

Rulison Monitoring Results **Noble Energy Well BM 35-12**

Well: Gas production well Battlement Mesa 35-12, API # 05-045-10412. (Pad 35 is near the Rulison, CO, Site)

Operator: Noble Energy, Incorporated

Sampler: U.S. Department of Energy, Office of Legacy Management, Grand Junction, CO.

Date of Sampling Event: August 15, 2007

Samples of natural gas and produced water were collected from production well BM 35-12. Details concerning this well are listed in Table 1. A description of the samples collected is found in Table 2.

Table 1. Well BM 35-12, API # 05-045-10412

Sample Point	Location	Sea Level Elevation (feet)	Perforation Interval (feet)	Distance (Feet) from		Subsurface		Distance from GZ (miles)	Comment
				N section Line (FNL)	E section Line (FEL)	Latitude	Longitude		
Surface Collection	NENW S35 T7S R95W	9238	---	778.54	2129.19	39.398876	-107.943956	1.07	NAD 83
Subsurface Location	NA	-85.5	1033	NA	NA	NA	NA	NA	

NA: Not available

The subsurface elevation is at the midpoint of the perforation interval.

Link to Colorado Oil and Gas Conservation Commission information.

Well: BM 35-12 <http://oil-gas.state.co.us/cogis/FacilityDetail.asp?facid=04510412&type=WELL>

Table 2. Sample Description

Sample No.	Matrix	Sample Description
NDC 641	Gas	Gas-phase sample (supplied collection container — BBQ-style LP tank); after flushing, collected sample from gas line ¹ . The gas-line input sample pressure was 175 psi.
NDC 642	Water	Production water sample from gas-phase; collected from the accumulation tank with a thief sampler device by J. Weeks and transferred to a 1-L HDPE sample bottle.
NDC 643	Water	Production water sample from gas-phase; collected at the separator, near the gas line sample point.

¹The perforated sections of the gas producing well 35-12 are unknown.

The natural gas sample was submitted to Isotech Laboratories in Champaign, Illinois for natural gas analysis and the determination of carbon-14 and tritium. The gas analysis results are listed in Table 3.

The water samples were submitted to Paragon Analytics in Fort Collins, Colorado for the determination of tritium. The results are listed in Tables 4 and 5.

Table 3. Natural Gas Sample NDC 641 Results, Isotech Laboratories

RESULTS REPORT

RIN: 07081103

Site: Rulison Site

Location: 35-12

Ticket Number: NDC 641

Report Date: 3/4/2008

Parameter	Units	Sample		Result	Qualifiers			Standard ²
		Date	ID		Lab	Data	QA	
Carbon Monoxide	percent	8/15/2007	N001	nd ¹	U		#	
Hydrogen Sulfide	percent	8/15/2007	N001	nd	U		#	
Helium	percent	8/15/2007	N001	0.0029			#	
Hydrogen	percent	8/15/2007	N001	0.0034			#	
Argon	percent	8/15/2007	N001	nd	U		#	
Oxygen	percent	8/15/2007	N001	nd	U		#	
Nitrogen	percent	8/15/2007	N001	0.038			#	
Carbon Dioxide	percent	8/15/2007	N001	4.05			#	
Methane	percent	8/15/2007	N001	90.11			#	
Ethane	percent	8/15/2007	N001	3.99			#	
Ethylene	percent	8/15/2007	N001	nd	U		#	
Propane	percent	8/15/2007	N001	1.04			#	
Isobutane	percent	8/15/2007	N001	0.221			#	
Butane	percent	8/15/2007	N001	0.203			#	
Isopentane	percent	8/15/2007	N001	0.0860			#	
Pentane	percent	8/15/2007	N001	0.0615			#	
Hexanes	percent	8/15/2007	N001	0.199			#	
Carbon-14	Percent modern carbon	8/15/2007	N001	0.3	U		#	
Tritium	pCi/L methane	8/15/2007	N001	0.057	U		#	

¹ Not detected.

² There are no applicable standards for natural gas.

Table 4. Water Sample NDC 642 Results, Paragon Analytics

RESULTS REPORT

RIN: 07081112

Site: Rulison Site

Location: 35-12

Ticket Number: NDC 642

Report Date: 3/4/2008

Parameter	Units	Sample		Result	Qualifiers			Standard ¹
		Date	ID		Lab	Data	QA	
Tritium	pCi/L	8/15/2007	N001	-36.5	U		#	20,000

¹USEPA Primary Radionuclide Drinking Water Standard.

Table 5. Water Sample NDC 643 Results, Paragon Analytics

RESULTS REPORT

RIN: 07081112

Site: Rulison Site

Location: 35-12

Ticket Number: NDC 643

Report Date: 3/4/2008

Parameter	Units	Sample		Result	Qualifiers			Standard ¹
		Date	ID		Lab	Data	QA	
Tritium	pCi/L	8/15/2007	N001	185	U		#	20,000

¹USEPA Primary Radionuclide Drinking Water Standard.

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

U Analytical result below detection limit.

DATA QUALIFIERS:

F Low flow sampling method used. G Possible grout contamination, pH > 9.
 J Estimated value.
 L Less than 3 bore volumes purged prior to sampling. Q Qualitative result due to sampling technique.
 R Unusable result.
 U Parameter analyzed for but was not detected. X Location is undefined.

QA QUALIFIER:

Validated at Level 1 according to quality assurance guidelines.