FORM 4 Rev 12/05

State of Colorado
Oil and Gas Conservation Cor

02541224

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax:(303)894-2109

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COGCC

SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry Information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

1. OGCC Operator Number: 96850
2. Name of Operator: Williams Production RMT Co.
3. Address: 1001 17th St., Suite 1200
   City: Denver State: CO Zip 80202
4. Contact Name: Howard Harris
   Phone: (303) 606-4086
   Fax: (303) 629-8268
5. API Number 05-103-11796-00
6. Well/Facility Name: Federal
7. Well/Facility Number RGU 41-1-298
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): NENE 1-T2S-98W Lot 21 6PM
9. County: Rio Blanco
10. Field Name: Sulphur Creek
11. Federal, Indian or State Lease Number: COC62053 Unit COC068239X

OGCC Facility ID Number

Complete the Attachment Checklist

	OP	OGCC
Survey Plat		
Directional Survey	X	
Surface Eqpmt Diagram		
Technical Info Page	X	
Other	X	

General Notice

X CHANGE OF LOCATION: **Attach New Survey Plat** (a change of surface qtr/qtr is substantive and requires a new permit)

RYAN GULCH UNIT COC 062053

	FNL/FSL		FEL/FWL	
Change of **Surface** Footage **from** Exterior Section Lines:		FSL		FWL
Change of **Surface** Footage **to** Exterior Section Lines:		FSL		FWL
Change of **Bottomhole** Footage **from** Exterior Section Lines:	231	FNL	603	FEL
Change of **Bottomhole** Footage **to** Exterior Section Lines:	159	FNL	631	FEL

attach directional survey

Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer NENE Lot 21 Sec 1 T2S R98W 6PM

Latitude
Longitude
Ground Elevation

Distance to nearest property line
Distance to nearest lease line 159'
Distance to nearest well same formation aprox 625'

Distance to nearest bldg, public rd, utility or RR
Is location in a High Density Area (rule 603b)? Yes/No NO
Surface owner consultation date:

GPS DATA:
Date of Measurement PDOP Reading Instrument Operator's Name

CHANGE SPACING UNIT

Formation	Formation Code	Spacing order number	Unit Acreage	Unit configuration

Remove from surface bond
Signed surface use agreement attached

CHANGE OF OPERATOR (prior to drilling):
Effective Date:
Plugging Bond: Blanket Individual

CHANGE WELL NAME **NUMBER**
From:
To:
Effective Date:

ABANDONED LOCATION:
Was location ever built? Yes No
Is site ready for Inspection? Yes No
Date Ready for Inspection:

NOTICE OF CONTINUED SHUT IN STATUS
Date well shut in or temporarily abandoned:
Has Production Equipment been removed from site? Yes No
MIT required if shut in longer than two years. Date of last MIT

SPUD DATE:

REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)

SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK *submit cbl and cement job summaries

Method used	Cementing tool setting/perf depth	Cement volume	Cement top	Cement bottom	Date

RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.
Final reclamation will commence on approximately
Final reclamation is completed and site is ready for inspection.

Technical Engineering/Environmental Notice

X Notice of Intent
Approximate Start Date: 11/1/11

Report of Work Done
Date Work Completed:

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

- Intent to Recomplete (submit form 2)
- X Change Drilling Plans
- Gross Interval Changed?
- X Casing/Cementing Program Change
- Request to Vent or Flare
- Repair Well
- Rule 502 variance requested
- Other:
- E&P Waste Disposal
- Beneficial Reuse of E&P Waste
- Status Update/Change of Remediation Plans for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Date: 11/1/11 Email: Howard.Harris@Williams.Com

Print Name: Howard Harris Title: Sr. Regulatory Specialist

COGCC Approved: Title: DWAE Date: 2/2/12

CONDITIONS OF APPROVAL, IF ANY:

FORM 4 Rev 12/05

TECHNICAL INFORMATION PAGE

FOR OGCC USE ONLY
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1. OGCC Operator Number: 96850 API Number: 05-103-11796-00
2. Name of Operator: Williams Production RMT Co OGCC Facility ID #
3. Well/Facility Name: Federal Well/Facility Number: RG 41-1-298
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): NENE Sec 1 T2S-R98W

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

Williams request permission to change the BHL as indicated on page 1
36# 9 5/8" Sfc Csg depth will be set at 3533', Cement to surface
11.6# 4 1/2" Prod Csg depth will be set at 12366'. (See attached cement and casing design)

See attached New Plat 1., Directional Plan and prog

Prepared: 10/25/11 ECS

GEOLOGIC & DRILLING PROGNOSIS

WELL NAME: Federal RGU 41-1-298
B5 Slot

LOCATION: Sec. 1-T2S-R98W
Ryan Gulch Unit
State Plane NAD83 Central

Surface:	2204775.5	1768871.3	X:Y
	-108.3350884	39.9103000	Long/Lat
Bottom hole:	2204733.1	1769502.0	X:Y
	-108.3353095	39.9120269	Long/Lat

Note: See plat for footages
Hardline Notes: HARDLINE 55' IN A DIRECTION OF NORTH 78 DEGREES EAST AT THE NE CORNER OF SECTION 1
Rig: Cyclone 29 **KB:** 21

COUNTY: RIO BLANCO STATE: COLORADO

ELEVATION: **PAD:** 6573 **GROUND:** n/a **KELLY BUSHING:** 6594

ESTIMATE TOPS:

Formation	MD	TVD (Surface)	TVD (Subsea)	Formation Notes
Uinta	surface			
Green River Fm	1022	1019	5575	
A Groove	1193	1189	5405	aquifer. Cement Basket @ 1450'
B Groove	1384	1379	5215	aquifer. Tapered Surface from 14.75 to 13.5 @ 1500'
Dissolution Surface	1670	1664	4930	possible lost circulation zone. Cmt Stage Tool @ 1550
Garden Gulch	2634	2624	3970	Cement Basket @ 1700' and 1850'
Orange Marker	2815	2804	3790	
Wasatch	3036	3024	3570	surface casing at 3536'
G' Sand	5436	5414	1180	possible lost circulation zone
Ft. Union	5778	5754	840	
Ohio Creek	7113	7084	-490	possible lost circulation zone
Mesaverde	7443	7414	-820	
Top Gas	8123	8094	-1500	
Cameo Coals	10713	10684	-4090	
Rollins SS	11143	11114	-4520	
Cozzette	11288	11259	-4665	vertical hole from top of Mesaverde to TD. Interval is 4930' long
Corcoran	11518	11489	-4895	
Upper Sego	11878	11849	-5255	
Lower Sego	12123	12094	-5500	
TD	12373	12344		

MUD LOGGING:
Type: **Remote Gas Unit**
Interval: **If one of first three wells drilled on pad, surface to TD. Otherwise base surf csg to TD.**

OPEN HOLE LOGS:
Specifics: **None**
Interval:
Training well:

CASED HOLE LOGS:
Specifics: **Baker RPM-3D Pulsed Neutron from plugged back depth to 6900', GR to surface**
Processing: **Emulation Triple Combo Using OH logs and training well**
Cement Evaluation: **Baker Hughes Radial Bond Log c/w CCL/GR from plugged back depth to surface shoe**

CSG & CEMENT PROGRAM:

	csg size (in)	depth set at	hole size (in)	cmt sxs	WOC (hrs)
Conductor	18	80	30	To Surface-Ready Mix	
Surface	9.625	3536	14.75/13.5	1416	8
Intermediate					
Liner or Production	4.5	12373	8.75/7.875	As determined at TD	

MUD PROGRAM:

FROM	TO	TYPE MUD	#/GAL	VIS	WL	CHEMICALS
0	3536	Spud/RCA	Water	45-50		
3536	12373	Water Based	8.0-9.5	40-50	8-10	

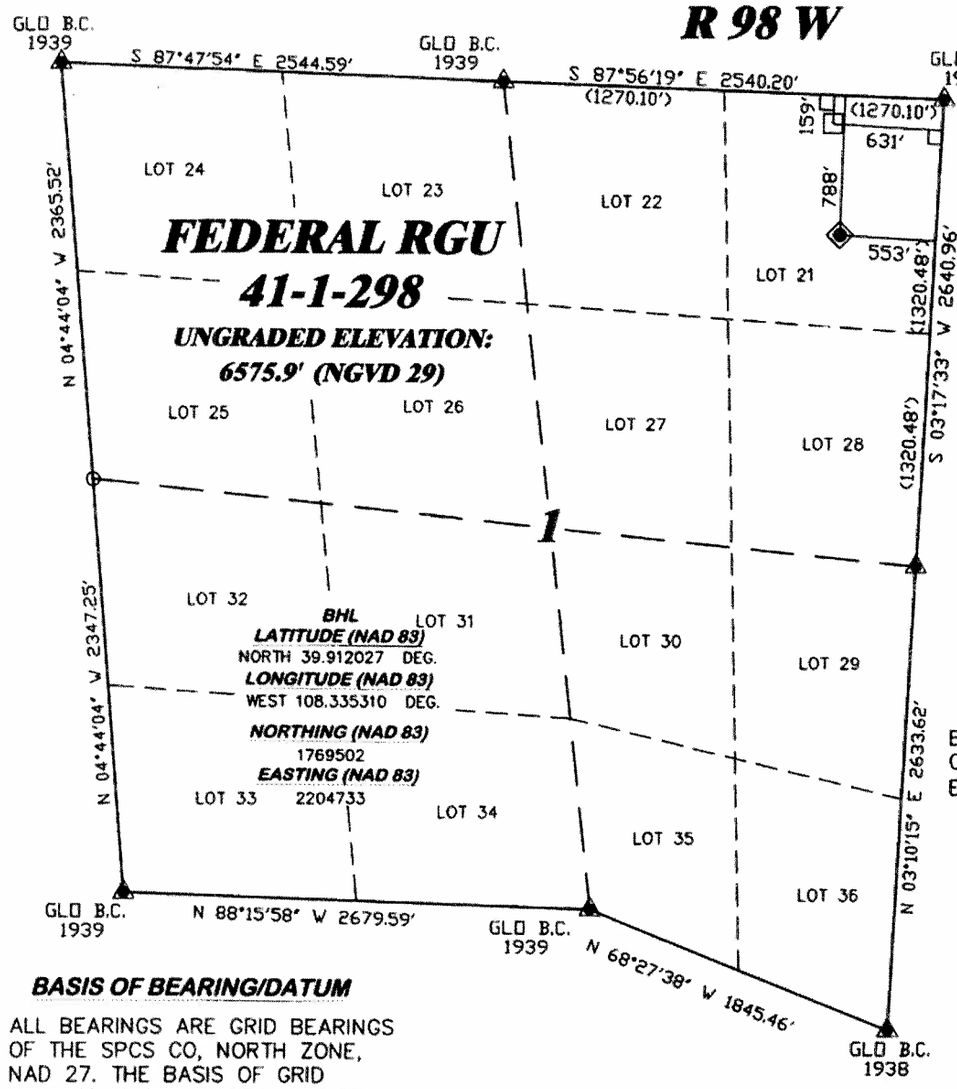
(Write mud added to system on tour sheets and report all mud mixed and daily cost in morning report)

LOST CIRCULATION: Report depth and bbls of mud lost on morning report and tour sheet - Any severe lost circulation problems should be reported immediately to well supervisor.

SURVEYS: Run every 100' on surface hole and trips unless otherwise instructed.

WILLIAMS GEOLOGISTS:

	Office	Home	Cell
Eric Stenberg	303- 606-4057	303-471-0091	303-517-9636
		eric.stenberg@williams.com	
Art Rowley	303- 606-4397	303-447-9695	303-408-4536
		art.rowley@williams.com	
Simon Cole	303- 606-4359	720-273-8281	720-273-8281
		simon.cole@williams.com	



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SCALE 1" = 1000'

T 2 S

LATITUDE (NAD 83)
NORTH 39.910300 DEG.
LONGITUDE (NAD 83)
WEST 108.335088 DEG.
NORTHING (NAD 83)
1768871.26
EASTING (NAD 83)
2204775.51

BASIS OF ELEVATION: NORTH 1/4 CORNER SECTION 1, T 2 S, R 98 W, ELEVATION = 6616.23'

LEGEND

- WELL LOCATION
- PREVIOUSLY FOUND MONUMENT
- DENOTES 90° TIE
- CALCULATED CORNER
- APPROXIMATE BHL

1000 500 0 1000 2000
SCALE FEET

BASIS OF BEARING/DATUM

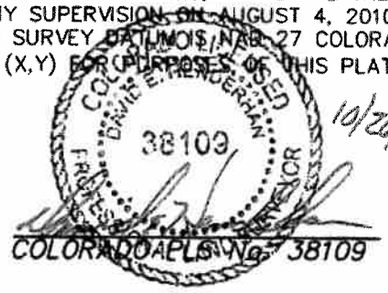
ALL BEARINGS ARE GRID BEARINGS OF THE SPCS CO, NORTH ZONE, NAD 27. THE BASIS OF GRID BEARING IS THE NORTH LINE OF THE NE 1/4 OF SEC. 1, BEING MONUMENTED WITH GLO BC'S. THAT BEARING BEING S 87°56'19" E

SURVEYOR'S STATEMENT

I, DAVID E. HENDERHAN, AN EMPLOYEE AND AGENT ON BEHALF OF D.R. GRIFFIN & ASSOCIATES, INC. STATE THE PLAT HEREON IS A CORRECT REPRESENTATION OF A SURVEY MADE UNDER MY SUPERVISION ON AUGUST 4, 2010 OF THE SHOWN FEDERAL RGU 41-1-298 AS STAKED ON THE GROUND. FIELD SURVEY DATUM IS NAD 27 COLORADO CENTRAL. VALUES HAVE BEEN CONVERTED TO NAD 83 COLORADO CENTRAL (X,Y) FOR PURPOSES OF THIS PLAT.

NOTES

GPS OPERATOR JOHN RICHARDSON
OBSERVED A PDOP OF 3.1.
ALL GPS OBSERVATIONS ARE IN COMPLIANCE WITH COGCC RULE NO. 215.
LAND USE: HIGH PLATEAU DESERT
NO IMPROVEMENTS WITHIN 400' RADIUS OF WELL SITE.



FEDERAL RGU 41-1-298 PAD

D.R. GRIFFIN & ASSOCIATES, INC.
(307) 362-5028 1414 ELK ST., ROCK SPRINGS, WY 82901

PLAT OF DRILLING LOCATION FOR WILLIAMS PRODUCTION RMT COMPANY

DRAWN: 9/14/06	SCALE: 1" = 1000'
REVISED: 10/25/11 - RAS	DRG JOB No. 14550
REVISED BHL LOCATION	EXHIBIT 1

788' F/ NL & 553' F/ EL, LOT 21, SECTION 1, T 2 S, R 98 W, 6th P.M.
RIO BLANCO COUNTY, COLORADO

CASING & CEMENTING PLAN

Operator: Williams Production RMT Company
Well Name & Number: Ryan Gulch Unit 41-1-298
Location: Ryan Gulch

Casing Design Calculations

Type of Casing	Size of Hole (inches)	Size of Casing (inches)	Weight per Foot (lbs/ft)	Grade	Thread	Interval (ft - ft)	Length (feet)	Setting Depth (TVD	Collapse (psi)	Burst (psi)	Tension (psi)
Surface	14.750	9.625	36.0	J-55	ST&C	0-3533	3,533	3,523	2,020	3,520	394,000
Production	8.750	4.500	11.6	P-110	LT&C	0-12366	12,366	12,344	7,580	10,690	279,000

Surface Casing Shoe		Production Casing Shoe	
Max MW =	9.0 ppg	Max MW =	9.5 ppg
HP =	1,649 psi	HP =	6,098 psi

True Vertical Depth = 12,344 ft
Bottom Hole Pressure = 5,555 psi
Gradient = 0.45 psi/ft
Max. Sur. Pressure = 2,839 psi
BOP Required = 3M System

Casing Safety Factors

Surface Casing	Pb = 1.24	Min = 1.000	OK > MIN
	Pc = 1.23	Min = 1.100	OK > MIN
	Sj = 3.11	Min = 1.600	OK > MIN
Production Casing	Pb = 3.77	Min = 1.000	OK > MIN
	Pc = 1.24	Min = 1.125	OK > MIN
	Sj = 1.94	Min = 1.600	OK > MIN

Cement Design Calculations

Estimating Cement for Ryan Gulch Wells (Permitting purpose only)

Critical Depths - Permitting Purposes Only

Casing/Formation	Measured Depth
Cement DV Tool	1,550 ft
Surface Casing	3,533
Top of Mesaverde	7,436 ft
Top of Gas	8,116 ft
Total Depth	12,366 ft

Production Cement Tops (Permitting Purposes Only)

Cement Slurry	Depth
1st Lead	3,333 ft
2nd Lead	7,236 ft
Tail	7,916 ft

Surface Cement	1st Stage Lead	1st Stage Tail	2nd Stage Tail
Volume, bbls	119	121	188
Volume, ft^3	670	681	1056
Volume, sacks	394	401	621
Slurry Weight, ppg	12.8	12.8	12.8
Slurry Yield, ft^3/sk	1.700	1.700	1.700
Mixwater, gal/sk	13.440	13.440	13.440
Annular Capacity	0.1214	0.1214	0.1214
	Total Sacks =	1,416	

Production Cement	1st Lead	2nd Lead	Tail
Volume, bbls	214	37	181
Volume, cu ft	1199	209	1014
Volume, sacks	416	115	467
Slurry Weight, ppg	11.0	12.7	13.5
Slurry Yield, cu ft/sk	2.880	1.820	2.170
Annular Capacity	0.0547	0.0547	0.0406
	Total Sacks =	998	

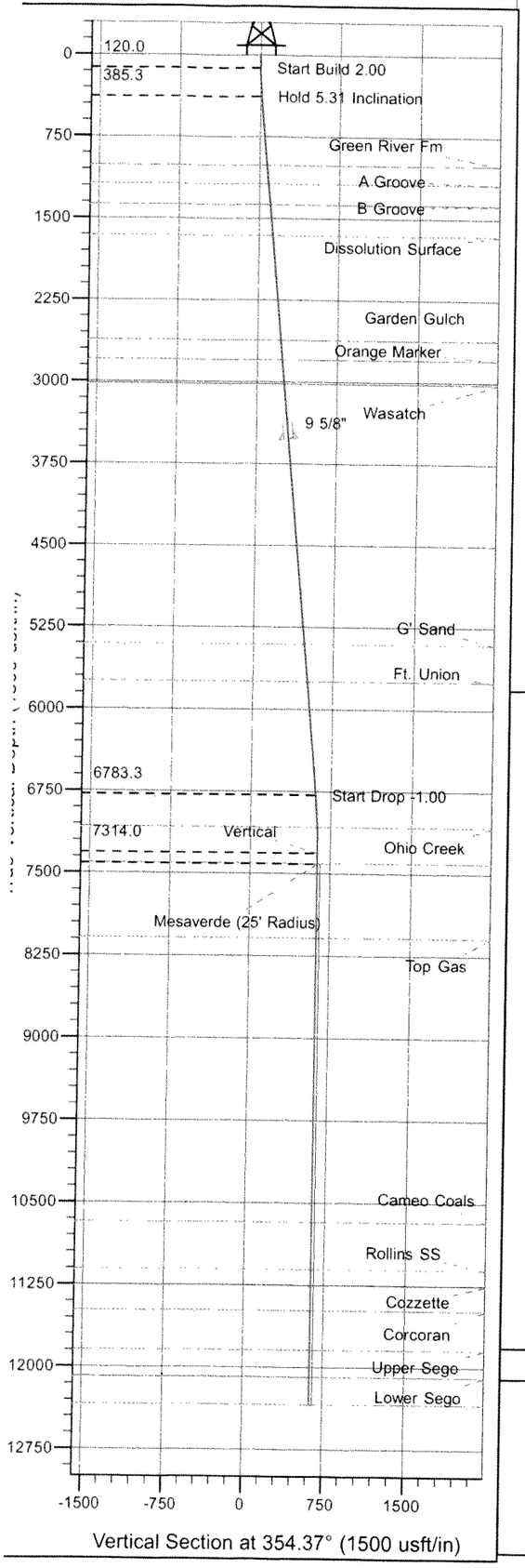
NOTES:

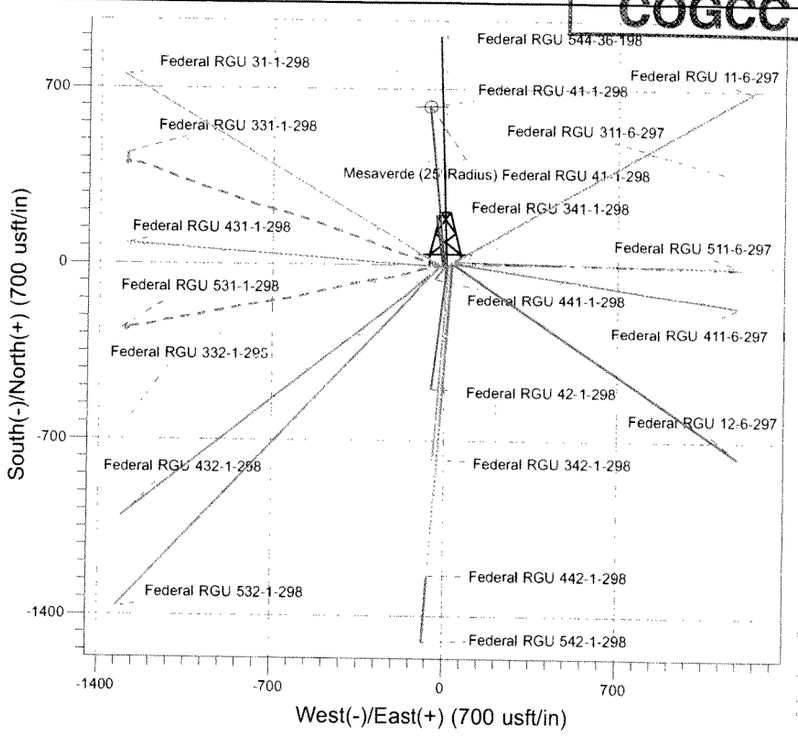
Surface Casing 14-3/4" hole - Cement to surface. Assumed 14-3/4" hole is actually tapered to 13-1/2".
Production Casing 8-3/4" hole - Cement 100' to last casing string. Assumed 8-3/4" hole is actually tapered to 7-7/8".
No excess is included in calculations.
Normal Surface excess is 40% over gauge hole for 1st Stage and 70% over gauge hole for 2nd Stage.
Normal Production excess is 45% over gauge hole.

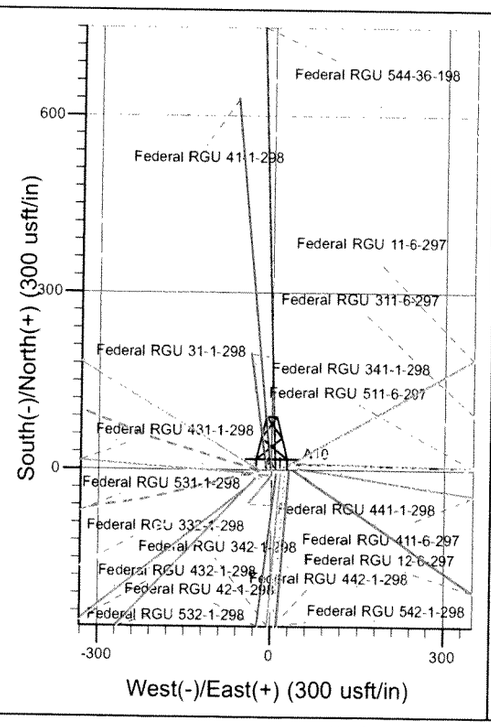
Surface Location: RGU 41-1-298 Pad
North American Datum 1983 , US State Plane 1983, Colorado Central Zone
Ground Elevation: 6573.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1768871.30	2204775.51	39° 54' 37.080 N	108° 20' 6.318 W	B5

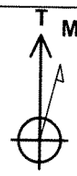
KELLY BUSHING @ 6594.0usft







Project: RG 01-02S-098W
Site: RGU 41-1-298 Pad
Well: Federal RGU 41-1-298
Plan #3 24Oct11 kjs



Azimuths to True North
Magnetic North: 10.53°

Magnetic Field
Strength: 52401.5snT
Dip Angle: 66.01°
Date: 9/10/2011
Model: IGRF2010

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
120.0	120.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.00
385.3	385.7	5.31	354.37	12.3	-1.2	12.3	12.3	Hold 5.31 Inclination
6783.3	6811.3	5.31	354.37	604.5	-59.6	607.5	607.5	Start Drop -1.00
7314.0	7342.8	0.00	0.00	629.0	-62.1	632.1	632.1	Vertical
7414.0	7442.8	0.00	0.00	629.0	-62.1	632.1	632.1	Mesaverde
12344.0	12372.8	0.00	0.00	629.0	-62.1	632.1	632.1	TD at 12372.8

PICEANCE HL NAD 83

RG 01-02S-098W
RGU 41-1-298 Pad
Federal RGU 41-1-298 - Slot B5

Federal RGU 41-1-298

Plan: Plan #2 24Oct11 kjs

Standard Planning Report - Geographic

24 October, 2011

Williams

Planning Report - Geographic

Database:	COMPASS-PICEANCE	**Local Co-ordinate Reference:**	Well Federal RGU 41-1-298 - Slot B5
Company:	PICEANCE HL NAD 83	**TVD Reference:**	KELLY BUSHING @ 6594.0usft
Project:	RG 01-02S-098W	**MD Reference:**	KELLY BUSHING @ 6594.0usft
Site:	RGU 41-1-298 Pad	**North Reference:**	True
Well:	Federal RGU 41-1-298	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Federal RGU 41-1-298		
Design:	Plan #2 24Oct11 kjs		

Project RG 01-02S-098W, Rio Blanco County, CO, RG 01-02S-098W

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site RGU 41-1-298 Pad

Site Position:		**Northing:**	1,768,871.26 usft	**Latitude:**	39° 54' 37.079 N
From:	Map	**Easting:**	2,204,775.51 usft	**Longitude:**	108° 20' 6.318 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	-1.788 °

Well Federal RGU 41-1-298 - Slot B5

Well Position	**+N/-S**	0.0 usft	**Northing:**	1,768,871.30 usft	**Latitude:**	39° 54' 37.080 N
	+E/-W	0.0 usft	**Easting:**	2,204,775.51 usft	**Longitude:**	108° 20' 6.318 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	6,573.0 usft

Wellbore Federal RGU 41-1-298

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	9/10/2011	10.528	66.010	52,402

Design Plan #2 24Oct11 kjs

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.0	0.0	0.0	354.37	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.000	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
385.7	5.31	354.37	385.3	12.3	-1.2	2.00	2.00	0.00	354.365	
6,811.3	5.31	354.37	6,783.3	604.5	-59.6	0.00	0.00	0.00	0.000	
7,342.8	0.00	0.00	7,314.0	629.0	-62.1	1.00	-1.00	0.00	180.000	
7,442.8	0.00	0.00	7,414.0	629.0	-62.1	0.00	0.00	0.00	0.000	Mesaverde (25' Radiu
12,372.8	0.00	0.00	12,344.0	629.0	-62.1	0.00	0.00	0.00	0.000	

Database:	COMPASS-PICEANCE	**Local Co-ordinate Reference:**	Well Federal RGU 41-1-298 - Slot B5
Company:	PICEANCE HL NAD 83	**TVD Reference:**	KELLY BUSHING @ 6594.0usft
Project:	RG 01-02S-098W	**MD Reference:**	KELLY BUSHING @ 6594.0usft
Site:	RGU 41-1-298 Pad	**North Reference:**	True
Well:	Federal RGU 41-1-298	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Federal RGU 41-1-298		
Design:	Plan #2 24Oct11 kjs		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,768,871.30	2,204,775.51	39° 54' 37.080 N	108° 20' 6.318 W
120.0	0.00	0.00	120.0	0.0	0.0	1,768,871.30	2,204,775.51	39° 54' 37.080 N	108° 20' 6.318 W
Start Build 2.00									
385.7	5.31	354.37	385.3	12.3	-1.2	1,768,883.59	2,204,774.68	39° 54' 37.201 N	108° 20' 6.334 W
Hold 5.31 Inclination									
1,022.1	5.31	354.37	1,019.0	70.9	-7.0	1,768,942.40	2,204,770.73	39° 54' 37.781 N	108° 20' 6.408 W
Green River Fm									
1,192.9	5.31	354.37	1,189.0	86.7	-8.5	1,768,958.18	2,204,769.67	39° 54' 37.936 N	108° 20' 6.428 W
A Groove									
1,383.7	5.31	354.37	1,379.0	104.2	-10.3	1,768,975.81	2,204,768.48	39° 54' 38.110 N	108° 20' 6.450 W
B Groove									
1,669.9	5.31	354.37	1,664.0	130.6	-12.9	1,769,002.27	2,204,766.70	39° 54' 38.371 N	108° 20' 6.483 W
Dissolution Surface									
2,634.0	5.31	354.37	2,624.0	219.5	-21.7	1,769,091.37	2,204,760.71	39° 54' 39.249 N	108° 20' 6.596 W
Garden Gulch									
2,814.8	5.31	354.37	2,804.0	236.2	-23.3	1,769,108.08	2,204,759.59	39° 54' 39.414 N	108° 20' 6.617 W
Orange Marker									
3,035.8	5.31	354.37	3,024.0	256.5	-25.3	1,769,128.50	2,204,758.21	39° 54' 39.615 N	108° 20' 6.643 W
Wasatch									
3,537.9	5.31	354.37	3,524.0	302.8	-29.9	1,769,174.91	2,204,755.09	39° 54' 40.072 N	108° 20' 6.702 W
9 5/8"									
5,436.1	5.31	354.37	5,414.0	477.8	-47.1	1,769,350.33	2,204,743.30	39° 54' 41.801 N	108° 20' 6.923 W
G' Sand									
5,777.6	5.31	354.37	5,754.0	509.2	-50.2	1,769,381.89	2,204,741.18	39° 54' 42.112 N	108° 20' 6.963 W
Ft. Union									
6,811.3	5.31	354.37	6,783.3	604.5	-59.6	1,769,477.42	2,204,734.75	39° 54' 43.054 N	108° 20' 7.084 W
Start Drop -1.00									
7,112.7	2.30	354.37	7,084.0	624.5	-61.6	1,769,497.39	2,204,733.41	39° 54' 43.251 N	108° 20' 7.109 W
Ohio Creek									
7,342.8	0.00	0.00	7,314.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
Vertical									
7,442.8	0.00	0.00	7,414.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
Mesaverde - Mesaverde - Mesaverde (25' Radius) Federal RGU 41-1-298 - Northeast Hardline Federal RGU 41-1-298									
8,122.8	0.00	0.00	8,094.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
Top Gas									
10,712.8	0.00	0.00	10,684.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
Cameo Coals									
11,142.8	0.00	0.00	11,114.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
Rollins SS									
11,287.8	0.00	0.00	11,259.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
Cozzette									
11,517.8	0.00	0.00	11,489.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
Corcoran									
11,877.8	0.00	0.00	11,849.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
Upper Sego									
12,122.8	0.00	0.00	12,094.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
Lower Sego									
12,372.8	0.00	0.00	12,344.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W
TD at 12372.8 - TD									

Database:	COMPASS-PICEANCE	**Local Co-ordinate Reference:**	Well Federal RGU 41-1-298 - Slot B5
Company:	PICEANCE HL NAD 83	**TVD Reference:**	KELLY BUSHING @ 6594.0usft
Project:	RG 01-02S-098W	**MD Reference:**	KELLY BUSHING @ 6594.0usft
Site:	RGU 41-1-298 Pad	**North Reference:**	True
Well:	Federal RGU 41-1-298	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Federal RGU 41-1-298		
Design:	Plan #2 24Oct11 kjs		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Mesaverde (25' Radius)	0.00	0.00	7,414.0	629.0	-62.1	1,769,502.00	2,204,733.10	39° 54' 43.296 N	108° 20' 7.115 W	
- plan hits target center										
- Circle (radius 25.0)										
Northeast Hardline Fede	0.00	0.00	7,414.0	557.6	-35.6	1,769,429.80	2,204,757.30	39° 54' 42.591 N	108° 20' 6.775 W	
- plan misses target center by 76.1usft at 7442.8usft MD (7414.0 TVD, 629.0 N, -62.1 E)										
- Polygon										
Point 1			7,414.0	17.1	47.0	1,769,445.43	2,204,804.81			True
Point 2			7,414.0	217.1	47.0	1,769,645.34	2,204,811.05			True
Point 3			7,414.0	17.1	247.0	1,769,439.18	2,205,004.72			True

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
3,537.9	3,524.0	9 5/8"	9.625	13.500

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,022.1	1,019.0	Green River Fm			
1,192.9	1,189.0	A Groove			
1,383.7	1,379.0	B Groove			
1,669.9	1,664.0	Dissolution Surface			
2,634.0	2,624.0	Garden Gulch			
2,814.8	2,804.0	Orange Marker			
3,035.8	3,024.0	Wasatch			
5,436.1	5,414.0	G' Sand			
5,777.6	5,754.0	Ft. Union			
7,112.7	7,084.0	Ohio Creek			
7,442.8	7,414.0	Mesaverde			
8,122.8	8,094.0	Top Gas			
10,712.8	10,684.0	Cameo Coals			
11,142.8	11,114.0	Rollins SS			
11,287.8	11,259.0	Cozzette			
11,517.8	11,489.0	Corcoran			
11,877.8	11,849.0	Upper Sego			
12,122.8	12,094.0	Lower Sego			
12,372.8	12,344.0	TD		0.000	

Database:	COMPASS-PICEANCE	**Local Co-ordinate Reference:**	Well Federal RGU 41-1-298 - Slot B5
Company:	PICEANCE HL NAD 83	**TVD Reference:**	KELLY BUSHING @ 6594.0usft
Project:	RG 01-02S-098W	**MD Reference:**	KELLY BUSHING @ 6594.0usft
Site:	RGU 41-1-298 Pad	**North Reference:**	True
Well:	Federal RGU 41-1-298	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Federal RGU 41-1-298		
Design:	Plan #2 24Oct11 kjs		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
120.0	120.0	0.0	0.0	Start Build 2.00
385.7	385.3	12.3	-1.2	Hold 5.31 Inclination
6,811.3	6,783.3	604.5	-59.6	Start Drop -1.00
7,342.8	7,314.0	629.0	-62.1	Vertical
7,442.8	7,414.0	629.0	-62.1	Mesaverde
12,372.8	12,344.0	629.0	-62.1	TD at 12372.8