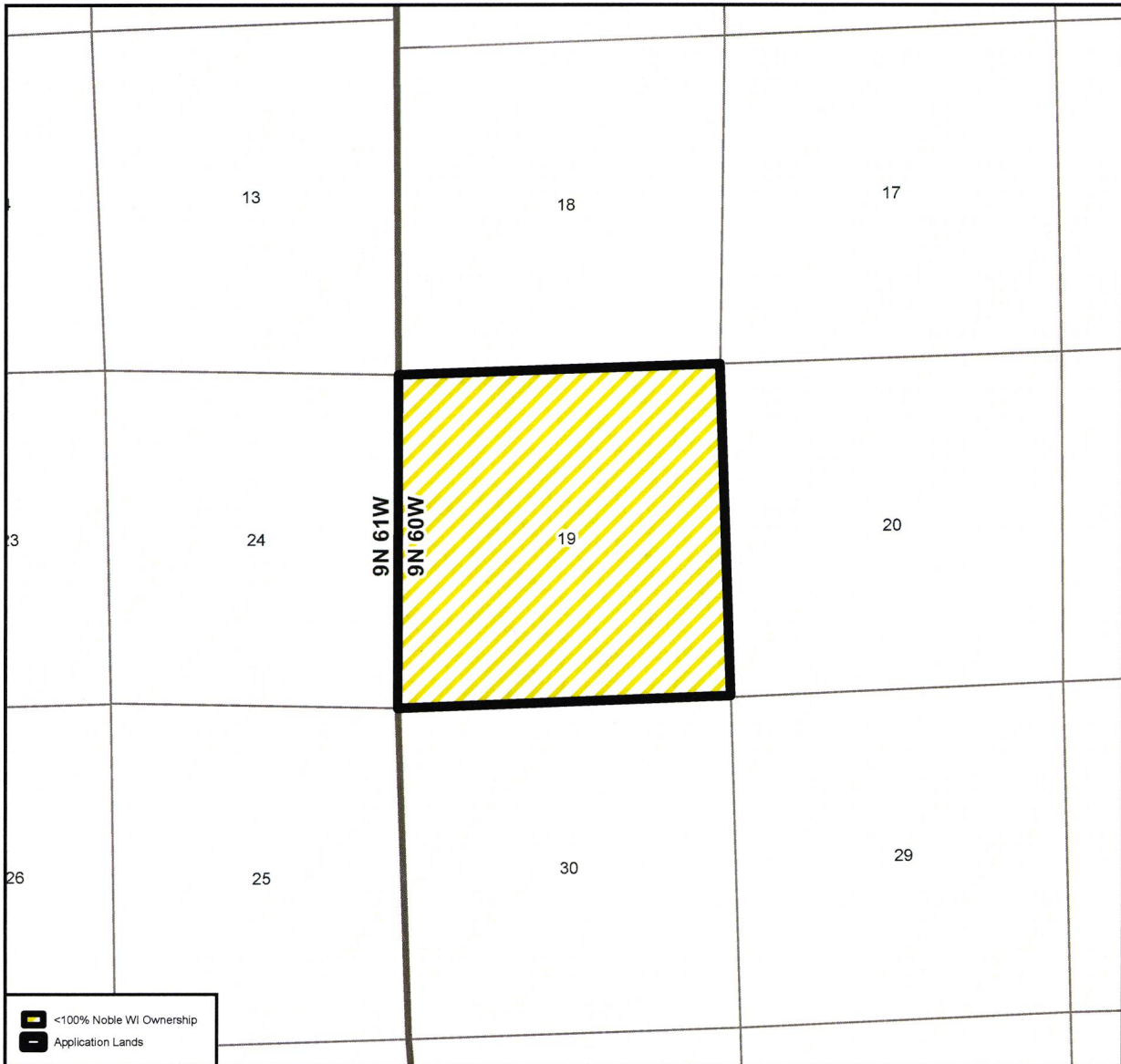
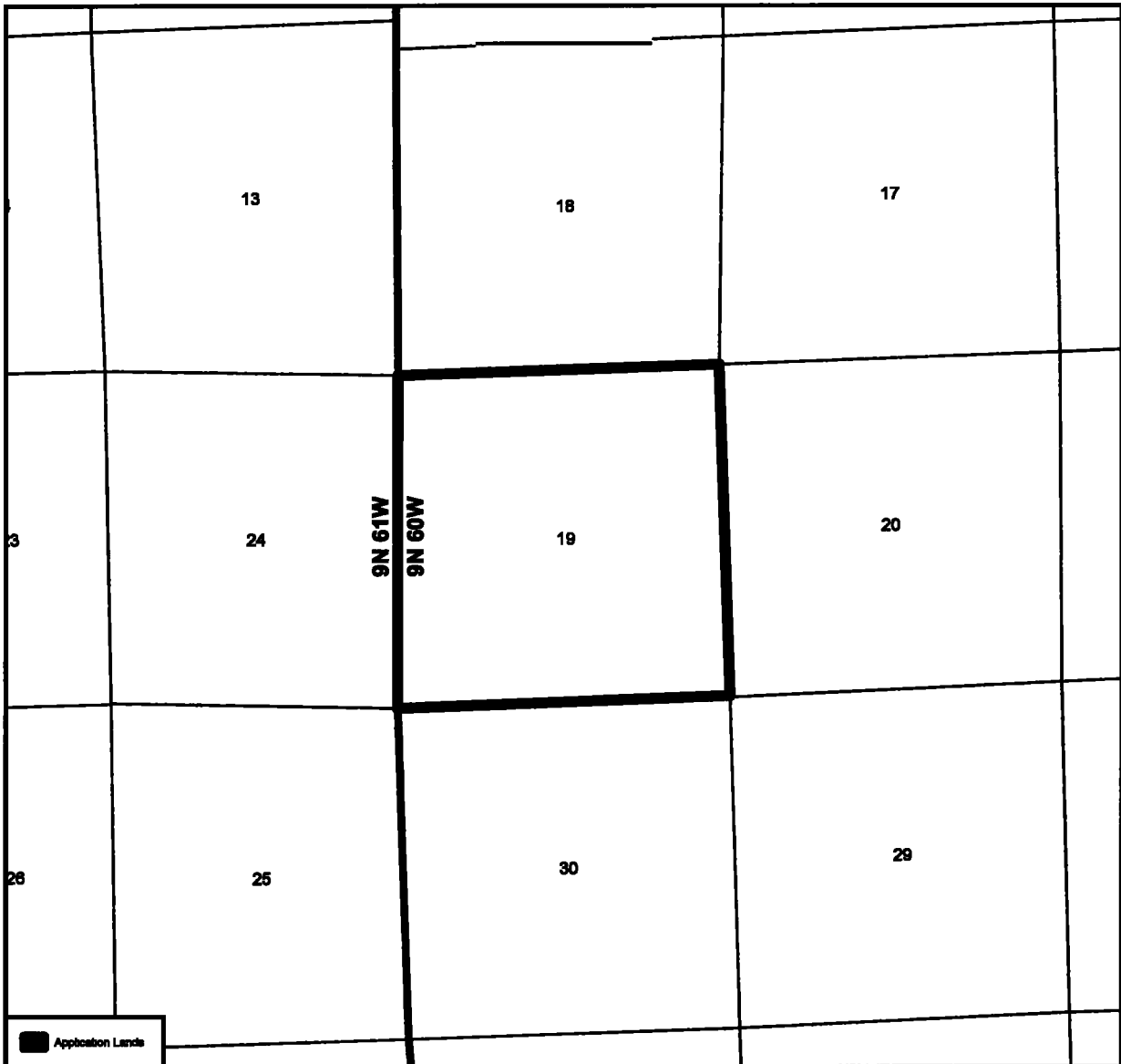
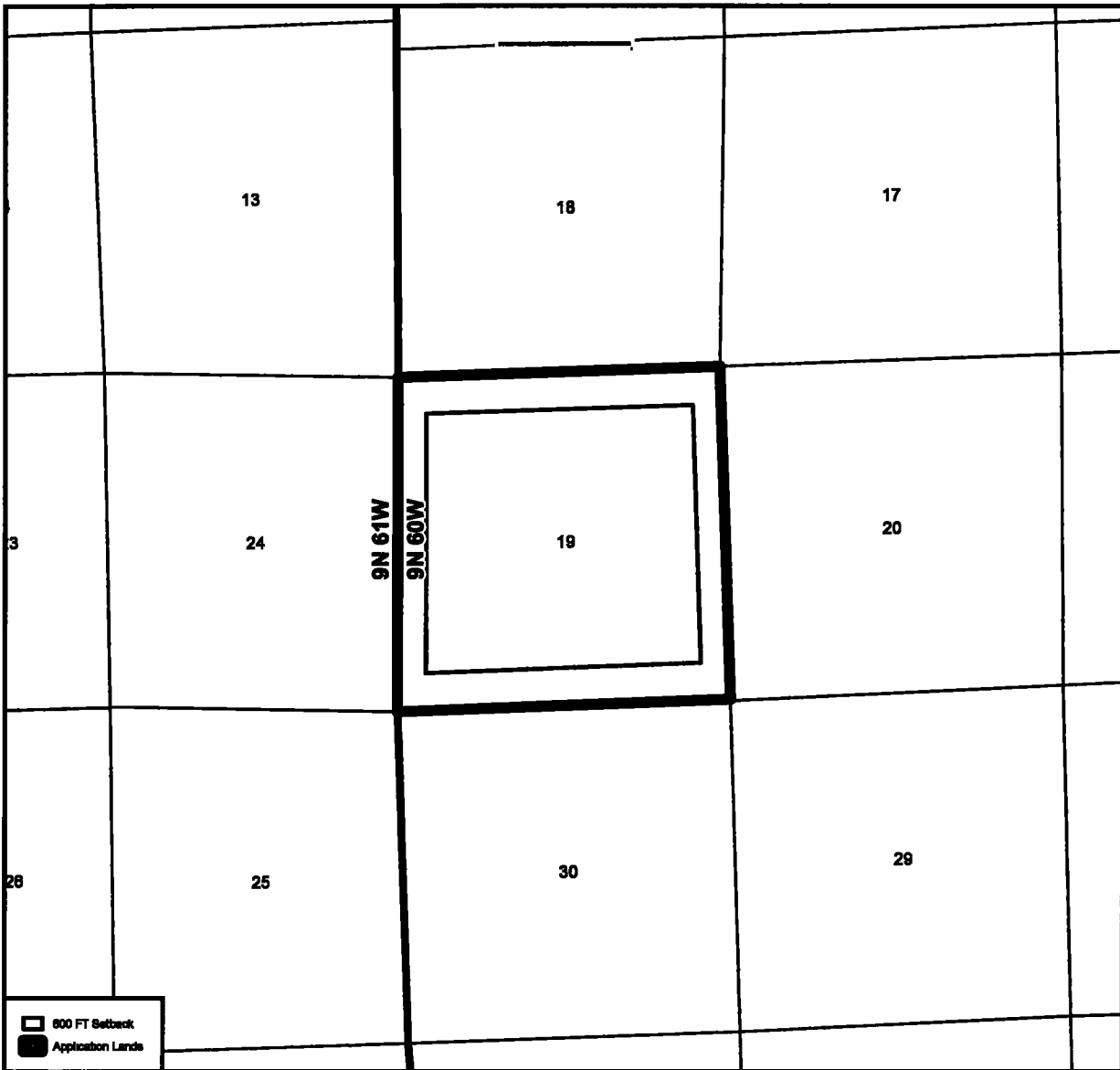


Exhibit A-2: Property Location Plat
Surface and Mineral Ownership Map (100% Fee)



The image shows a topographic map of the Rassland area. A 10x10 grid is overlaid on the map. The grid lines are labeled with numbers: 1 through 10 on the horizontal axis and 1 through 10 on the vertical axis. A black rectangle highlights a specific area in the center of the grid, spanning from grid line 5 to 6 on both the horizontal and vertical axes. A dashed line labeled 'PIPELINE' runs diagonally across the map. A solid line labeled 'RASSLAND' runs horizontally across the middle of the map. A white box labeled 'Topography' is in the bottom right corner. A white box labeled 'Application Lands' is in the top left corner. The map also shows contour lines, a 'Water Tank' location, and a 'Gunsight Well' location.

Exhibit A-4: Setbacks Map



NOBLE ENERGY, INC.

Mark Nicholson – Geology Testimony

Cause 535

Docket No. 1407-SP-2098

Greenhorn, Graneros, Niobrara and Codell Formations

Weld County, Colorado

July 28th, 2014 Colorado Oil and Gas Conservation Commission Hearing

My name is Mark Nicholson, and I am currently a Geologist for Noble Energy Inc. working in Prospect Development for the Wattenberg Business Unit. I received a Bachelor's of Science degree in Geology from Auburn University and a Master's of Science in Geology from the Colorado School of Mines in 1984 and 2007, respectively. I have 17 years of experience in the oil and gas industry. I am familiar with the lands described, and the matters set forth in the July 28th, 2014 verified application ("Application").

In support of Noble's application in the above referenced docket, I am submitting the following exhibits. The exhibits are attached to my sworn testimony and form the basis of Noble's Application for an order establishing the Greenhorn, Graneros, Niobrara and Codell Formations underlying of Section 19 of Township 9 North, Range 60 West, 6th P.M., Weld County, Colorado, underlying the following lands (the "Application Lands"):

**Township 9 North, Range 60 West, 6th P.M., Weld County, Colorado
Section 19**

1. Exhibit G-1 – Structure Contour Map of the Greenhorn Formation

Exhibit G-1 is a seismic structure contour map of the Greenhorn Formation. It illustrates structural relief along the top of the horizon in TVDSS. The Graneros Formation is not interpretable on the seismic data, though it is directly below the Greenhorn Formation. The structure of the Graneros Formation is similar to the structure of the Greenhorn Formation in this area.

2. Exhibit G-2 – Structure Contour Map of the Niobrara Formation

Exhibit G-2 is a seismic structure contour map of the Niobrara Formation. It illustrates structural relief along the top of the horizon in TVDSS. The Codell Formation is not interpretable on the seismic data, though it is directly below the Niobrara Formation. The structure of the Codell Formation is similar to the structure of the Niobrara Formation in this area.

3. Exhibit G-3 – Seismic Cross Section

Exhibit G-3 is a seismic cross section showing the structural component of the target zone.

4. Exhibit G-4 – Cross Section illustrating all prospective formations.

Cross section includes the entire Greenhorn, Graneros, Niobrara and Codell Formations to show vertical proximity of the formations relative to one another.

5. Exhibit G-5 Isopach Map of the Greenhorn Formation

Exhibit G-5 is an isopach map of the Greenhorn Formation measured in feet. The thickness is 285 ft. in the area of interest.

6. Exhibit G-6 Isopach Map of the Graneros Formation

Exhibit G-6 is an isopach map of the Graneros Formation measured in feet. The thickness is 115 ft. in the area of interest.

7. Exhibit G-7 Isopach Map of the Niobrara Formation

Exhibit G-7 is an isopach map of the Niobrara Formation measured in feet. The thickness is 245 ft. in the area of interest.

8. Exhibit G-8 Isopach Map of the Codell Formation

Exhibit G-8 is an isopach map of the Codell Formation measured in feet. The thickness is 12 ft. in the area of interest.

The matters described herein were all conducted under my direction and control. I hereby swear that to the best of my knowledge and belief, all of the matters set forth herein, my testimony and in the exhibits are true, correct and accurate.

Dated this 9 day of July 2014,

Mark Nicholson
Mark Nicholson
Geologist
Noble Energy, Inc.
Wattenberg Business Unit

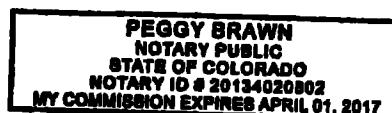
STATE OF COLORADO)
) ss.
CITY AND COUNTY OF DENVER)

The foregoing instrument was subscribed and sworn to before me this 09 day of July, 2014, by Mark Nicholson, Geologist, for Noble Energy, Inc.

Witness my hand and official seal.

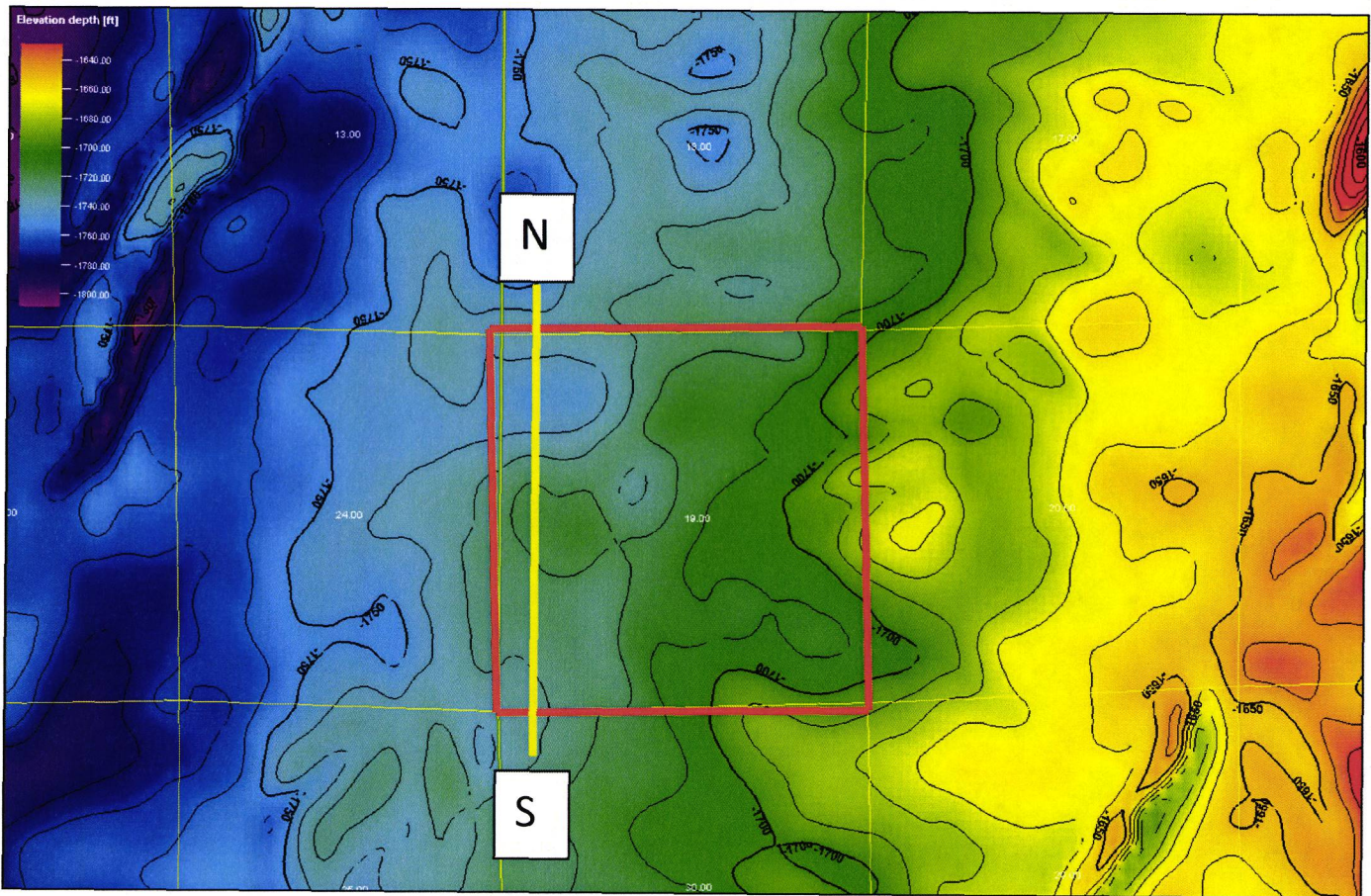
My commission expires: April 01, 2017

Peggy Brawn
Notary Public



Exhibits

Exhibit G-1: Seismic Structure Contour Map – Greenhorn Depth Structure. Yellow line is a locator line for the seismic cross sections on exhibits G-4.



A topographic map of a study area, likely a coastal or estuarine environment, showing elevation contours. The map is color-coded according to elevation, with a vertical color bar on the left indicating values from 1225.00 (dark blue) to 1250.00 (yellow). The map features numerous contour lines labeled with values such as 1300, 1350, 1400, 1450, 1500, 1550, 1600, 1650, 1700, 1750, 1800, 1850, 1900, 1950, 2000, 2050, 2100, 2150, 2200, 2250, 2300, 2350, 2400, 2450, 2500, 2550, 2600, 2650, 2700, 2750, 2800, 2850, 2900, 2950, 3000, 3050, 3100, 3150, 3200, 3250, 3300, 3350, 3400, 3450, 3500, 3550, 3600, 3650, 3700, 3750, 3800, 3850, 3900, 3950, 4000, 4050, 4100, 4150, 4200, 4250, 4300, 4350, 4400, 4450, 4500, 4550, 4600, 4650, 4700, 4750, 4800, 4850, 4900, 4950, 5000, 5050, 5100, 5150, 5200, 5250, 5300, 5350, 5400, 5450, 5500, 5550, 5600, 5650, 5700, 5750, 5800, 5850, 5900, 5950, 6000, 6050, 6100, 6150, 6200, 6250, 6300, 6350, 6400, 6450, 6500, 6550, 6600, 6650, 6700, 6750, 6800, 6850, 6900, 6950, 7000, 7050, 7100, 7150, 7200, 7250, 7300, 7350, 7400, 7450, 7500, 7550, 7600, 7650, 7700, 7750, 7800, 7850, 7900, 7950, 8000, 8050, 8100, 8150, 8200, 8250, 8300, 8350, 8400, 8450, 8500, 8550, 8600, 8650, 8700, 8750, 8800, 8850, 8900, 8950, 9000, 9050, 9100, 9150, 9200, 9250, 9300, 9350, 9400, 9450, 9500, 9550, 9600, 9650, 9700, 9750, 9800, 9850, 9900, 9950, 10000. A red rectangular region of interest is outlined on the map, spanning approximately from 1300 to 1700 on the x-axis and 1225 to 1350 on the y-axis. A yellow vertical line is drawn through the center of the red rectangle, at approximately x=1500. The map also shows several contour lines labeled with values such as 1300, 1350, 1400, 1450, 1500, 1550, 1600, 1650, 1700, 1750, 1800, 1850, 1900, 1950, 2000, 2050, 2100, 2150, 2200, 2250, 2300, 2350, 2400, 2450, 2500, 2550, 2600, 2650, 2700, 2750, 2800, 2850, 2900, 2950, 3000, 3050, 3100, 3150, 3200, 3250, 3300, 3350, 3400, 3450, 3500, 3550, 3600, 3650, 3700, 3750, 3800, 3850, 3900, 3950, 4000, 4050, 4100, 4150, 4200, 4250, 4300, 4350, 4400, 4450, 4500, 4550, 4600, 4650, 4700, 4750, 4800, 4850, 4900, 4950, 5000, 5050, 5100, 5150, 5200, 5250, 5300, 5350, 5400, 5450, 5500, 5550, 5600, 5650, 5700, 5750, 5800, 5850, 5900, 5950, 6000, 6050, 6100, 6150, 6200, 6250, 6300, 6350, 6400, 6450, 6500, 6550, 6600, 6650, 6700, 6750, 6800, 6850, 6900, 6950, 7000, 7050, 7100, 7150, 7200, 7250, 7300, 7350, 7400, 7450, 7500, 7550, 7600, 7650, 7700, 7750, 7800, 7850, 7900, 7950, 8000, 8050, 8100, 8150, 8200, 8250, 8300, 8350, 8400, 8450, 8500, 8550, 8600, 8650, 8700, 8750, 8800, 8850, 8900, 8950, 9000, 9050, 9100, 9150, 9200, 9250, 9300, 9350, 9400, 9450, 9500, 9550, 9600, 9650, 9700, 9750, 9800, 9850, 9900, 9950, 10000.

Exhibit G-3: North – South Horizontal Profile. Red line is an approximation of the well bore trajectory.

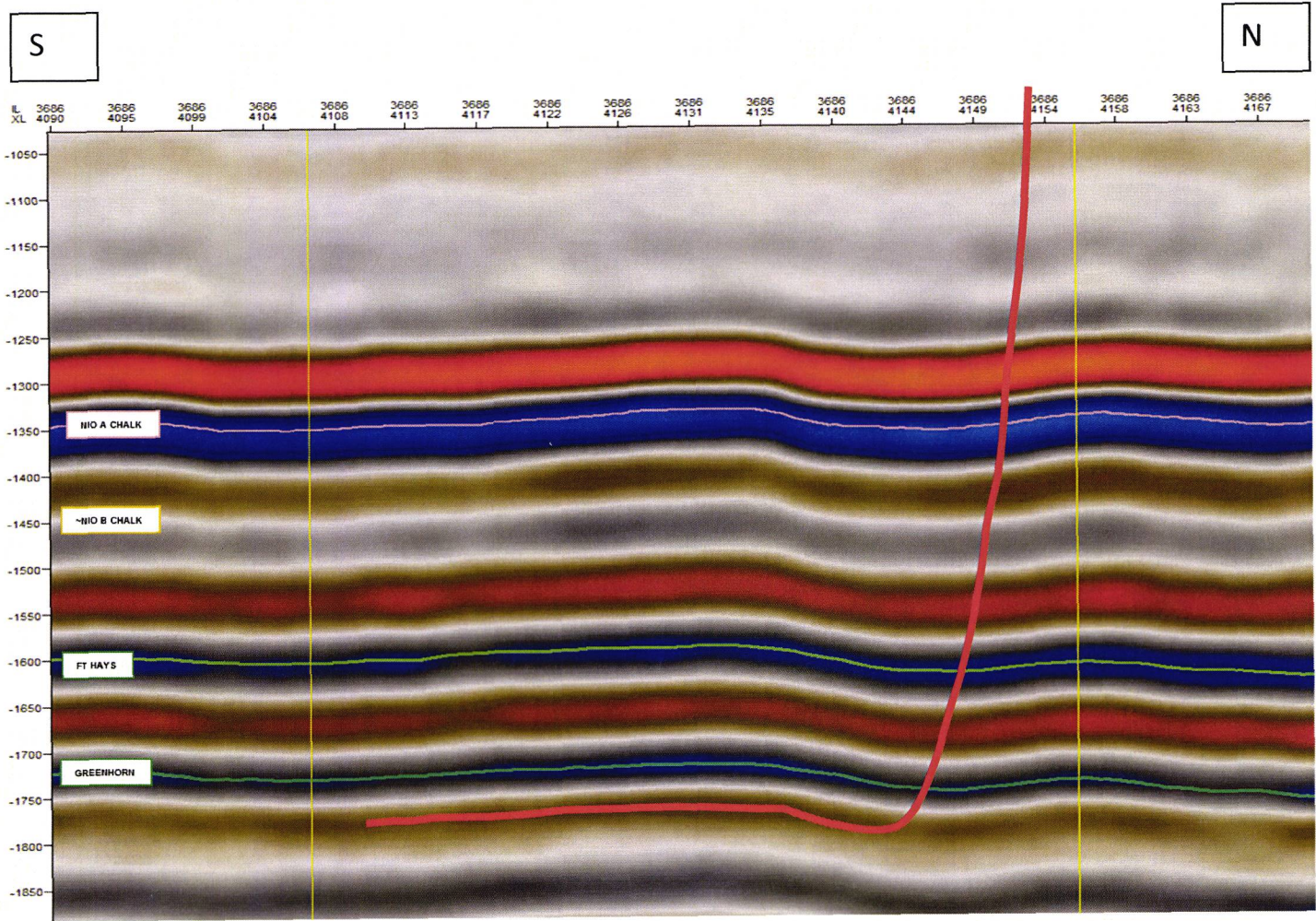


Exhibit G-4: Cross Section showing Greenhorn, Graneros, Codell and Niobrara Formations.

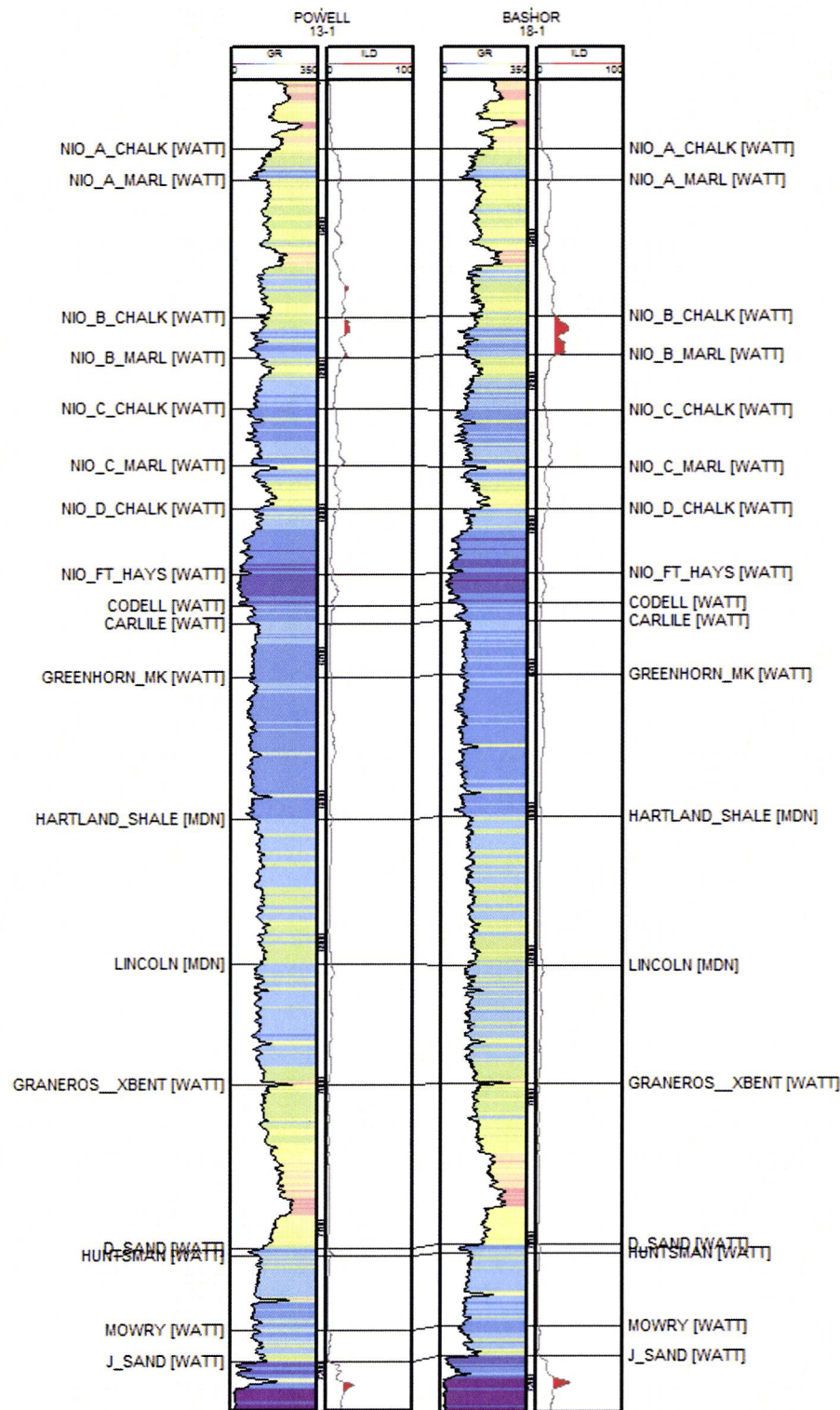


Exhibit G-5: Isopach Map – Greenhorn isopach with isopach values posted. Lone Pine well highlighted with red line.

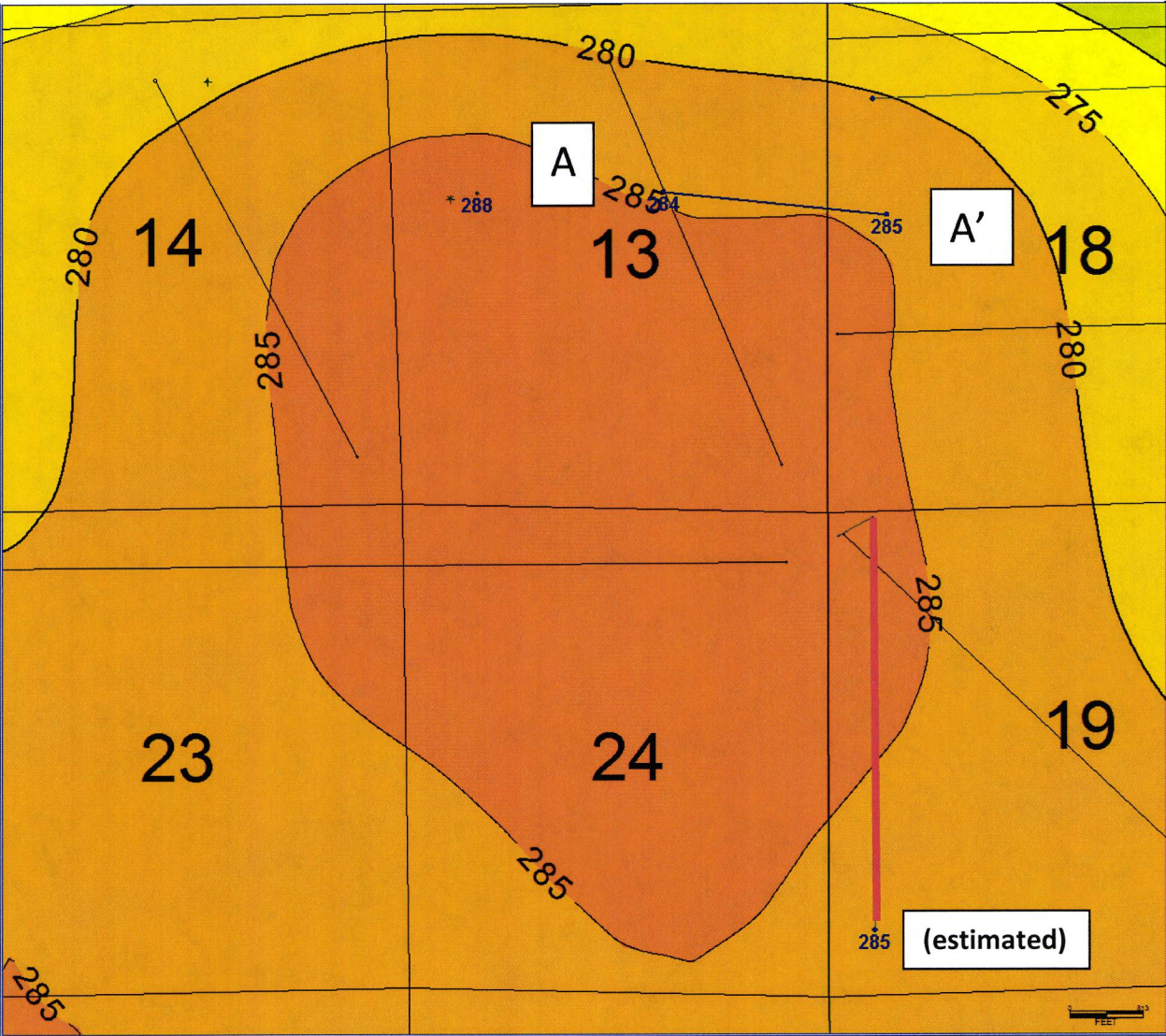


Exhibit G-6: Isopach Map – Graneros isopach with values posted. Lone Pine well highlighted with red line

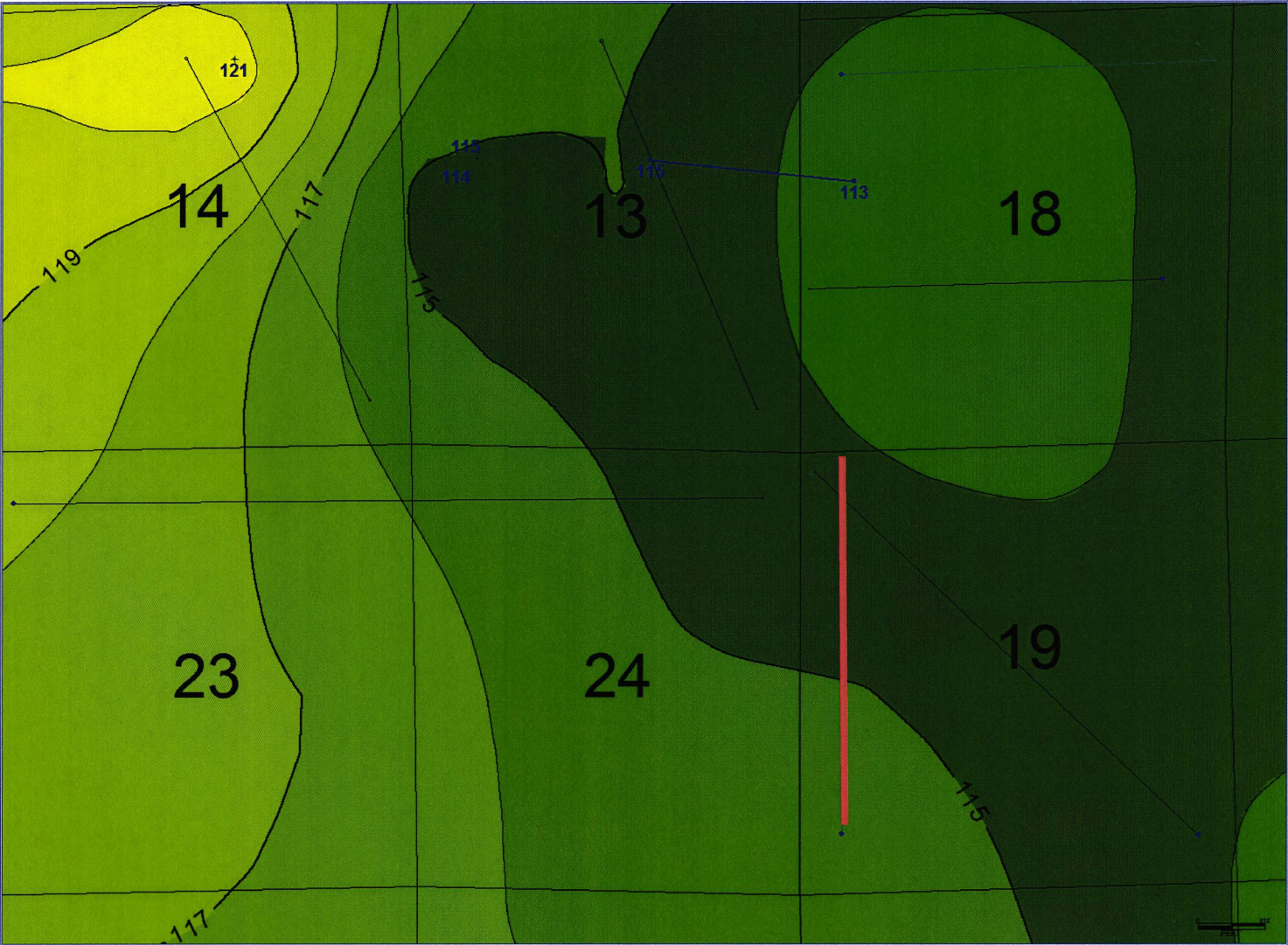
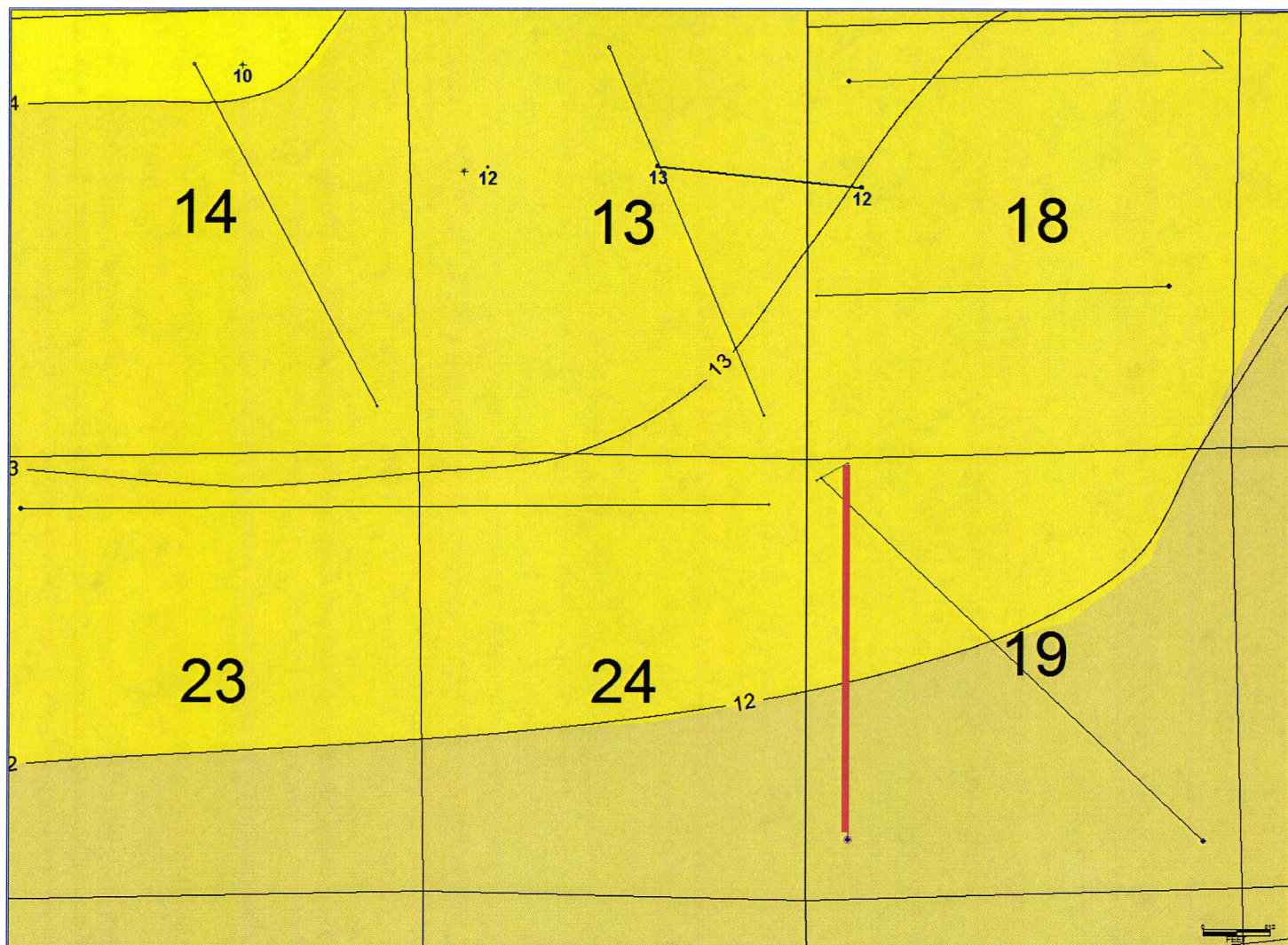


Exhibit G-7: Isopach Map – Niobrara isopach with isopach values posted. Lone Pine well highlighted with red line.



Exhibit G-8: Isopach Map – Codell isopach with isopach values posted. Lone Pine well highlighted with red line.



NOBLE ENERGY, INC.

Jenette Hilton – Engineering Testimony

Cause 535

Docket No. 1407-SP-2098

Greenhorn, Graneros, Niobrara and Codell Formations
Weld County, Colorado

July 28th, 2014 Colorado Oil and Gas Conservation Commission Hearing

My name is Jenette Hilton, and I am currently a Senior Production Engineer for Noble Energy Inc. working as an engineer in Prospect Development for the DJ Basin Business Unit. I received a Bachelor's of Science degree in Chemical Engineering from Colorado School of Mines. I have 10 years of experience in oil and gas engineering. I am familiar with the lands described, and the matters set forth in the July 28th, verified application ("Application").

In support of Noble's application in the above referenced docket, I am submitting the following exhibits. The exhibits are attached to my sworn testimony and form the basis of Noble's Application for an order establishing the Greenhorn, Graneros, Niobrara and Codell Formations underlying Section 19, of Township 9 North, Range 60 West 6th P.M., Weld County, Colorado, underlying the following lands (the "Application Lands"):

Township 9 North, Range 60 West, 6th P.M., Weld County, Colorado
Sections 19

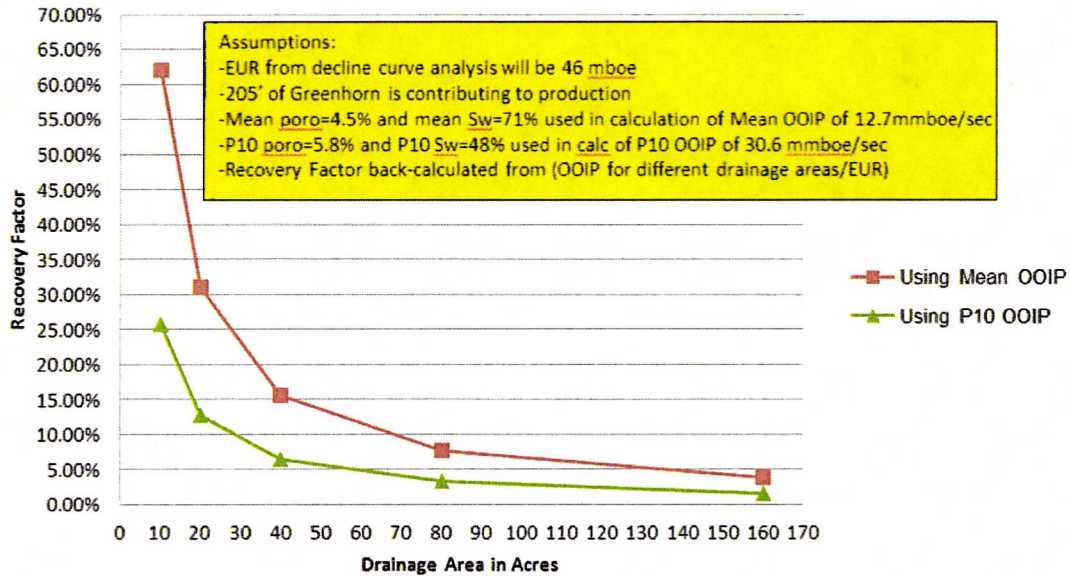
1. Exhibit E-1 – Calculations of OOIP & RF

Volumetric calculations of the Greenhorn formation indicate that the estimated recovery factor of hydrocarbons under the Application Lands using a horizontal lateral would be approximately 2-30% per well. Average recovery factor for the stimulated, propped and productive volume of a well remains the great unknown in all unconventional plays and this one is no exception. In this case data was utilized from vertical wells that are productive from the Greenhorn to back-calculate recovery factors (for a description of this technique, see the Exhibit E-1 Production Data). Based on estimates from vertical Greenhorn producers in the trend, we set the P90 and P10 recovery factor at 3% and 30% (Mean=13%). This remains a very wide distribution which reflects our uncertainty. See the full distribution for recovery factor in Figure 1 & Figure 2. Based on results seen in other parts of the field, by executing a horizontal lateral the additional reserves can be captured without the need for drilling individual vertical wells. Due to the relatively low percentage of estimated recovery factor in some cases, 300ft set-backs

from the section lines will promote efficient drainage, protect correlative rights and prevent waste. The horizontal well additionally reduces the amount of surface disturbance.

*Figure 1 Possible Recovery Factors
Vertical well, High EUR Case*

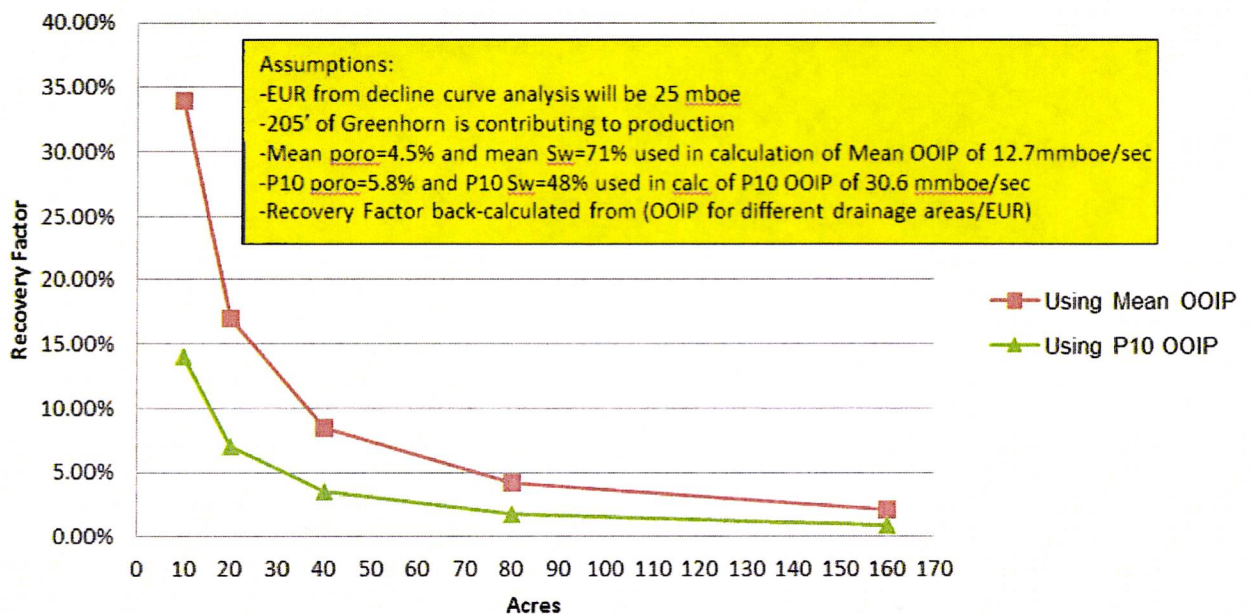
Larkridge 03-09 Recovery Factor for EUR = 46mboe



The 25 MBOE EUR case is shown in Figure 17. Again, if the drainage area is in the range of 20 acres to 80 acres then the recovery factor would be in the range of 2% to 18%.

*Figure 2 Possible Recovery Factors
Vertical well, Low EUR Case*

Larkridge 03-09 Recovery Factor for EUR = 25mboe



This was an excellent use of older data to help guide our estimate of recovery factor, which has an enormous impact on our recoverable resource estimate.

2. Exhibit E-2: Description & EUR

The Greenhorn and Graneros fit stratigraphically below the Niobrara and Codell and above the D-Sand and J-Sand. The Greenhorn has been productive from a limited number of vertical wells over the years, but industry is just beginning to test these formations in horizontal wells. These units are self-sourcing and are an active thermogenic petroleum system. The two deepest members of the Greenhorn are the most prospective. The Graneros is nearly 50% clay which is cause for concern in drilling and completions. The resource estimates for these two intervals are shown below. The Pg chance and the chance of a well reaching P50 EUR are also shown.


3. Exhibit E-3: Wellbore Diagram

Wellbore diagram depicts a standard horizontal well proposal and the precautions taken to protect ground water aquifers.

Based on the foregoing testimony and the attached exhibits, I conclude that the drilling, completion and production of a horizontal lateral well in the Application Lands will capture reserves from the reservoir and thereby prevent waste, while most importantly minimizing surface disturbance. This drilling, completion and production will also protect correlative rights.

The matters described herein were all conducted under my direction and control. I hereby swear that to the best of my knowledge and belief, all of the matters set forth herein, my testimony and in the exhibits are true, correct and accurate.

Dated this 15 day of July, 2014,


Jenette Hilton
Sr. Production Engineer
Noble Energy, Inc.
Wattenberg Business Unit

STATE OF COLORADO)
) ss.
CITY AND COUNTY OF DENVER)

The foregoing instrument was subscribed and sworn to before me this 15 day of July, 2014, by Jenette Hilton, Sr. Production Engineer, for Noble Energy, Inc.

Witness my hand and official seal.

My commission expires: April 01, 2017

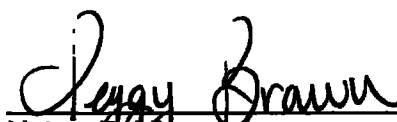
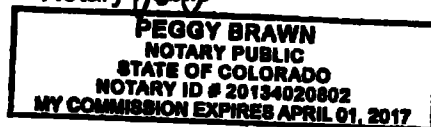

Notary Public


Exhibit E-2

EUR Predictions:

Untruncated Recoverable Resource Summary from this Assessment for the Greenhorn

P90: 0.02 mmboe Mean: 0.15 mmboe P10: 0.38 mmboe Pg: 85% P_{P50EUR}: 65%

Untruncated Recoverable Resource Summary from this Assessment for the Graneros

P90: 0.02 mmboe Mean: 0.12 mmboe P10: 0.29 mmboe Pg: 70% P_{P50EUR}: 62%

Exhibit E-3: Wellbore Diagram

