

## Kansas Corporation Commission Oil & Gas Conservation Division

#### 1058765

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 #	API No. 15
Name:	Spot Description:
Address 1:	SecTwpS. R
Address 2:	Feet from North / South Line of Section
City: State: Zip:+	Feet from _ East / _ West Line of Section
Contact Person:	Footages Calculated from Nearest Outside Section Corner:
Phone: ()	□NE □NW □SE □SW
CONTRACTOR: License #	County:
Name:	Lease Name: Well #:
Wellsite Geologist:	Field Name:
Purchaser:	Producing Formation:
Designate Type of Completion:	Elevation: Ground: Kelly Bushing:
New Well Re-Entry Workover	Total Depth: Plug Back Total Depth:
Oil WSW SWD SIOW Gas D&A ENHR SIGW OG GSW Temp. Abd. CM (Coal Bed Methane) Cathodic Other (Core, Expl., etc.):	Amount of Surface Pipe Set and Cemented at: Feet  Multiple Stage Cementing Collar Used? Yes No  If yes, show depth set: Feet  If Alternate II completion, cement circulated from: sx cmt
Operator:	
Well Name:	Drilling Fluid Management Plan (Data must be collected from the Reserve Pit)
Original Comp. Date: Original Total Depth: Original Total Depth: Conv. to ENHR	Chloride content: ppm Fluid volume: bbls  Dewatering method used:
Plug Back: Plug Back Total Depth	Location of fluid disposal if hauled offsite:
Commingled Permit #:	Operator Name:
Dual Completion Permit #:	Lease Name: License #:
SWD Permit #:	QuarterSec TwpS. R East West
ENHR Permit #:	County: Permit #:
GSW Permit #:	
Spud Date or Date Reached TD Completion Date or Recompletion Date  Recompletion Date	

#### **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: Date:		

Side Two



Operator Name:			Lease Name: _			_ Well #:	
Sec Twp	S. R	East West	County:				
time tool open and clo	osed, flowing and shu es if gas to surface te	d base of formations pen t-in pressures, whether s st, along with final chart( well site report.	hut-in pressure rea	ched static level,	hydrostatic press	sures, bottom h	ole temperature, fluid
Drill Stem Tests Taker (Attach Additional		Yes No		og Formatio	n (Top), Depth ar	nd Datum	Sample
Samples Sent to Geo	ological Survey	☐ Yes ☐ No	Nam	е		Тор	Datum
Cores Taken Electric Log Run Electric Log Submitte (If no, Submit Copy	d Electronically	Yes No Yes No Yes No					
List All E. Logs Run:							
		Report all strings set-o		ermediate, producti	<u> </u>		
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
		ADDITIONAL	. CEMENTING / SQL	 JEEZE RECORD			
Purpose:  —— Perforate  —— Protect Casing	Depth Top Bottom	Type of Cement	# Sacks Used		Type and F	Percent Additives	
Plug Back TD Plug Off Zone							
	DEDEODATI	ON DECORD - Daider Bloss	- O-4/T	Asid Fro	cture, Shot, Cemen	t Causana Dagar	
Shots Per Foot	Specify I	ON RECORD - Bridge Plug Footage of Each Interval Per	forated		mount and Kind of Ma		Depth
TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run:	Yes No		
Date of First, Resumed	Production, SWD or EN	HR. Producing Meth		Gas Lift C	Other (Explain)		
Estimated Production Per 24 Hours	Oil	Bbls. Gas	Mcf Wat	er B	bls.	Gas-Oil Ratio	Gravity
DISPOSITI	ON OF GAS:		METHOD OF COMPLE	ETION:		PRODUCTIO	ON INTERVAL:
Vented Solo		Open Hole	Perf. Dually	Comp. Cor	nmingled		
(If vented, Su	bmit ACO-18.)	Other (Specify)	(Submit )	4CO-5) (Sub	mit ACO-4)		_

Form	ACO1 - Well Completion
Operator	Credo Petroleum Corporation
Well Name	HARTZFELD 1-22
Doc ID	1058765

# All Electric Logs Run

DUAL POROSITY
DUAL INDUCTION
MICRORESISTIVITY
SONIC



Prepared For:

**Credo Petroleum Corporation** 

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

#### 22 10s 35w Thomas KS

#### Hartzfeld 1-22

Start Date: 2011.05.16 @ 20:50:00

End Date:

2011.05.17 @ 05:05:30

Job Ticket #: 040808

DST#: 1

Trilobite Testing, Inc PO Box 1733 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



Credo Petroleum Corporation

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

Hartzfeld 1-22

22 10s 35w Thomas KS

Job Ticket: 040808

DST#: 1

Test Start: 2011.05.16 @ 20:50:00

#### GENERAL INFORMATION:

Formation:

LKC-C,D

Deviated:

No Whipstock:

ft (KB)

Test Type: Conventional Bottom Hole

Tester:

Chuck Kreutzer Jr.

Unit No:

Reference Bevations:

3287.00 ft (KB)

3282.00 ft (CF)

KB to GR/CF:

5.00 ft

Interval:

Time Tool Opened: 23:26:30

Time Test Ended: 05:05:30

4185.00 ft (KB) To 4245.00 ft (KB) (TVD)

4245.00 ft (KB) (TVD)

Total Depth: Hole Diameter:

Serial #: 8651

Press@RunDepth:

7.88 inches Hole Condition: Good

Outside

594.96 psig @

4186.00 ft (KB)

2011.05.17

Capacity:

8000.00 psig

Start Date: Start Time: 2011.05.16 20:50:05 End Date: End Time:

05:05:29

Last Calib.: Time On Btm: 2011.05.17

Time Off Btm

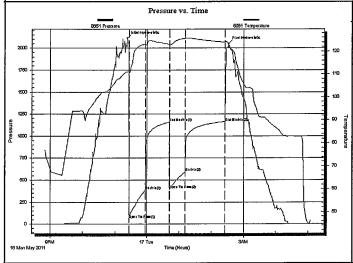
2011.05.16 @ 23:23:00 2011.05.17 @ 02:32:00

TEST COMMENT: IF: Strong blow, Built to BOB in 3 mins.

ISI: Blow Died within 45 sec. after shuting tool in. No blow back over 45 mins.

FF: Strong blow, Built to BOB in 4 mins.

FSI No blow back over 60 mins.



Р	RESSUF	RE SUMMARY
ure	Temp	Annotation

Time	Pressure	Temp	Annotation
(Min.)	(psig)	(deg F)	
0	2112.03	111.00	Initial Hydro-static
4	56.28	110.45	Open To Flow (1)
34	383.98	123.21	Shut-In(1)
79	1155.50	123.10	End Shut-In(1)
80	398.54	122.92	Open To Flow (2)
109	594.96	125.51	Shut-in(2)
183	1159.58	123.87	End Shut-In(2)
189	2049.40	121.97	Final Hydro-static

#### Recovery

Length (ft)	Description	Volume (bbl)
986.00	mcw-10%m90%w	12.74
186.00	w cm-50%w 50%m	2.61
186.00	w cm-20%w 80%m	2.61
10.00	mud- With 6in. free oil on top	0.14

Gas Rates

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

Trilobite Testing, Inc

Ref. No: 040808

Printed: 2011.06.09 @ 16:29:01 Page 2



**TOOL DIAGRAM** 

Credo Petroleum Corporation

1801 Broadw ay #900 Denver, CO 80202

ATTN: Bruce Ard

Hartzfeld 1-22

22 10s 35w Thomas KS

Job Ticket: 040808

DST#:1

Test Start: 2011.05.16 @ 20:50:00

**Tool Information** 

Drill Pipe: Heavy Wt. Pipe: Drill Collar:

Length: Length: Length:

4066.00 ft Diameter:

0.00 ft Diameter: 120.00 ft Diameter:

3.80 inches Volume: 0.00 inches Volume: 2.25 inches Volume: Total Volume:

57.04 bbl 0.00 bbl 0.59 bbl

57.63 bbl

Tool Weight: Weight set on Packer: 28000.00 lb Weight to Pull Loose: 72000.00 lb

2600.00 lb

Tool Chased

2.00 ft

String Weight: Initial 62000.00 lb

> 64000.00 lb Final

Drill Pipe Above KB: Depth to Top Packer:

29.00 ft 4185.00 ft

60.00 ft

2

ft

Depth to Bottom Packer:

Interval between Packers: Tool Length:

Number of Packers: Tool Comments:

88.00 ft

Diameter:

6.75 inches

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4162.00	

Hydraulic tool 5.00 4167.00 Jars 5.00 4172.00 3.00 4175.00 Safety Joint 5.00 4180.00 28.00 Packer Bottom Of Top Packer 5.00 4185.00 Packer Stubb 1.00 4186.00 6752 4186.00 Recorder 0.00 Inside Recorder 0.00 8651 Outside 4186.00 4190.00 4.00 Perforations Change Over Sub 1.00 4191.00 4221.00 Blank Spacing 30.00 1.00 4222.00 Change Over Sub 20.00 4242.00 Perforations 3.00 4245.00 60.00 Bullnose Bottom Packers & Anchor

**Total Tool Length:** 

88.00



**FLUID SUMMARY** 

Credo Petroleum Corporation

Hartzfeld 1-22

1801 Broadway #900 Denver, CO 80202

22 10s 35w Thomas KS Job Ticket: 040808

DST#: 1

ATTN: Bruce Ard

Test Start: 2011.05.16 @ 20:50:00

#### **Mud and Cushion Information**

Mud Type: Gel Chem

9.00 lb/gal

Mud Weight: Viscosity: Water Loss:

54.00 sec/qt 7.17 in<sup>3</sup>

Resistivity: Salinity: Filter Cake:

0.55 ohmm 4800.00 ppm

2.00 inches

Cushion Type:

Cushion Length: Cushion Volume: ft

Oil API: Water Salinity: deg API

ppm

Gas Cushion Type:

Gas Cushion Pressure:

psig

ldd

#### **Recovery Information**

#### Recovery Table

Length ft	Description	Volume bbl
986.00	mcw-10%m90%w	12.738
186.00	w cm-50%w 50%m	2.609
186.00	w cm-20%w 80%m	2.609
10.00	mud- With 6in. free oil on top	0.140

Total Length:

1368.00 ft

Total Volume:

18.096 bbl

0

Num Fluid Samples: 0

Num Gas Bombs:

Serial #:

Laboratory Name:

Laboratory Location:

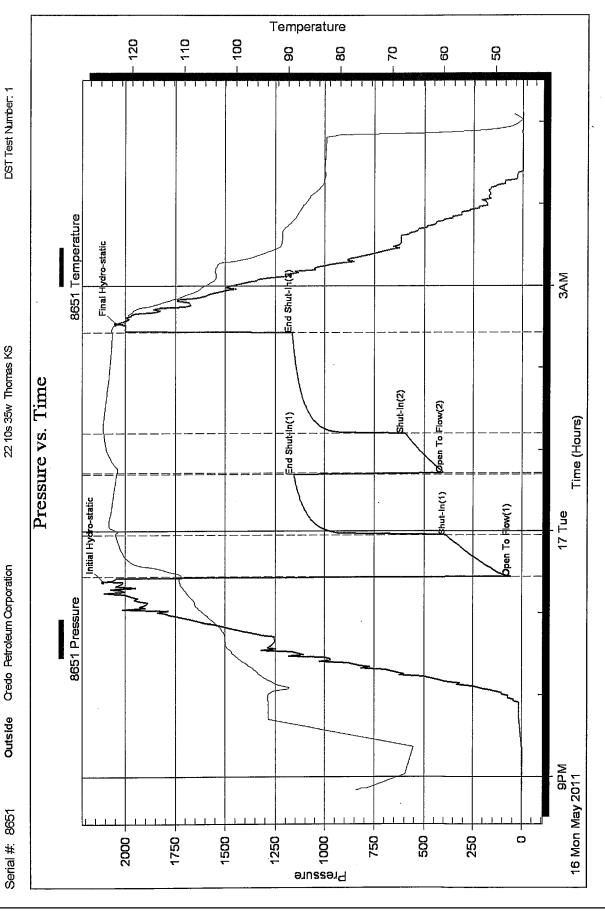
Recovery Comments:

Trilobite Testing, Inc

Ref. No: 040808

Printed: 2011.06.09 @ 16:29:03 Page 4





Trilobite Testing, Inc



Prepared For: Credo Petroleum Corporation

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

#### 22 10s 35w Thomas KS

#### Hartzfeld 1-22

Start Date: 2011.05.17 @ 21:25:00

End Date:

2011.05.18 @ 05:24:00

Job Ticket #: 040809

DST#: 2

Trilobite Testing, Inc PO Box 1733 Hays, KS 67601 ph: 785-625-4778 fax: 785-625-5620



Credo Petroleum Corporation

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

Hartzfeld 1-22

22 10s 35w Thomas KS

Job Ticket: 040809

DST#:2

Test Start: 2011.05.17 @ 21:25:00

#### GENERAL INFORMATION:

Formation:

LKC-E-J

Deviated:

No Whipstock:

ft (KB)

Time Tool Opened: 23:58:00

Time Test Ended: 05:24:00

Interval:

4242.00 ft (KB) To 4398.00 ft (KB) (TVD)

4398.00 ft (KB) (TVD)

Total Depth: Hole Diameter:

7.88 inches Hole Condition: Good

Test Type: Conventional Bottom Hole

Tester:

Chuck Kreutzer Jr.

Unit No:

Reference Elevations:

3287.00 ft (KB)

3282.00 ft (CF)

KB to GR/CF:

5.00 ft

Serial #: 8651

Press@RunDepth:

Outside

402.37 psig @

4243.00 ft (KB)

2011.05.18

Capacity:

8000.00 psig

Start Date: Start Time: 2011.05.17 21:25:05 End Date: End Time:

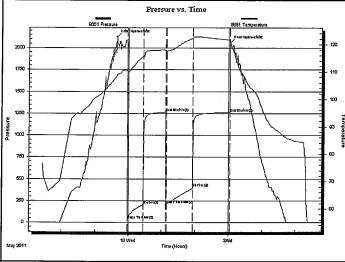
05:23:59

Last Calib.: Time On Btm: 2011.05.18

Time Off Btm

2011.05.17 @ 23:39:00 2011.05.18 @ 03:03:00

TEST COMMENT: IF: Fair blow, Built to BOB in 12 mins. ISI: No blow back over 45 mins. FF: Fair blow, Built to BOB in 12 mins. FSI: No blow back over 60 mins.



	PRESSURE SUMMARY						
	Time	Pressure	Temp	Annotation			
,	(Min.)	(psig)	(deg F)				
	0	2127.89	108.75	Initial Hydro-static			
3	19	35.03	109.79	Open To Flow (1)			
	48	208.67	115.89	Shut-In(1)			
,	89	1263.27	117.92	End Shut-In(1)			
Ten	90	209.80	117.67	Open To Flow (2)			
Temperature	137	402.37	122.32	Shut-In(2)			
re	203	1262.59	121.74	End Shut-In(2)			
	204	2059.43	121.12	Final Hydro-static			
				-			

DDECCUDE CUMMANDY

#### Recovery

Length (ft)	Description	Volume (bbl)		
338.00	mcw-5%m95%w	3.65		
248.00	mcw-20%m80%w	3.48		
186.00 w cm5%w 95%m		2.61		

Gas Raies						
	Choke (inches)	Proceuro (poig)	Con Poto (Mof/d)	•		

Trilobite Testing, Inc.

Ref. No: 040809

Printed: 2011.06.09 @ 16:29:43 Page 2



**TOOL DIAGRAM** 

Credo Petroleum Corporation

Hartzfeld 1-22

1801 Broadway #900 Denver, CO 80202

Job Ticket: 040809

22 10s 35w Thomas KS

DST#: 2

ATTN: Bruce Ard

Test Start: 2011.05.17 @ 21:25:00

Tool Information

Drill Pipe: Heavy Wt. Pipe:

Drill Collar:

Length: 4102.00 ft Diameter: Length: Length:

0.00 ft Diameter: 120.00 ft Diameter: 3.80 inches Volume: 0.00 inches Volume: 2.25 inches Volume: 57.54 bbl 0.00 bbl 0.59 bbl Tool Weight: 2600.00 lb Weight set on Packer: 28000.00 lb

Weight to Pull Loose: 70000.00 lb

Total Volume: 58.13 bbl Tool Chased

3.00 ft

String Weight: Initial 64000.00 lb

4242.00 ft ft 156.00 ft

8.00 ft

Interval between Packers: Tool Length:

Drill Pipe Above KB:

Depth to Top Packer:

Depth to Bottom Packer:

184.00 ft

Final 66000.00 lb

Number of Packers:

2 Diameter:

6.75 inches

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	· · · · · · · · · · · · · · · · · · ·
Shut In Tool	5.00			4219.00		
Hydraulic tool	5.00			4224.00		
Jars	5.00			4229.00		
Safety Joint	3.00			4232.00		
Packer	5.00			4237.00	28.00	Bottom Of Top Packer
Packer	5.00			4242.00		
Stubb	1.00			4243.00		
Recorder	0.00	6752	Inside	4243.00		
Recorder	0.00	8651	Outside	4243.00		
Perforations	4.00			4247.00		
Change Over Sub	1.00			4248.00		
Blank Spacing	124.00			4372.00		
Change Over Sub	1.00			4373.00		
Perforations	22.00			4395.00		
Bullnose	3.00			4398.00	156.00	Bottom Packers & Anchor

**Total Tool Length:** 

184.00

Trilobite Testing, Inc.

Ref. No: 040809

Printed: 2011.06.09 @ 16:29:44



**FLUID SUMMARY** 

Credo Petroleum Corporation

Hartzfeld 1-22

1801 Broadway #900 Denver, CO 80202

22 10s 35w Thomas KS Job Ticket: 040809

DST#: 2

ATTN: Bruce Ard

Test Start: 2011.05.17 @ 21:25:00

#### **Mud and Cushion Information**

Mud Type: Gel Chem

9.00 lb/gal

Cushion Type:

Oil API:

deg API

Mud Weight: Viscosity:

55.00 sec/qt

Cushion Length: Cushion Volume: Water Salinity:

46000 ppm

Water Loss:

7.96 in<sup>3</sup>

Gas Cushion Type:

bbl

ft

Resistivity: 0.20 ohmm

Salinity:

5000.00 ppm

Gas Cushion Pressure:

psig

Filter Cake:

2.00 inches

#### **Recovery Information**

#### Recovery Table

Length ft	Description	Volume bbl	
338.00	mcw-5%m95%w	3.648	
248.00	mcw-20%m80%w	3.479	
186.00	w cm5%w 95%m	2.609	

Total Length:

772.00 ft

Total Volume:

9.736 bbl

Num Fluid Samples: 0

Num Gas Bombs:

Serial #:

Laboratory Name:

Laboratory Location:

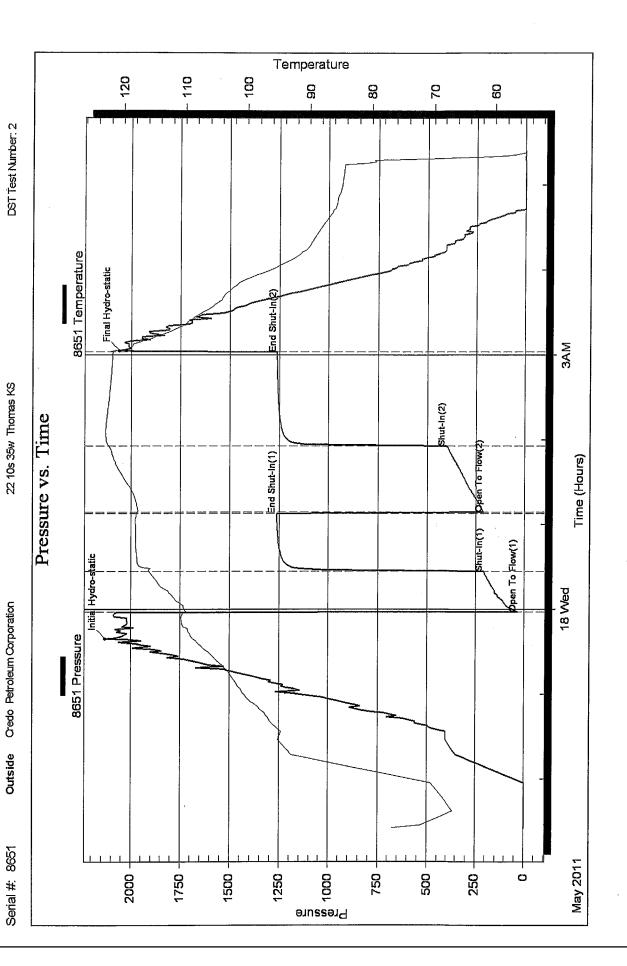
Recovery Comments:

Trilobite Testing, Inc.

Ref. No: 040809

Printed: 2011.06.09 @ 16:29:45 Page 4





Ref. No: 040809



Prepared For:

**Credo Petroleum Corporation** 

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

#### 22 10s 35w Thomas KS

#### Hartzfeld 1-22

Start Date: 2011.05.18 @ 20:20:00 End Date:

2011.05.19 @ 03:18:00

Job Ticket #: 040810 DST#: 3

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



Credo Petroleum Corporation

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

Hartzfeld 1-22

22 10s 35w Thomas KS

Job Ticket: 040810

DST#: 3

Test Start: 2011.05.18 @ 20:20:00

#### GENERAL INFORMATION:

Formation:

LKC,K- Marm.

Deviated:

Whipstock: No

ft (KB)

Time Tool Opened: 22:26:00

Time Test Ended: 03:18:00

Interval:

4398.00 ft (KB) To 4495.00 ft (KB) (TVD)

Total Depth:

4495.00 ft (KB) (TVD)

Hole Diameter:

7.88 inchesHole Condition: Good

Test Type:

Conventional Bottom Hole

Tester:

Chuck Kreutzer Jr.

Unit No:

Reference Hevations:

3287.00 ft (KB)

3282.00 ft (CF)

KB to GR/CF:

5.00 ft

Serial #: 8651

Press@RunDepth:

Outside

180.09 psig @

4399.00 ft (KB)

2011.05.19

Capacity:

8000.00 psig

Last Calib .:

Time On Btm

2011.05.19

Time Off Btm:

2011.05.19 @ 01:17:00

Start Date: Start Time:

2011.05.18 20:20:05 End Date: End Time:

03:17:59

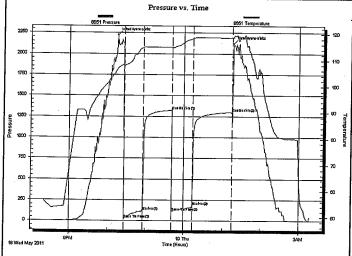
2011.05.18 @ 22:15:30

TEST COMMENT: IF: Weak blow, Built to 7 in. over 30 mins.

ISI: Weak blow back after 15 mins. Died in 40 mins.

FF: Weak blow, Built to 7 in. over 30 mins.

FSI: No blow back over 60 mins.



_Ph	KESSUF	KE SU	MMARY
ure	Temo	Ann	otation

	lime	Pressure	Temp	Annotation
-	(Min.)	(psig)	(deg F)	
	. 0	2223.25	106.76	Initial Hydro-static
	11	23.23	107.70	Open To Flow (1)
ı	41	115.08	114.85	Shut-In(1)
I	86	1323.31	115.08	End Shut-In(1)
I	86	113.06	114.64	Open To Flow (2)
ı	119	180.09	118.34	Shut-In(2)
ı	180	1298.89	118.70	End Shut-in(2)
I	182	2124.22	118.54	Final Hydro-static
ı				
l			ļ	
ı				

#### Recovery

Length (ft)	Description	Volume (bbl)
120.00	w cm40%w 60%m	0.59
120.00	w cm-25%w 75%m	1.68
60.00	w cm-5%w 95%m	0.84

Gas Rates

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

Trilobite Testing, Inc.

Ref. No: 040810

Printed: 2011.06.09 @ 16:30:05 Page 2



**TOOL DIAGRAM** 

Credo Petroleum Corporation

Hartzfeld 1-22

1801 Broadway #900 Denver, CO 80202

Job Ticket: 040810

22 10s 35w Thomas KS

DST#:3

ATTN: Bruce Ard

Test Start: 2011.05.18 @ 20:20:00

Tool Information

Drill Pipe: Heavy Wt. Pipe: Length:

Drill Collar:

Length: 4256.00 ft Diameter: Length:

0.00 ft Diameter: 120.00 ft Diameter: 6.00 ft

59.70 bbl 3.80 inches Volume: 0.00 inches Volume: 1dd 00.0 0.59 bbl 2.25 inches Volume: Total Volume: 60.29 bbl Tool Weight:

2600.00 lb Weight set on Packer: 28000.00 lb

Final 65000.00 lb

Tool Chased

String Weight: Initial 64000.00 lb

Weight to Pull Loose: 70000.00 lb 2.00 ft

Depth to Top Packer: Depth to Bottom Packer:

Drill Pipe Above KB:

4398.00 ft ft

96.00 ft

Interval between Packers: Tool Length:

124.00 ft

2 Diameter:

6.75 inches

Number of Packers:

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			4375.00		
Hydraulic tool	5.00			4380.00		
Jars	5.00			4385.00		
Safety Joint	3.00			4388.00		
•	5.00			4393.00	28.00	Bottom Of Top Packer
Packer	5.00			4398.00		
Packer	1.00			4399.00		
Stubb	0.00	6752	Inside	4399.00		
Recorder	0.00	8651	Outside	4399.00		
Recorder	4.00			4403.00		
Perforations	1.00			4404.00		
Change Over Sub	61.00			4465.00		
Blank Spacing	1.00			4466.00		
Change Over Sub	25.00			4491.00		
Perforations	3.00			4494.00	96.00	Bottom Packers & Anchor
Bullnose						

**Total Tool Length:** 

124.00



**FLUID SUMMARY** 

Credo Petroleum Corporation

Hartzfeld 1-22

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

22 10s 35w Thomas KS

Job Ticket: 040810

DST#:3

ft

ldd

psig

Test Start: 2011.05.18 @ 20:20:00

# **Mud and Cushion Information**

Mud Type: Gel Chem

Mud Weight:

Viscosity:

Water Loss:

Resistivity:

Salinity: Filter Cake:

9.00 lb/gal 55.00 sec/qt

8.78 in<sup>3</sup> ohmm

58000.00 ppm 2.00 inches Cushion Type:

Cushion Length: Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Water Salinity:

Oil API:

deg API

ppm

# **Recovery Information**

#### Recovery Table

Length ft	Description	Volume bbl
120.00	w cm-40%w 60%m	0.590
120.00	w cm-25%w 75%m	1.683
60.00	w cm-5%w 95%m	0.842

Total Length:

300.00 ft

Total Volume:

3.115 bbl

Num Fluid Samples: 0

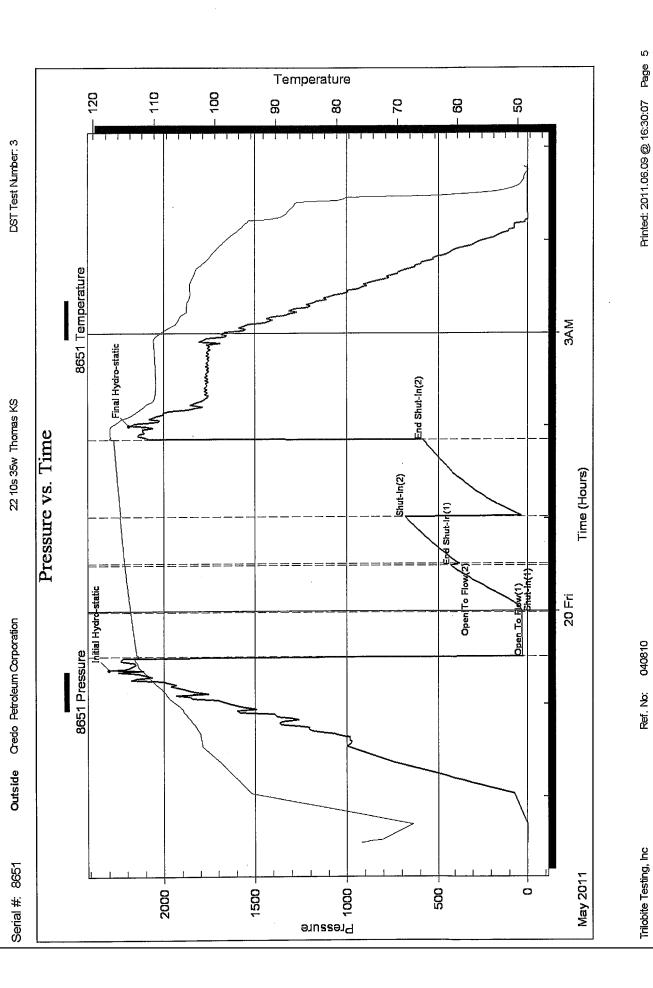
Num Gas Bombs:

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





Prepared For:

Credo Petroleum Corporation

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

#### 22 10s 35w Thomas KS

### Hartzfeld 1-22

Start Date: 2011.05.19 @ 21:30:00

End Date: 2011.05.20 @ 04:48:00

Job Ticket #: 040811 DST#: 4

Trilobite Testing, Inc

PO Box 1733 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



Credo Petroleum Corporation

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

Hartzfeld 1-22

22 10s 35w Thomas KS

Job Ticket: 040811

DST#:4

Test Start: 2011.05.19 @ 21:30:00

#### GENERAL INFORMATION:

Formation:

Interval:

Start Date:

Start Time:

Marm.-Ft. Scott

Deviated:

No

Whipstock:

ft (KB)

Test Type: Conventional Bottom Hole

Tester:

Chuck Kreutzer Jr.

Unit No:

36

Reference Bevations:

3287.00 ft (KB)

KB to GR/CF:

3282.00 ft (CF) 5.00 ft

Total Depth: Hole Diameter:

4493.00 ft (KB) To 4650.00 ft (KB) (TVD)

Time Tool Opened: 23:30:30

Time Test Ended: 04:48:00

4650.00 ft (KB) (TVD)

7.88 inches Hole Condition: Good

Serial #: 8651

Press@RunDepth:

Outside

680.57 psig @ 2011.05.19 21:30:05

End Date: End Time:

4494.00 ft (KB)

2011.05.20 04:47:59 Capacity:

Last Calib .:

8000.00 psig

Time On Btm:

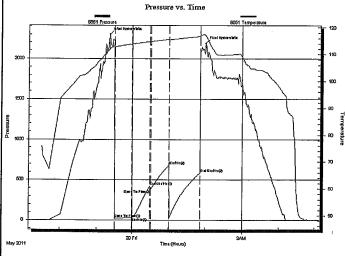
2011.05.20 2011.05.19 @ 23:22:00

Time Off Btm

2011.05.20 @ 02:00:00

TEST COMMENT: IF: Weak blow, Died in 15 mins.

ISI: No blow back over 30 mins. FF: No blow over 30 mins. FSI: No blow back over 45 mins.



		PRESSURE SUMMARY								
120		Time	Pressure	Temp	Annotation					
		(Min.)	(psig)	(deg F)						
110		0	2299.42	112.12	Initial Hydro-static					
		9	24.67	112.36	Open To Flow (1)					
100		. 37	29.52	113.88	Shut-In(1)					
- 90		68	425.78	114.83	End Shut-In(1)					
FO	Terr	69	375.87	114.86	Open To Flow (2)					
80	Temperature	99	680.57	115.66	Shut-In(2)					
	re	149	584.84	116.70	End Shut-In(2)					
70		158	2190.66	116.97	Final Hydro-static					
60										
50										
1										

Recovery				
Length (ft)	Description	Volume (bbl)		
10.00	mud-100%	0.05		

Gas Raies						
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)			

Trilobite Testing, Inc.

Ref. No: 040811

Printed: 2011.06.09 @ 16:30:23 Page 2



**TOOL DIAGRAM** 

Credo Petroleum Corporation

1801' Broadw ay #900 Denver, CO 80202

ATTN: Bruce Ard

Hartzfeld 1-22

22 10s 35w Thomas KS

Job Ticket: 040811

DST#:4

Test Start: 2011.05.19 @ 21:30:00

Tool Information

Drill Pipe:

Drill Collar:

Heavy Wt. Pipe: Length: Length:

Length: 4349.00 ft Diameter:

0.00 ft Diameter: 120.00 ft Diameter:

3.80 inches Volume: 0.00 inches Volume: 2.25 inches Volume: Total Volume:

0.00 bbl 0.59 bbl 61.60 bbl

61.01 bbl

Tool Weight:

2600.00 lb Weight set on Packer: 28000.00 lb Weight to Pull Loose: 70000.00 lb

Tool Chased

2.00 ft

String Weight: Initial

64000.00 lb

64000.00 lb Final

Drill Pipe Above KB: Depth to Top Packer:

4.00 ft 4493.00 ft

Depth to Bottom Packer:

Interval between Packers: 157.00 ft 185.00 ft Tool Length:

Number of Packers:

2 Diameter:

ft

6.75 inches

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			4470.00		
Hydraulic tool	5.00			4475.00		
Jars	5.00			4480.00		
Safety Joint	3.00			4483.00		
Packer	5.00			4488.00	28.00	Bottom Of Top Packer
Packer	5.00			4493.00		
Stubb	1.00			4494.00	e.	
Recorder	0.00	6752	inside	4494.00		
Recorder	0.00	8651	Outside	4494.00		
Perforations	4.00			4498.00		
Change Over Sub	1.00			4499.00		
Blank Spacing	124.00			4623.00		
Change Over Sub	1.00			4624.00		
Perforations	23.00			4647.00		
Bullnose	3.00			4650.00	157.00	Bottom Packers & Anchor

**Total Tool Length:** 

185.00

- 1 -



Prepared For:

**Credo Petroleum Corporation** 

1801 Broadway #900 Denver, CO 80202

ATTN: Bruce Ard

#### 22 10s 35w Thomas KS

#### Hartzfeld 1-22

Start Date:

2011.05.20 @ 20:50:00

End Date:

2011.05.21 @ 03:35:30

Job Ticket #: 040812

DST#: 5

Trilobite Testing, Inc PO Box 1733 Hays, KS 67601 ph: 785-625-4778 fax: 785-625-5620



Credo Petroleum Corporation

ft (KB)

Hartzfeld 1-22

22 10s 35w Thomas K\$

1801 Broadway #900 Denver, CO 80202

Job Ticket: 040812

DST#:5

ATTN: Bruce Ard

Test Start: 2011.05.20 @ 20:50:00

#### GENERAL INFORMATION:

Formation:

Johnson

Deviated:

No Whipstock:

Test Type: Conventional Bottom Hole

Time Tool Opened: 22:34:30

Time Test Ended: 03:35:30

Tester:

Chuck Kreutzer Jr.

Unit No:

36

Interval:

4724.00 ft (KB) To 4764.00 ft (KB) (TVD)

Reference Elevations:

3287.00 ft (KB)

Total Depth:

4764.00 ft (KB) (TVD)

3282.00 ft (CF)

Hole Diameter:

7.88 inches Hole Condition: Good

KB to GR/CF:

5.00 ft

Serial #: 8651

Press@RunDepth:

Outside

4725.00 ft (KB)

Capacity:

8000.00 psig

Start Date:

2011.05.20

23.01 psig @

End Date:

2011.05.21

Last Calib.:

Start Time:

20:50:05

Time On Btm:

2011.05.21

End Time:

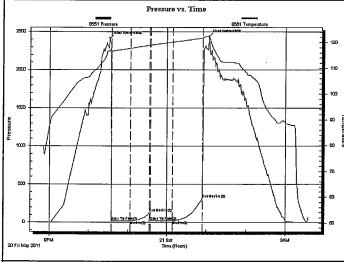
03:35:29

Time Off Btm:

2011.05.20 @ 22:31:30 2011.05.21 @ 01:03:30

TEST COMMENT: IF: Weak blow, Died in 22 mins.

ISI: No blow back over 30 mins. FF: No blow over 30 mins. FSI: No blow back over 45 mins.



#### PRESSURE SUMMARY

	F	KESSUF	RE SUIVINARY
Time	Pressure	Temp	Annotation
(Min.)	(psig)	(deg F)	
0	2414.11	116.68	Initial Hydro-static
3	20.21	116.58	Open To Flow (1)
33	21.38	117.73	Shut-In(1)
62	126.31	118.94	End Shut-In(1)
63	21.13	118.94	Open To Flow (2)
97	23.01	120.15	Shut-in(2)
143	315.50	121.63	End Shut-In(2)
152	2439.38	122.30	Final Hydro-static
	(Min.) 0 3 33 62 63 97 143	Time (Min.) Pressure (psig) 0 2414.11 3 20.21 33 21.38 62 126.31 63 21.13 97 23.01 143 315.50	Time (Min.) Pressure (psig) (deg F) 0 2414.11 116.68 3 20.21 116.58 33 21.38 117.73 62 126.31 118.94 63 21.13 118.94 97 23.01 120.15 143 315.50 121.63

#### Recovery

Length (ft)	Description	Volume (bbl)
8.00	mud	0.04

#### Gas Rates

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

Trilobite Testing, Inc.

Ref. No: 040812

Printed: 2011.06.09 @ 16:30:44 Page 2



**TOOL DIAGRAM** 

Credo Petroleum Corporation

Hartzfeld 1-22

1801 Broadw ay #900 Denver, CO 80202

22 10s 35w Thomas KS

Job Ticket: 040812

DST#:5

ATTN: Bruce Ard

Test Start: 2011.05.20 @ 20:50:00

Tool Information

Drill Pipe: Heavy Wt. Pipe: Length:

Drill Collar:

Length:

Length: 4596.00 ft Diameter: 0.00 ft Diameter: 120.00 ft Diameter:

3.80 inches Volume: 0.00 inches Volume: 2.25 inches Volume:

Total Volume:

64.47 bbl 0.00 bbl 0.59 bbl

65.06 bbl

Tool Weight:

2600.00 lb

Weight set on Packer: 30000.00 lb Weight to Pull Loose: 80000.00 lb

Tool Chased

2.00 ft

String Weight: Initial 66000.00 lb

66000.00 lb

Drill Pipe Above KB:

20.00 ft

Depth to Top Packer: Depth to Bottom Packer: 4724.00 ft ft

Interval between Packers: Tool Length:

40.00 ft

68.00 ft

Diameter:

2

6.75 inches

Number of Packers:

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Shut In Tool	5.00			4701.00		
Hydraulic tool	5.00			4706.00		
Jars	5.00			4711.00		
Safety Joint	3.00			4714.00		
Packer	5.00			4719.00	28.00	Bottom Of Top Packer
Packer	5.00			4724.00		
Stubb	1.00			4725.00		
Recorder	0.00	6752	Inside	4725.00		
Recorder	0.00	8651	Outside	4725.00		·
Perforations	4.00			4729.00		
Perforations	32.00			4761.00		
Bullnose	3.00			4764.00	40.00	Bottom Packers & Anchor

**Total Tool Length:** 

68.00



**FLUID SUMMARY** 

Credo Petroleum Corporation

Hartzfeld 1-22

1801 Broadway #900

22 10s 35w Thomas KS

Denver, CO 80202

Job Ticket: 040812

DST#:5

ATTN: Bruce Ard

Test Start: 2011.05.20 @ 20:50:00

#### **Mud and Cushion Information**

Mud Type: Gel Chem

Mud Weight: Viscosity:

9.00 lb/gal 52.00 sec/qt

Water Loss: Resistivity:

8.77 in<sup>3</sup> ohmm

Salinity: Filter Cake: 5000.00 ppm 2.00 inches Cushion Type:

Cushion Length:

Cushion Volume:

Gas Cushion Type:

Gas Cushion Pressure:

Oil API:

Water Salinity:

deg API

ppm

psig

ft

bbl

#### **Recovery Information**

#### Recovery Table

Length ft	Description	Volume bbl
8.00	mud	0.039

Total Length:

8.00 ft

Total Volume:

0.039 bbl

Num Fluid Samples: 0

Num Gas Bombs:

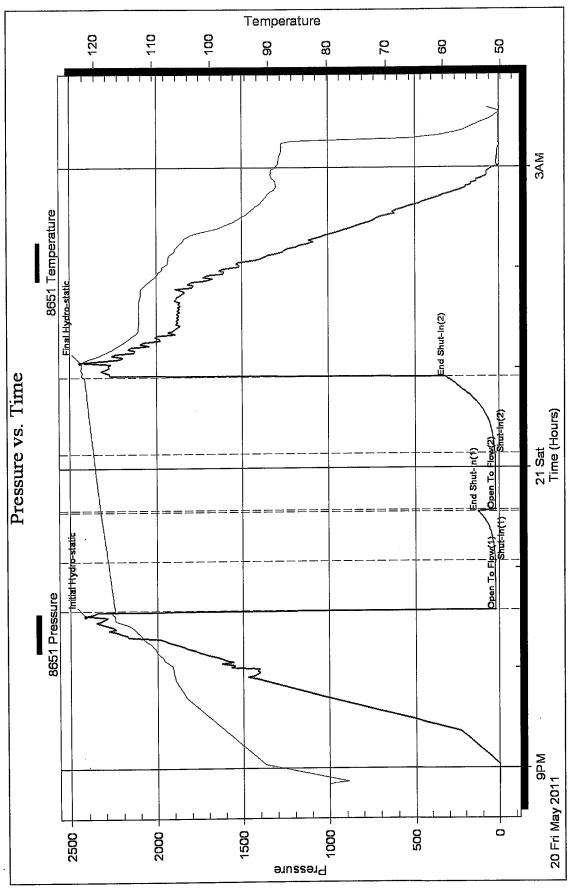
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:





DST Test Number: 5

22 10s 35w Thomas KS

Gredo Petroleum Corporation

Outside

Serial #: 8651

# ALLIED CEMENTING 043321

Federal Tax I.D.# 20-5975804

REMIT TO P.O. BOX 31 RUSSELL, KANSAS 67665

SERVICE POINT:

DISCOUNT IF PAID IN 30 DAYS	PRINTED NAME JUSTIA HANGA
TOTAL CHARGES	-
SALES TAX (If Any)	TERMS AND CONDITIONS" listed on the reverse side.
TOTAL <b>92.00</b>	
@	and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was
(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	To Allied Cementing Co., LLC.  You are hereby requested to rent cementing equipment
1 Dy hole plus @ 92,00	
PLUG & FLOAT EQUIPMENT	CITYSTATEZIP
TOTAL SISSION	STREET
<b>3</b>	CHARGE TO: Credo Péroleun cosp
Light vehicle @ 4,20 340,00	thank you
30miles X 2	
	15 sks mouse hole
<b>)</b>	10 sks 10 yo
SERVICE	100 chs @ 1280'
101AL 7700/60	25 c/s @ 20%
SK/mile	DEMADEC.
HANDLING 238 465 @ 2,25 5/3,00	# DRIVER Ethen
	# 404 DRIVER Andrew
	BULK TRUCK  HELPER  Varry
@ @ ——————————————————————————————————	MP TRUCK CEMENTER Andre
Flo-seal 55# @ 2120 148,50	EQUIPMENT
	DISPLACEMENT
CHLORIDE @	PERFS.
MIX 88 Sts @ 8.50	LINE
COMMON 132585 @ 1625 2145,00	PRES. MAX MINIMUM
	PIPE 41%
AMOUNT ORDERED 20 Shs 6960 48506	ZE DEPTH
CEMENT COS (	TYPE OF JOB PTA
<b>)</b>	CHECK OHO) 3/870
96 N Iw Thomas	WELL# /-22 LOCATIO
CALLED OUT  ON LOCATION  JOB START  JOB FINISH  COUNTY  STATE  COUNTY  STATE	DATE S-22 / SEC. 2 TWP RANGE 35 W C
091/20	INCHASTING CLOOD

SIGNATURE

SERVICE POINT:

DISCOURT II. FAID IN 30 DATS	
	Scharle
SALES TAX (If Any)	TERMS AND CONDITIONS" listed on the reverse side.
TOTAL	
(H)	and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was
9 9	You are hereby requested to rent cementing equipment
(a)	To Allied Cementing Co., LLC.
<u> </u>	
PLUG & FLOAT EQUIPMENT	CITYSTATEZIP
TOTAL 1985,00	STREET
	CHARGE TO: Credo petroleum
right refice @ 4,00 340,00	thankyou
20 miles x 2 @ 2,00	
ARGE	Crem Dio Conculate
50	
	1887
TOTAL 4/1/8/	REMARKS:
HANDLING 129 SK/ @ 2,25 462,75	# URIVER
	ULK TRUCK
9 8	#3% DRIVER Larene Ethan
(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	PUMPTRUCK CEMENTER THORES # 423-287 HELPER Jery
	EQUIPME
0 0	ACEMENT 15.6 COL
CHLORIDE 6 545 @ 58,20,349,20	
	DITOR SOUTH
NINUSES	MEAS, LINE SHOF JOINT
	DEPTH
	DRILL PIPE DEPTH
SPOC ABOOL	TUBING SIZE DEPTH
AMOUNT ORDERED 170 sks com	ZE 878 DEPTH 260'
CEMENT	TYPE OF JOB SUPPLE TO 254'
OWNER Syme	1 Pig 2
	DLD OR NEW (Circle one)
9/2N /2 w Thomas	EASE WELL# 1-27 LOCATION WINDMA
CALLED OUT ON LOCATION JOB STATE COUNTY STATE	RANGE
ON TOCATION TO START	

SIGNATURE

Conservation Division Finney State Office Building 130 S. Market, Rm. 2078 Wichita, KS 67202-3802



Phone: 316-337-6200 Fax: 316-337-6211 http://kcc.ks.gov/

Sam Brownback, Governor

Mark Sievers, Chairman Ward Loyd, Commissioner Thomas E. Wright, Commissioner

June 30, 2011

JACK RENFRO Credo Petroleum Corporation 1801 BROADWAY # 900 DENVER, CO 80202-3858

Re: ACO1 API 15-193-20796-00-00 HARTZFELD 1-22 NW/4 Sec.22-10S-35W Thomas County, Kansas

### **Dear Production Department:**

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully, JACK RENFRO