



KANSAS CORPORATION COMMISSION 1107574  
OIL & GAS CONSERVATION DIVISION

Form ACO-1  
June 2009

Form Must Be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 31341  
Name: Craig, Ward dba Craig Oil Company  
Address 1: 15 S MAIN  
Address 2:  
City: RUSSELL State: KS Zip: 67665 + 2901  
Contact Person: WARD CRAIG  
Phone: ( 785 ) 483-1543  
CONTRACTOR: License # 33905  
Name: Royal Drilling Inc  
Wellsite Geologist: FRANCIS WHISLER  
Purchaser:

Designate Type of Completion:

- New Well  Re-Entry  Workover  
 Oil  WSW  SWD  SLOW  
 Gas  D&A  ENHR  SIGW  
 OG  GSW  Temp. Abd.  
 CM (Coal Bed Methane)  
 Cathodic  Other (Core, Expl., etc.):

If Workover/Re-entry: Old Well Info as follows:

Operator:  
Well Name:  
Original Comp. Date: Original Total Depth:  
 Deepening  Re-perf.  Conv. to ENHR  Conv. to SWD  
 Conv. to GSW  
 Plug Back: Plug Back Total Depth  
 Commingled Permit #:  
 Dual Completion Permit #:  
 SWD Permit #:  
 ENHR Permit #:  
 GSW Permit #:

11/16/2011	11/22/2011	12/20/2012
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-167-23755-00-00  
Spot Description:  
N2 NE NW Sec. 23 Twp. 15 S. R. 14  East  West  
330 Feet from  North /  South Line of Section  
1980 Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE  NW  SE  SW

County: Russell  
Lease Name: H.J. Mai Well #: 4  
Field Name:

Producing Formation: ARBUCKLE  
Elevation: Ground: 1910 Kelly Bushing: 1918  
Total Depth: 3420 Plug Back Total Depth:  
Amount of Surface Pipe Set and Cemented at: 920 Feet  
Multiple Stage Cementing Collar Used?  Yes  No  
If yes, show depth set: Feet  
If Alternate II completion, cement circulated from:  
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: 5800 ppm Fluid volume: 85 bbls  
Dewatering method used: Evaporated  
Location of fluid disposal if hauled offsite:  
Operator Name:  
Lease Name: License #:  
Quarter Sec. Twp. S. R.  East  West  
County: Permit #:

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Letter of Confidentiality Received  
Date:  
 Confidential Release Date:  
 Wireline Log Received  
 Geologist Report Received  
 UIC Distribution  
ALT  I  II  III Approved by: Deanna Garrison Date: 01/16/2013



1107574

Operator Name: Craig, Ward dba Craig Oil Company Lease Name: H.J. Mai Well #: 4  
 Sec. 23 Twp. 15 S. R. 14  East  West County: Russell

**INSTRUCTIONS:** Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed. Attach complete copy of all Electric Wire-line Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Electric Log Run <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Submitted Electronically <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If no, Submit Copy)</i>  List All E. Logs Run:  <b>RAG LOG</b>	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Name</th> <th style="text-align: left;">Top</th> <th style="text-align: left;">Datum</th> </tr> </thead> <tbody> <tr> <td>ANHYDRITE</td> <td>920</td> <td>1000</td> </tr> <tr> <td>TOPEKA</td> <td>2818</td> <td>-902</td> </tr> <tr> <td>LANSING</td> <td>3112</td> <td>-1194</td> </tr> <tr> <td>BKC</td> <td>3342</td> <td>-1426</td> </tr> <tr> <td>ARBUCKLE</td> <td>3360</td> <td>-1444</td> </tr> </tbody> </table>	Name	Top	Datum	ANHYDRITE	920	1000	TOPEKA	2818	-902	LANSING	3112	-1194	BKC	3342	-1426	ARBUCKLE	3360	-1444
Name	Top	Datum																	
ANHYDRITE	920	1000																	
TOPEKA	2818	-902																	
LANSING	3112	-1194																	
BKC	3342	-1426																	
ARBUCKLE	3360	-1444																	

CASING RECORD <input checked="" type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
SURFACE	.6250	8.6250	23	920	COMMON	350	3% CAL.7%GEL

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
___ Perforate				
___ Protect Casing	-			
___ Plug Back TD				
___ Plug Off Zone	-			

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____		Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date of First, Resumed Production, SWD or ENHR. _____		Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) _____	
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls. Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5) (Submit ACO-4)</i> <input type="checkbox"/> Other (Specify) _____	PRODUCTION INTERVAL: _____ _____
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# QUALITY OILWELL CEMENTING, INC.

Phone 785-483-2025  
 Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 076

Date	11-22-11	Sec. 23	Twp. 15	Range 14	County	Russell	State	KS	On Location	Finish	11:30p
Lease	H. S. Mai	Well No.	4	Location		Russell S to Winterset R 1/8 W 5. nH					
Contractor	Royal #2				Owner		To Quality Oilwell Cementing, Inc.				
Type Job	Production String				You are hereby requested to rent cementing equipment and furnish		cementer and helper to assist owner or contractor to do work as listed				
Hole Size	7 7/8	T.D.		3420	Charge		To Crag Oil				
Csg.	5 1/2	Depth		3425	Street						
Tbg. Size		Depth			City		State				
Tool		Depth			The above was done to satisfaction and supervision of owner agent or contractor						
Cement Left in Csg.		Shoe Joint		20.73	Cement Amount Ordered		180 cum 10% Salt 5% G. l. son				
Meas Line		Displace		83BC	500 gal mud clear						

**EQUIPMENT**

Pumptrk	5	No.	Cement Helper	Crag	Common	180
Bulktrk		No.	Driver	Daic	Poz. Mix	
Bulktrk	14	No.	Driver	Trison	Gel.	

**JOB SERVICES & REMARKS**

Remarks:		Calcium	
Flat Hole	309K	Hulls	
Mouse Hole	153K	Salt	15
Centralizers		Flowseal	
Baskets		Kol-Seal	900#
DV or Port Collar	3425	Mud CLR 48	500
5 1/2 size insert	3404	CFL-117 or CD110 CAF 38	
Est. Condition on Pump		Sand	205
500 gal mud clear 10% salt		Handling	
Very Rattling Messle. cement		Mileage	
5 7/2 w 1355K. Open lines &		<b>FLOAT EQUIPMENT</b>	
Displace Plug. Plug (air) @		Guide Shoe	1 5 1/2
1400# Release Pressure Dry.		Centralizer	6 Turbo's
		Baskets	1
		AFU Inserts	1
		Float Shoe	16 in. 1 chand
		Latch Down	Rubber Plug

Float Hole

Thruulls

Pumptrk Charge	
Mileage	11 prod Long String
Tax	
Discount	

# QUALITY OILWELL CEMENTING, INC.

Phone 785-483-2025  
785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 121

Date	11-17-11	Sec.	Twp.	Range	County	State	On Location	Finish	
Lease	H S Main	Well No.	A	Location					7/15/11
Contractor	Royal Drilling Rig	Owner					To Quality Oilwell Cementing, Inc.		
Type Job	Surface	You are hereby requested to rent cementing equipment and furnish					cementer and helper to assist owner or contractor to do work as listed		
Hole Size	12 1/2	T.D.	920	Charge To					Cringle
Csg.	8 1/2	Depth	900	Street					
Tbg. Size		Depth		City					State
Tool		Depth		The above was done to satisfaction and supervision of owner agent or contract					
Cement Left in Csg.		Shoe Joint	15	Cement Amount Ordered					350 (Common)
Meas Line		Displace	57.2						

### EQUIPMENT

Pumptrk	9	No.	Cementer	
			Helper	
Bulktrk	13	No.	Driver	
			Driver	
Bulktrk		No.	Driver	
			Driver	

2 1/2  
Common 350  
Poz. Mix  
Gel. 7  
Calcium 13

### JOB SERVICES & REMARKS

Remarks:

Rat Hole

Mouse Hole

Centralizers

Baskets

D/V or Port Collar

Hulls

Salt

Flowseal

Kol-Seal

Mud CLR 48

CFL-117 or CD110 CAF 38

Sand

Handling 370

Mileage

### FLOAT EQUIPMENT

Guide Shoe

Centralizer

Baskets

AFU Inserts

Float Shoe

Latch Down

Pumptrk Charge

Mileage //

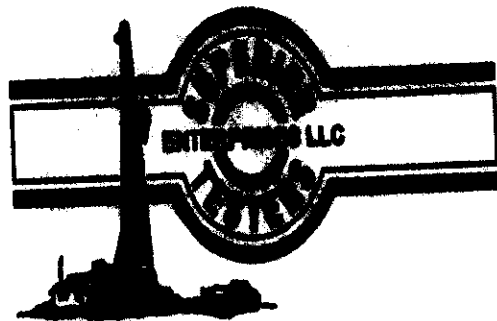
Long Surface

Tax

Discount

Total Charge





## DRILL STEM TEST REPORT

Prepared For: **Craig Ward dba Craig Oil Company**  
15 S Main Russell KS 67665+2901

ATTN: Francis Whisler

**23-15-14 Russell**

**H.J Mai #4**

Start Date: 2011.11.21 @ 10:40:00

End Date: 2011.11.21 @ 17:01:00

Job Ticket #: 18658      DST #: 1

Superior Testers Enterprises LLC  
PO Box 138 Great Bend KS 67530  
1-800-792-6902

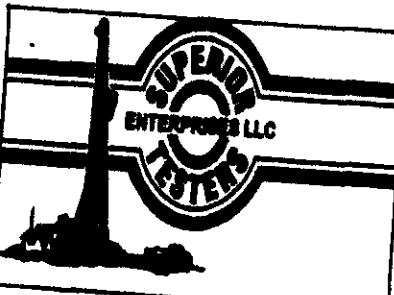
Printed: 2011.11.22 @ 03:23:07

Craig Ward dba Craig Oil Company

H.J Mai #4

23-15-14 Russell

Job #



# DRILL STEM TEST REPORT

Craig Ward dba Craig Oil Company  
 15 S Main Russell KS 67665+2901

H.J Mal #4  
 23-15-14 Russell  
 Job Ticket: 18658 DST#:1  
 Test Start: 2011.11.21 @ 10:40:00

ATTN: Francis Whisler

## GENERAL INFORMATION:

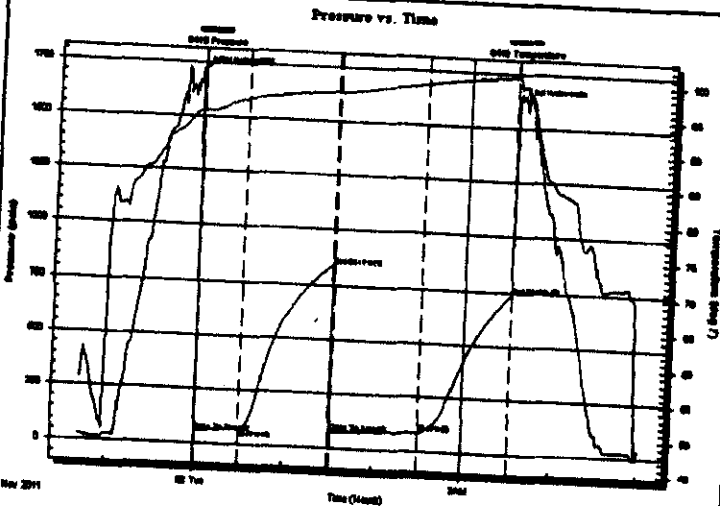
Formation: Arbuckle  
 Deviated: No Whipstock:                      ft (KB)  
 Time Tool Opened: 12:00:30  
 Time Test Ended: 17:01:00  
 Interval: 3332.00 ft (KB) To 3366.00 ft (KB) (TVD)  
 Total Depth: 3366.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)  
 Tester: Jared Schack  
 Unit No: 3320-GB-  
 Reference Elevations: 1917.00 ft (KB)  
                                   1910.00 ft (CF)  
                                   KB to GR/CF: 7.00 ft

Serial #: 8419                      Inside  
 Press@FunDepth: 87.98 psia @ 3362.00 ft (KB)  
 Start Date: 2011.11.21                      End Date:  
 Start Time: 22:40:00                      End Time:

Capacity: 5000.00 psia  
 Last Calib.: 2011.11.22  
 Time On Btm: 2011.11.21 @ 23:59:30  
 Time Off Btm: 2011.11.22 @ 03:32:30

TEST COMMENT: 1st Opening 30 Minutes-Fair blow built 6 1/2 inches into water in 30 minutes  
 1st Shut-in 60 Minutes-No blow back  
 2nd Opening 60 Minutes-Weak blow built 7 1/2 inches into water in 60 minutes  
 2nd Shut-in 60 Minutes-No blow back



## PRESSURE SUMMARY

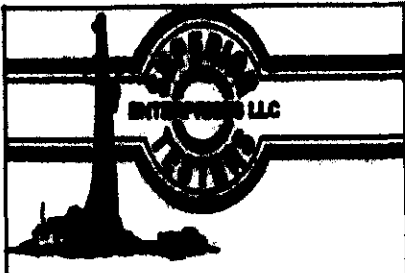
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1716.39	94.77	Initial Hydro-static
1	58.76	94.54	Open To Flow (1)
31	70.93	96.38	Shut-in(1)
91	839.09	97.87	End Shut-in(1)
92	76.51	97.80	Open To Flow (2)
151	87.98	99.52	Shut-in(2)
212	736.59	100.81	End Shut-in(2)
213	1618.28	100.84	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	Clean gassy oil 10%gas 90%oil	0.42
60.00	Muddy Oil 20%oil 80%mud	0.84
0.00	Gravty Oil 42	0.00

## Gas Rates

Choke (Inches)	Pressure (psia)	Gas Rate (Mcfd)



# DRILL STEM TEST REPORT

Craig Ward dba Craig Oil Company  
 15 S Main Russell KS 67665+2901  
 ATTN: Francis Whaler

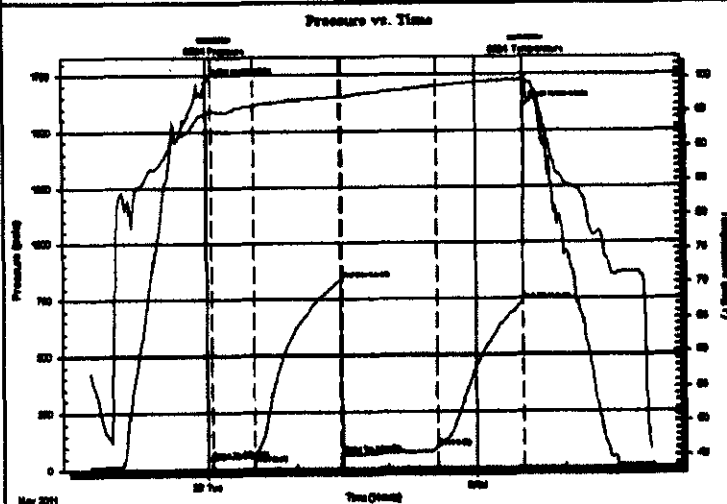
H.J Mal #4  
 23-15-14 Russell  
 Job Ticket: 18658  
 Test Start: 2011.11.21 @ 10:40:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: **No Whipstock** ft (KB)  
 Time Tool Opened: **12:00:30**  
 Time Test Ended: **17:01:00**  
 Interval: **3332.00 ft (KB) To 3366.00 ft (KB) (TVD)**  
 Total Depth: **3366.00 ft (KB) (TVD)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**  
 Test Type: **Conventional Bottom Hole (Initial)**  
 Tester: **Jared Scheck**  
 Unit No: **3320-GB**  
 Reference Elevations: **1917.00 ft (KB)**  
**1910.00 ft (CF)**  
 KB to GRVCF: **7.00 ft**

Serial #: **8524** Outside  
 Press@RunDepth: **738.50 psia @ 3363.00 ft (KB)**  
 Start Date: **2011.11.21** End Date: **2011.11.22**  
 Start Time: **22:40:00** End Time: **05:00:00**  
 Capacity: **5000.00 psia**  
 Last Calib.: **2011.11.22**  
 Time On Btm: **2011.11.21 @ 23:59:00**  
 Time Off Btm: **2011.11.22 @ 03:32:00**

TEST COMMENT: 1st Opening 30 Minutes-Fair blow built 6 1/2 inches into water in 30 minutes  
 1st Shut-in 60 Minutes-No blow back  
 2nd Opening 60 Minutes-Weak blow built 7 1/2 inches into water in 60 minutes  
 2nd Shut-in 60 Minutes-No blow back



## PRESSURE SUMMARY

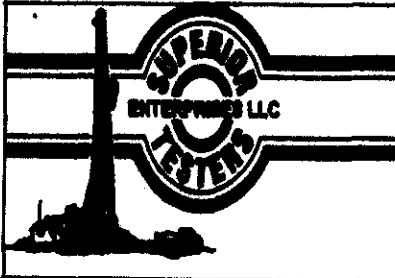
Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1718.16	94.98	Initial Hydro-static
4	47.88	95.26	Open To Flow (1)
33	68.07	96.10	Shut-in(1)
91	835.46	97.22	End Shut-in(1)
92	62.59	97.17	Open To Flow (2)
155	90.41	98.77	Shut-in(2)
212	738.50	99.79	End Shut-in(2)
213	1607.90	100.11	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
30.00	Clean gassy oil 10% gas 90% oil	0.42
60.00	Muddy Oil 20% oil 80% mud	0.84
0.00	Gravity Oil 42	0.00

## Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)



# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Craig Ward dba Craig Oil Company

H.J Mal #4

15 S Main Russell KS 67665-2901

23-15-14 Russell

Job Ticket: 18658

DST#: 1

ATTN: Francis Whisler

Test Start: 2011.11.21 @ 10:40:00

## Tool Information

Drill Pipe:	Length: 3319.00 ft	Diameter: 3.80 inches	Volume: 46.56 bbl	Tool Weight: 1000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 38000.00 lb
			<u>Total Volume: 46.56 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 38000.00 lb
Depth to Top Packer:	3332.00 ft			Final 38000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	54.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

## Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
SHut-InTool	5.00		Inside	3317.00	
Hydraulic Tool	5.00			3322.00	
Packer	5.00			3327.00	20.00 Bottom Of Top Packer
Packer	5.00			3332.00	
Anchor	29.00			3361.00	
Recorder	1.00	8419	Inside	3362.00	
Recorder	1.00	8524	Outside	3363.00	
Bullnose	3.00			3366.00	34.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>54.00</b>				





# DRILL STEM TEST REPORT

## FLUID SUMMARY

Craig Ward dba Craig Oil Company  
 15 S Main Russell KS 67665-2901  
 ATTN: Francis Whisler

H.J Mal #4  
 23-15-14 Russell  
 Job Ticket: 18658 DST#: 1  
 Test Start: 2011.11.21 @ 10:40:00

### Mud and Cushion Information

Mud Type: Gel Chem  
 Mud Weight: 9.00 lb/gal  
 Viscosity: 51.00 sec/qt  
 Water Loss: 8.80 in<sup>3</sup>  
 Resistivity: 4000.00 ohm.m  
 Salinity: ppm  
 Filter Cake: 1.00 inches

Cushion Type:  
 Cushion Length: ft  
 Cushion Volume: bbl  
 Gas Cushion Type:  
 Gas Cushion Pressure: psia

Oil API: deg API  
 Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Clean gassy oil 10% gas 90% oil	0.421
60.00	Muddy Oil 20% oil 80% mud	0.842
0.00	Gravity Oil 42	0.000

Total Length: 90.00 ft Total Volume: 1.263 bbl

Num Fluid Samples: 0  
 Laboratory Name:  
 Recovery Comments:

Num Gas Bombs: 0 Serial #:  
 Laboratory Location:

