Form 3160 DEPARTMI	ED STATES ENT OF INTERIOR AND MANAGEMENT	FORM APPROVED Budget Bureau No 1004-0135 Expires: March 31, 1993			
SUNDRY NOTICE AND Do not use this form for proposals to drill or to deepen o	5 Lease Designation and Serial No NMSF-078766				
TO DRILL" for perm		6 If Indian, Allottee or Tribe Name			
SUBMIT IN T	RIPLICATE RECEIVED	7.	If Unit or CA, Agreement Designation Rosa Unit		
<ol> <li>Type of Well         Oil Well Gas Well X         Other</li> </ol>	JUL 21 2011	8	Well Name and No Rosa Unit 160D		
2. Name of Operator WILLIAMS PRODUCTION COMPANY	Farmington Field Office	9.	API Well No. 30-039-30689		
Address and Telephone No PO Box 640 Aztec, NM 87410-0640		10	Field and Pool, or Exploratory Area BLANCO MV/BASIN DK/BASIN MC		
4. Location of Well (Footage, Sec, T., R., M, or SURF: 1140' FSL & 1400' FWL BHL: 631' FSL & 679' FWL SEC 25 31N 6	• •	11	County or Parish, State R10 Arrıba, New Mexico		
CHECK APPROPRIA	IE BOX(s) TO INDICATE NATURE OF NOTICE, REF	PORT, OR C	OTHER DATA		
TYPE OF SUBMISSION	ТҮРЕ	OF ACTION	1		
Notice of Intent  X Subsequent Report	Abandonment Recompletion Plugging Back		Change of Plans New Construction Non-Routine Fracturing		
Final Abandonment	Casing Repair Altering Casing X Other REALLOCATION	Water Shut-Off Conversion to Injection Dispose Water (Note. Report results of multiple completion on Well Completion or Recompletion Report and Log form)			
8					
	Clearly state all pertinent details, and give pertinent dates, is and measured and true vertical depths for all markers and continuous profiler tool for allocation purposes on the	l zones pertii	nent to this work )*		
Williams proposes the following allocation:	on promot teer ter anotation purposes on the	11004 0111	2222		
			NO PRO A TOPY		
Mesaverde	68% 437	Mcf/d	E ROCEIVE S		
	18% 114	Mcf/d	12 0/0 20 5D 8		
Mancos			LONG COMPANY C		
Mancos Dakota	14% 91	Mcf/d	OIL CONS. DIN DIST.		
Mancos	14% 91 100% 642		ECCITION CONSTRAINTS		
Mancos Dakota	100% 642		ON CONS DIV DIST, 3 CON		

Title 18 U S C Section 1001, makes 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.

Title

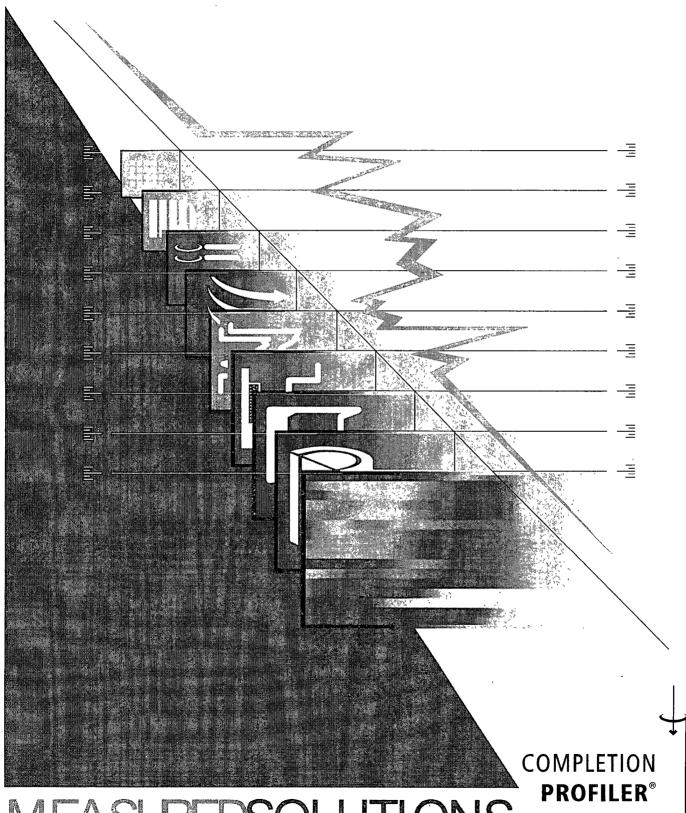
Approved by\_

Conditions of approval, if any

600

Date 7. 22.11

### Williams Production Company Rosa Unit #160D



MEASUREDSOLUTIONS





Company | Williams Production Company

Well Name | Rosa Unit #160D

Field Blanco Mesaverde/Basin Dakota

Location | Rio Arriba County, New Mexico

Customer Name | Michael Andrews

Date of Survey | May 17, 2011

Date of Analysis | May 20, 2011

Logging Engineer | Loren Healy

Analyst | Cole Hutchings

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful misconduct on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.





### Table of Contents

Survey Objectives
Logging Procedures
Well Information
Tool String
Well Log History
Results
Analysis Summary
Brief Description of Process
Model Results With Recorded Data
Production Rates At Surface Conditions
Flow Model at Downhole Conditions With Comparison of Theoretical Response to Recorded Data
Overlay of all Log Data
Apparent Fluid Velocity Derived from Spinner
Spinner Calibration Plots Relationship between R.P.S. and Fluid Velocity (fpm)
Well Information
Parameters used for Analysis
Definitions





### Survey Objectives

- Identify the source of water production.
- Identify gas producing intervals.
- Quantitative production profile.

### Logging Procedures

Date	Time	Comment
05/17	06:30	Arrive on location
05/17	05:30	Gauge run start
05/17	06:30	Gauge run stop
05/17	11:42	Program Completion Profile String
05/17	11:56	Start GIH pass
05/17	12:16	Stop GIH pass
05/17	12:21	Start logging passes
05/17	14:50	Stop logging passes
05/17	14:56	Start out of well pass
05/17	15:18	Stop out of well pass
05/17	15:23	Start download
05/17	15:44	Stop download
05/17	16:00	Rig down

Interval Logged: [From 5,396 to 8,047 ft.]

60 ft/min 90 ft/min





#### Well Information

Casing: 5.5" 17.0 lb/ft surface to 8,115 ft PBTD: 8,107 ft

Tubing: 2.375" 4.7 lb/ft surface to 5,417 ft

Perforations: 5,520; 5,522; 5,524; 5,535; 5,537; 5,539; 5,556; 5,558; 5,560; 5,570;

5,572; 5,574; 5,576; 5,578; 5,580; 5,582; 5,584; 5,586; 5,588; 5,590; 5,592; 5,594; 5,596; 5,598; 5,600; 5,602; 5,616; 5,618; 5,620; 5,622; 5,624; 5,626; 5,628; 5,630; 5,632; 5,634; 5,662; 5,664; 5,686; 5,688; 5,690; 5,692; 5,694; 5,696; 5,698; 5,700; 5,702; 5,704; 5,724; 5,726;

5,728; 5,730; 5,732 ft (Cliff House/Menefee)

5,762; 5,264; 5,266; 5,268; 5,270; 5,272; 5,274; 5,276; 5,281; 5,283; 5,293; 5,295; 5,810; 5,812; 5,814; 5,816; 5,818; 5,820; 5,822; 5,824; 5,826; 5,828; 5,830; 5,832; 5,834; 5,836; 5,838; 5,840; 5,842; 5,844; 5,846; 5,848; 5,850; 5,852; 5,854; 5,856; 5,858; 5,860; 5,862; 5,864; 5,868; 5,870; 5,872; 5,874; 5,886; 5,888; 5,892; 5,894; 5,896; 5,912;

5,868; 5,870; 5,872; 5,874; 5,886; 5,888; 5,892; 5,894; 5,896; 5,912; 5,914; 5,934; 5,936; 5,938; 5,942; 5,960; 5,962; 5,978; 5,980; 5,994;

5,996; 6,010; 6,012; 6,014; 6,016; 6,018; 6,030; 6,032 ft

(Point Lookout)

7,012; 7,022; 7,024; 7,029; 7,050; 7,060; 7,070; 7,080; 7,090; 7,096; 7,104; 7,116; 7,121; 7,130; 7,136; 7,146; 7,160; 7,170; 7,180; 7,192; 7,000; 7,

7,202; 7,208 ft (Upper Mancos)

7,267; 7,276; 7,284; 7,291; 7,300; 7,304; 7,309; 7,313; 7,317; 7,322; 7,329; 7,332; 7,338; 7,343; 7,351; 7,355; 7,361; 7,367; 7,373; 7,379;

7,388 ft

(Lower Mancos)

7,996; 8,000; 8,004; 8,008; 8,012; 8,016; 8,044; 8,048; 8,052; 8,056;

8,060; 8,064; 8,068; 8,072; 8,076; 8,080; 8,084; 8,087; 8,090; 8,093;

8,096 ft (Dakota)

Flowing tubing pressure at the time of logging: 112 psi

Daily average surface production reported at the time of logging:

gas: 644 Mscf/d water: N/A bpd





#### **Tool String**

The 1 11/16" Completion Profiler string comprised the following sensors:

Battery housing; RS-232/CCL; Memory/CPU; Gamma Ray; Pressure/Temperature Combo; Centralizer; Induction Collar Locator; Fluid Density; Centralizer; Spinner Flowmeter.

#### Well Log History

Log Date	Type of Survey			1	
06/22/10	Completion Profiler				 





#### Results

The following table summarizes the production from each producing zone.

				GAS / WATER PR	ODUCTION P			
Zone Intervals		rvals	Q-Gas	Qp-Gas	Percent of	Q-Water	Qp-Water	Percent of
	feet		MCFD	MCFD	Total	BFPD	BFPD	Total
Surface	to	5520	642 Mcf/d		100 %	5 bpd		100 %
\$- (V.M.)		Č	iffHouse/Menefee		63 %			70%
5520	to	5732	642 Mcf/d	401 M cf/d		5 bpd	3 bpd	
	, 3 <sup>2</sup>	13263	Point Lookout		6%			6 %
5762	to	6032	241 Mcf/d	36 Mcf/d		1 bpd	0 bpd	
F 12, 18	` , , , } <sup>2</sup> .		Upper Mancos		14 %.			(16 %)
7012	to	7208	204 Mcf/d	88 Mcf/d		1 bpd	1 bpd	
7 KA		( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	Lower Mancos		4 %			4 %
7267	to	7388	116 Mcf/d	26 Mcf/d		0 bpd	0 bpd	
. T. & K. K.		h (5.5)	Dakota		12 %			S 3.%
7996	to	8044	91 Mcf/d	80 Mcf/d		0 bpd	0 bpd	
Flow	Conti	ribution	from Below Log De	pth Mark Control	2,%			₹ <u>.</u> 0,%
8047	to	Below	11 Mcf/d		2 %	0 bpd		0 %