

CONFIDENTIAL

Form 3160-5  
(August 2007)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: July 31, 2010

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.**

5. Lease Serial No.  
NMNM 142963 NMNM 109386

6. If Indian, Allottee or Tribe Name  
N/A

**SUBMIT IN TRIPLICATE** - Other instructions on page 2. JUL 24 2014

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator  
Encana Oil & Gas (USA) Inc.

3a. Address  
370 17th Street, Suite 1700  
Denver, CO 80202

3b. Phone No. (include area code)  
720-876-5867

7. If Unit of CA/Agreement, Name and/or No.  
N/A

8. Well Name and No.  
Lybrook P28-2306 02H

9. API Well No.  
30-043-21177

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
SHL: 348' FSL and 1252' FEL Sec 28, T23N, R6W  
BHL: 2373' FNL and 400' FEL Sec 4, T22N, R6W

10. Field and Pool or Exploratory Area  
Lybrook Gallup

11. Country or Parish, State  
Sandoval, New Mexico

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Installation of Gas Lift
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Encana Oil & Gas (USA) Inc. is requesting authorization to install gas lift at the Lybrook P28-2306 02H well. Attached is a schematic of the pad with gas lift and the gas allocation procedure.

RCVD AUG 29 '14  
OIL CONS. DIV.

DIST. 3

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.

Name (Printed/Typed)  
Cristi Bauer

Title Operations Technologist

Signature

CRISTI BAUER

Date

7/23/14

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

John L. L. L.

Title

Petr. Eng

Date

8/26/14

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

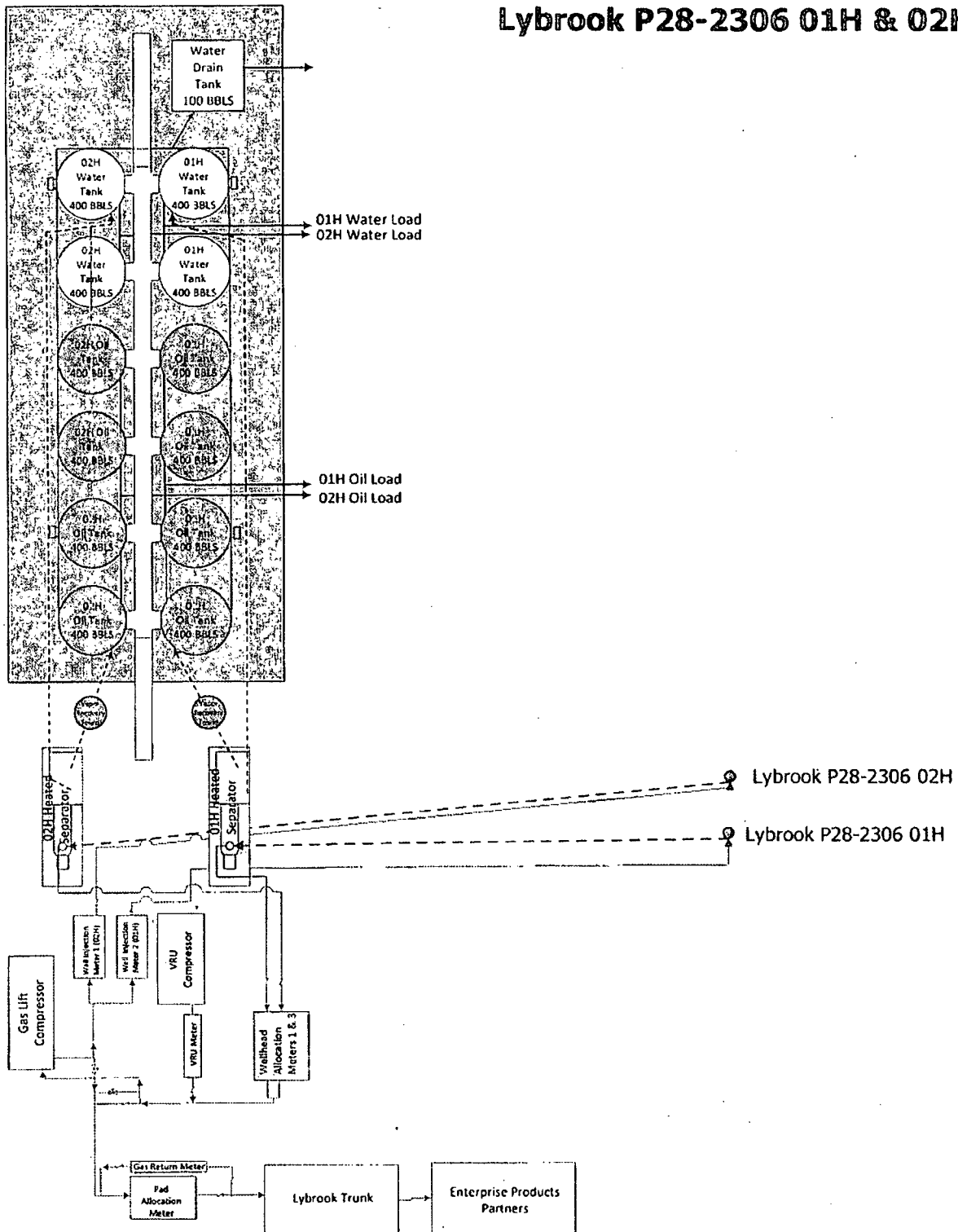
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

NMOCDA

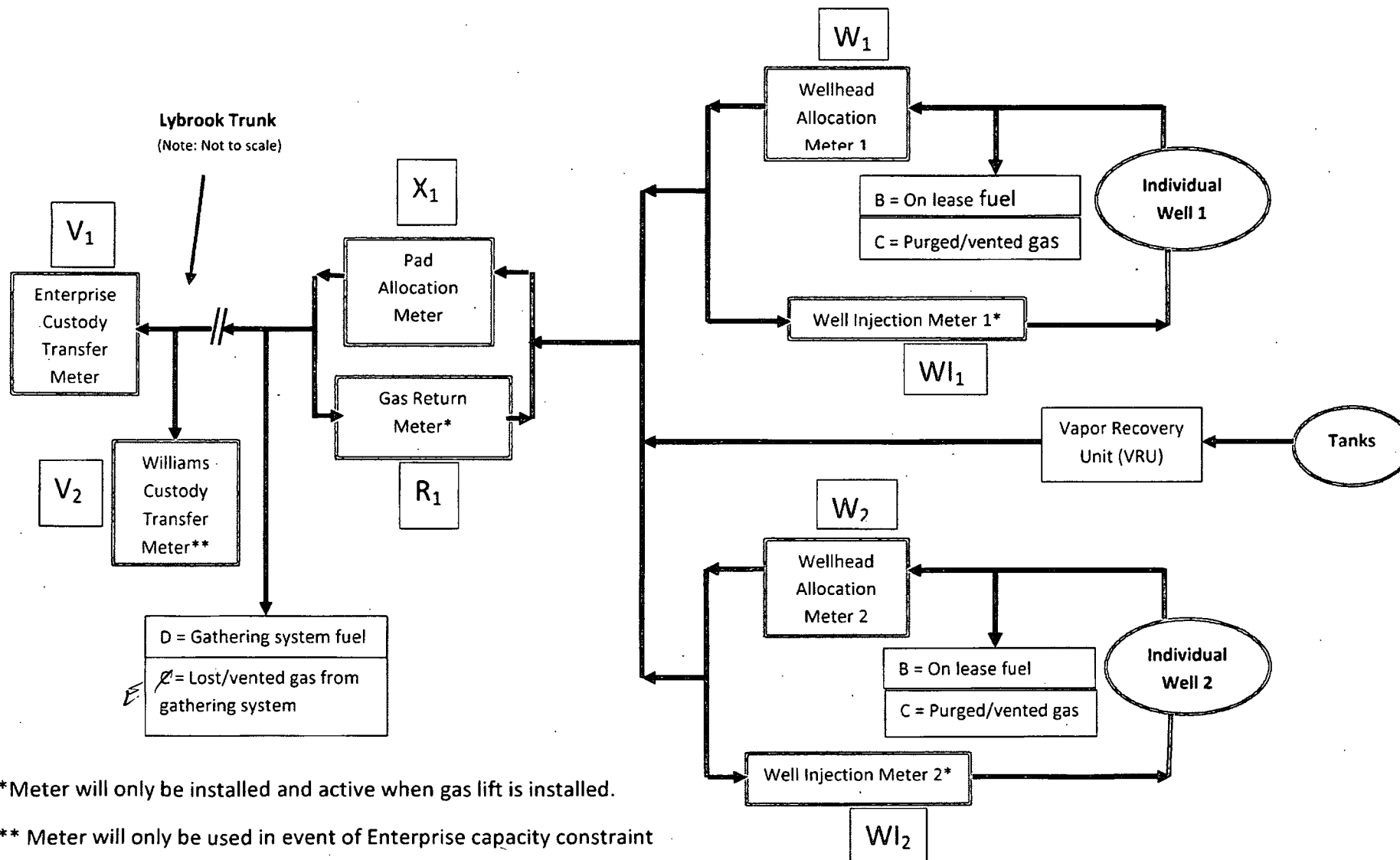
9

# Lybrook P28-2306 01H & 02H



NOT TO SCALE

## Gas Measurement Allocation Procedure for Multi-Well Pads



\*Meter will only be installed and active when gas lift is installed.

**\*\* Meter will only be used in event of Enterprise capacity constraint**

Attachment No. 5  
Encana Oil & Gas (USA) Inc.  
Lybrook Trunk Line #1, Gathering System  
San Juan County, New Mexico  
Amendment Dated May 15, 2014

**Base Data:**

$V_1$  = Gas Volume (MCF) from Custody Transfer Meter during allocation period (Enterprise)

$V_2$  = Gas Volume (MCF) from Custody Transfer Meter during allocation period (Williams)

$X_x$  = Gas Volume (MCF) from Pad Allocation Meter during allocation period. (Encana)

$R_x$  = Gas Volume (MCF) from Gas Return Meter at Well Pad (Encana)\*

$(X_x - R_x)$  = Gas Volume (MCF) for total Well Pad Production (Encana)

$W_x$  = Gas Volume (MCF) from Wellhead Allocation Meter at individual wells during allocation period. (Encana)

$WI_x$  = Gas Volume (MCF) from Well Injection Meter at individual wells during allocation period. (Encana)\*

$Y_1$  = Heating Value (BTU/scf) from Custody Transfer Meter during allocation period. (Enterprise)

$Y_2$  = Heating Value (BTU/scf) from Custody Transfer Meter during allocation period. (Williams)

$Z$  = Heating Value (BTU/scf) from individual Wellhead Allocation Meter and Well Injection Meter. (Encana)

Allocation Period is typically a calendar month and will be the same for all Well Pads and individual wells.

**Well Pad Gas Production** = A + B + C + D + E

A = Allocated Gas production off lease for Well Pad, MCF:  $[(X_1 - R_1) / ((X_1 - R_1) + (X_2 - R_2) + (X_n - R_n))] * (V_1 + V_2)$

Please note, gas production (MCF) for individual wells on a Well Pad is calculated using the formula:

$[(W_1 - WI_1) / ((W_1 - WI_1) + (W_2 - WI_2) + (W_n - WI_n))] * (X_1 - R_1)$

B = On lease fuel usage, MCF. Determined from equipment specification and operating conditions. This includes, but is not limited to, compression, vapor recovery unit (VRU) compression, burners, and pump jacks.

C = Lost and/or vented gas from well and/or lease equipment, MCF. Calculated using equipment and piping specifications and operating pressures.

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Lybrook Trunk Line #1, Gathering System  
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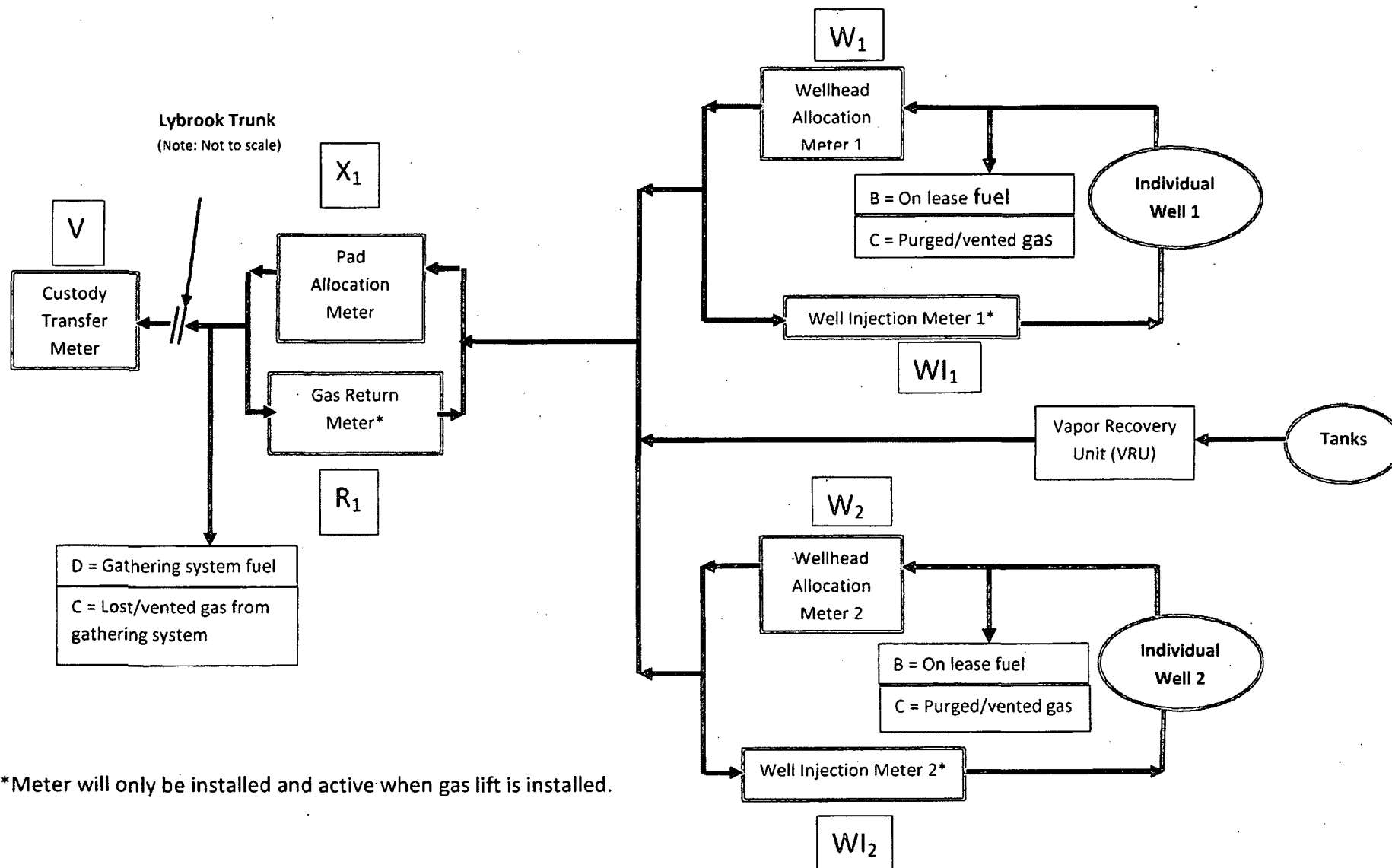
D = Allocated fuel from gathering system equipment, MCF. The total fuel required to operate gathering system equipment will be allocated to the Well Pads benefiting from the equipment using allocation factors determined by  $[(X_1-R_1)/((X_1-R_1)+(X_2-R_2)+(X_n-R_n))]$  and for individual wells using allocation factors determined by  $[(W_1-WI_1)/((W_1-WI_1)+(W_2-WI_2)+(W_n-WI_n))]$ .

E = Allocated volume of gas lost and/or vented from the gathering system, gathering system equipment, condensate collection, and water collection in MCF. The total volume will be determined using industry accepted procedures the time of the loss. The total volumes lost and/or vented will be allocated to the Well Pads affected using factors determined by  $[(X_1-R_1)/((X_1-R_1)+(X_2-R_2)+(X_n-R_n))]$ , and for individual wells using factors determined by  $[(W_1-WI_1)/((W_1-WI_1)+(W_2-WI_2)+(W_n-WI_n))]$ .

**Individual Well BTU's** =  $[(W_n-WI_n)*Z_n]/\{SUM((W_n-WI_n)*Z_n)\}*(V_1*Y_1+V_2*Y_2)*1000]$

Individual well gas heating values to be determined in accordance with BLM regulations.

### Gas Measurement Allocation Procedure for Multi-Well Pads



**Base Data:**

V = Gas Volume (MCF) from Custody Transfer Meter during allocation period (Enterprise Products Partners)

X<sub>x</sub> = Gas Volume (MCF) from Pad Allocation Meter during allocation period. (Encana)

R<sub>x</sub> = Gas Volume (MCF) from Gas Return Meter at Well Pad (Encana)\*

(X<sub>x</sub> - R<sub>x</sub>) = Gas Volume (MCF) for total Well Pad Production (Encana)

W<sub>x</sub> = Gas Volume (MCF) from Wellhead Allocation Meter at individual wells during allocation period. (Encana)

WI<sub>x</sub> = Gas Volume (MCF) from Well Injection Meter at individual wells during allocation period. (Encana)\*

Y = Heating Value (BTU/scf) from Custody Transfer Meter during allocation period. (Enterprise Products Partners)

Z = Heating Value (BTU/scf) from individual Wellhead Allocation Meter and Well Injection Meter. (Encana)

Allocation Period is typically a calendar month and will be the same for all Well Pads and individual wells.

**Well Pad Gas Production = A + B + C + D + E**

A = Allocated Gas production off lease for Well Pad, MCF:  $[(X_1 - R_1) / ((X_1 - R_1) + (X_2 - R_2) + (X_n - R_n))] * (V)$

Please note, gas production (MCF) for individual wells on a Well Pad is calculated using the formula:

$[(W_1 - WI_1) / ((W_1 - WI_1) + (W_2 - WI_2) + (W_n - WI_n))] * (X_1 - R_1)$

B = On lease fuel usage, MCF. Determined from equipment specification and operating conditions. This includes, but is not limited to, compression, vapor recovery unit (VRU) compression, burners, and pump jacks.

C = Lost and/or vented gas from well and/or lease equipment, MCF. Calculated using equipment and piping specifications and operating pressures.

D = Allocated fuel from gathering system equipment, MCF. The total fuel required to operate gathering system equipment will be allocated to the Well Pads benefiting from the equipment using allocation factors determined by  $[(X_1 - R_1) / ((X_1 - R_1) + (X_2 - R_2) + (X_n - R_n))]$  and for individual wells using allocation factors determined by  $[(W_1 - WI_1) / ((W_1 - WI_1) + (W_2 - WI_2) + (W_n - WI_n))]$ .

Attachment No. 5  
Encana Oil & Gas (USA) Inc.  
Lybrook Trunk Line #1, Gathering System  
Sandoval County, New Mexico  
Amendment Dated May 15, 2014

E = Allocated volume of gas lost and/or vented from the gathering system, gathering system equipment, condensate collection, and water collection in MCF. The total volume will be determined using industry accepted procedures the time of the loss. The total volumes lost and/or vented will be allocated to the Well Pads affected using factors determined by  $[(X_1-R_1)/((X_1-R_1)+(X_2-R_2)+(X_n-R_n))]$ , and for individual wells using factors determined by  $[(W_1-WI_1)/((W_1-WI_1)+(W_2-WI_2)+(W_n-WI_n))]$ .

**Individual Well BTU's** =  $[(W_n-WI_n)*Z_n]/\{SUM((W_n-WI_n)*Z_n)\}*(V*Y)*1000]$

Individual well gas heating values to be determined in accordance with BLM regulations.





## United States Department of the Interior

### BUREAU OF LAND MANAGEMENT

Farmington Field Office  
6252 College Blvd., Suite A  
Farmington, New Mexico 87402

IN REPLY REFER TO:

### **CONDITIONS OF APPROVAL FOR GAS LIFT & BUY BACK METER INSTALLATIONS:**

- The buy-back meter isolation valve, either up or down stream of the buy-back meter must be effectively sealed in the closed position to prevent produced gas from potentially by-passing the measurement and sales meter. In lieu of the seal requirement at least two check valves can be installed in line with the buy-back meter to prevent produced gas from potentially by-passing the measurement and sales meter.

Contact this office so a BLM witness verify installation of either the seal or check valves.

- If seals are installed, seal records must be maintained and made available upon request.
  - Post a Facility sign that **Clearly identifies both the sales and by-back meters.**