

**OPERATOR**

Company: ANDY WERTH dba WERTH EXPLORATION TRUST  
 Address: 1308 SCHWALLER AVE  
 HAYS, KANSAS 67601

Contact Geologist: ANDY WERTH  
 Contact Phone Nbr: 785-625-4968  
 Well Name: WORCESTER # 16-5  
 Location: SW NW SW NE Sec.16-T7S R22W  
 API: 15-065-24,048-00-00  
 Pool: State: KANSAS Field: ALDA  
 Country: USA

Scale 1:240 Imperial

Well Name: WORCESTER # 16-5  
 Surface Location: SW NW SW NE Sec.16-T7S R22W  
 Bottom Location:  
 API: 15-065-24,048-00-00  
 License Number: 30259  
 Spud Date: 7/3/2014 Time: 2:45 PM  
 Region: GRAHAM COUNTY  
 Drilling Completed: 7/7/2014 Time: 10:20 PM  
 Surface Coordinates: 3310' FSL & 2364' FEL  
 Bottom Hole Coordinates:  
 Ground Elevation: 2334.00ft  
 K.B. Elevation: 2341.00ft  
 Logged Interval: 3170.00ft To: 3804.00ft  
 Total Depth: 3804.00ft  
 Formation: LANSING-KANSAS CITY  
 Drilling Fluid Type: CHEMICAL/FRESH WATER GEL

**SURFACE CO-ORDINATES**

Well Type: Vertical  
 Longitude: -99.7783882  
 Latitude: 39.4463488  
 N/S Co-ord: 3310' FSL  
 E/W Co-ord: 2364' FEL

**LOGGED BY**

Company: SOLUTIONS CONSULTING  
 Address: 108 W 35TH  
 HAYS, KS 67601

Phone Nbr: (785) 639-1337  
 Logged By: GEOLOGIST Name: BRUCE BASYE/HERB DEINES

**CONTRACTOR**

Contractor: DISCOVERY DRILLING, INC.  
 Rig #: 1  
 Rig Type: MUD ROTARY  
 Spud Date: 7/3/2014 Time: 2:45 PM  
 TD Date: 7/7/2014 Time: 10:20 PM  
 Rig Release: 7/8/2014 Time: 1:00 PM

**ELEVATIONS**

K.B. Elevation: 2341.00ft Ground Elevation: 2334.00ft  
 K.B. to Ground: 7.00ft

**NOTES**

RECOMMENDATION TO PLUG AND ABANDON WELL BASED ON NEGATIVE RESULTS OF DST # 1 AND LOG ANALYSIS

OPEN HOLE LOGGING BY PIONEER ENERGY SERVICES: RADIATION GUARD LOG, MICRORESISTIVITY LOG

DRILL STEM TESTING BY SUPERIOR TESTERS: ONE (1) CONVENTIONAL TEST


**FORMATION TOPS COMPARISON**

	<b>WORCESTER 16-5 SW NW SE NE SEC.16-T7S-R22W 2333'GL 2341'KB</b>	<b>WORCESTER B-1 SW SW NE SEC.16-T7S-R22W KB 2334'</b>	<b>WORCESTER F-16 NW SW NE SEC.16-7S-22W KB 2343'</b>
<u>FORMATION</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>	<u>LOG TOPS</u>
<b>Anhydrite</b>	<b>1964 +377</b>	<b>+374</b>	<b>+383</b>
<b>B-Anhydrite</b>	<b>1994 +347</b>		<b>+352</b>
<b>Topeka</b>	<b>3323 -982</b>	<b>-986</b>	<b>-983</b>
<b>Heebner Sh.</b>	<b>3524-1183</b>	<b>-1183</b>	<b>-1183</b>
<b>Toronto</b>	<b>3548-1207</b>	<b>-1205</b>	<b>-1207</b>
<b>LKC</b>	<b>3566-1225</b>	<b>-1226</b>	<b>-1227</b>
<b>BKC</b>	<b>3759-1418</b>	<b>-1418</b>	<b>-1419</b>
<b>Arbuckle</b>	<b>NR</b>	<b>NR</b>	<b>-1547</b>
<b>RTD</b>	<b>3804-1463</b>	<b>-1551</b>	<b>-1555</b>

**SUMMARY OF DAILY ACTIVITY**

<b>7-03-14</b>	<b>Spud 2:45 PM, set 8 5/8" surface casing to 220' w/ 150 sxs Common 2% Gel 3% CC, slope 3/4 degree, plug down 6:30 PM, WOC 8 Hours</b>		
<b>7-04-14</b>	<b>700', drill plug at 2:30AM</b>		
<b>7-05-14</b>	<b>2640', displaced at 3249'</b>		
<b>7-06-14</b>	<b>3359', drilling, CFS 3564', short trip 25 stands, CFS 3610', CCH, TOWB</b>		
<b>7-07-14</b>	<b>3610', DST # 1 3582'-3610' "C" LKC, RTD 3804' @10:20 PM, CCH, TOWB</b>		
<b>7-08-14</b>	<b>3804', logs, LDDP, P&amp;A</b>		

## DST # 1 TEST SUMMARY

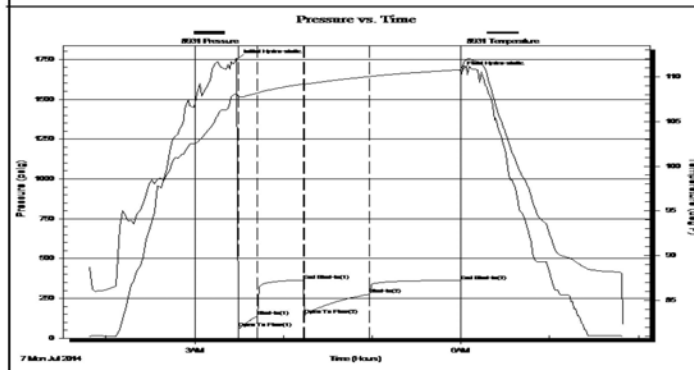
	<b>DRILL STEM TEST REPORT</b>	
	Werth Exploration Trust 1308 Schwaller Ave. Hays Kansas 67601 ATTN: Herb Deines	<b>16-7s-22w-Graham</b> <b>Worcester 16-5</b> Job Ticket: 18348 <b>DST#: 1</b> Test Start: 2014.07.07 @ 01:48:00

**GENERAL INFORMATION:**

Formation: <b>Lansing C</b>	Test Type: Conventional Bottom Hole (Initial)
Deviated: No    Whipstock:                      ft (KB)	Tester: Dustin Ellis
Time Tool Opened: 03:29:30	Unit No: 3315-Hays-132
Time Test Ended: 07:50:00	Reference Elevations: 2341.00 ft (KB)
<b>Interval: 3582.00 ft (KB) To 3610.00 ft (KB) (TVD)</b>	2334.00 ft (CF)
Total Depth: 3610.00 ft (KB) (TVD)	KB to GR/CF: 7.00 ft
Hole Diameter: 7.88 inches    Hole Condition: Fair	

<b>Serial #: 8931</b> <b>Inside</b>	Capacity: 5000.00 psig
Press@RunDepth: 276.14 psig @ 3605.00 ft (KB)	Last Calib.: 2014.07.07
Start Date: 2014.07.07      End Date: 2014.07.07	Time On Btm: 2014.07.07 @ 03:28:30
Start Time: 01:48:00      End Time: 07:50:00	Time Off Btm: 2014.07.07 @ 06:00:00

**TEST COMMENT:** 1st Open 15 minutes Strong building blow built to the bottom of a 5 gallon bucket of water in 6 minutes.  
 1st Shut in 30 minutes No blow back  
 2nd Open 45 minutes Strong building blow built to the bottom of a 5 gallon bucket of water in 11 minutes.  
 2nd Shut in 60 minutes No blow back.



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1750.88	108.15	Initial Hydro-static
1	62.60	107.76	Open To Flow (1)
14	139.26	108.17	Shut-in(1)
45	364.81	109.19	End Shut-in(1)
46	147.54	109.09	Open To Flow (2)
90	276.14	110.02	Shut-in(2)
152	359.02	110.78	End Shut-in(2)
162	1677.57	111.13	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbt)
183.00	Very lightly oil spotted w atery mud	2.57
0.00	Mud 90% Water 10%	0.00
305.00	Muddy water w atery 95% mud 5%	4.28
0.00	Chlorides 48,000 .3ohms 56 degrees	0.00

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

Superior Testers Enterprises LLC

Ref. No: 18348








Printed: 2014.07.07 @ 09:10:58

Image Header 03

Image Header 04

Image Header 05

### ROCK TYPES

 Clystgy	 Lmst fw>	 shale, gry	 shale, red
 Lmst fw<7	 shale, gn	 Carbon Sh	

# ACCESSORIES

## MINERAL

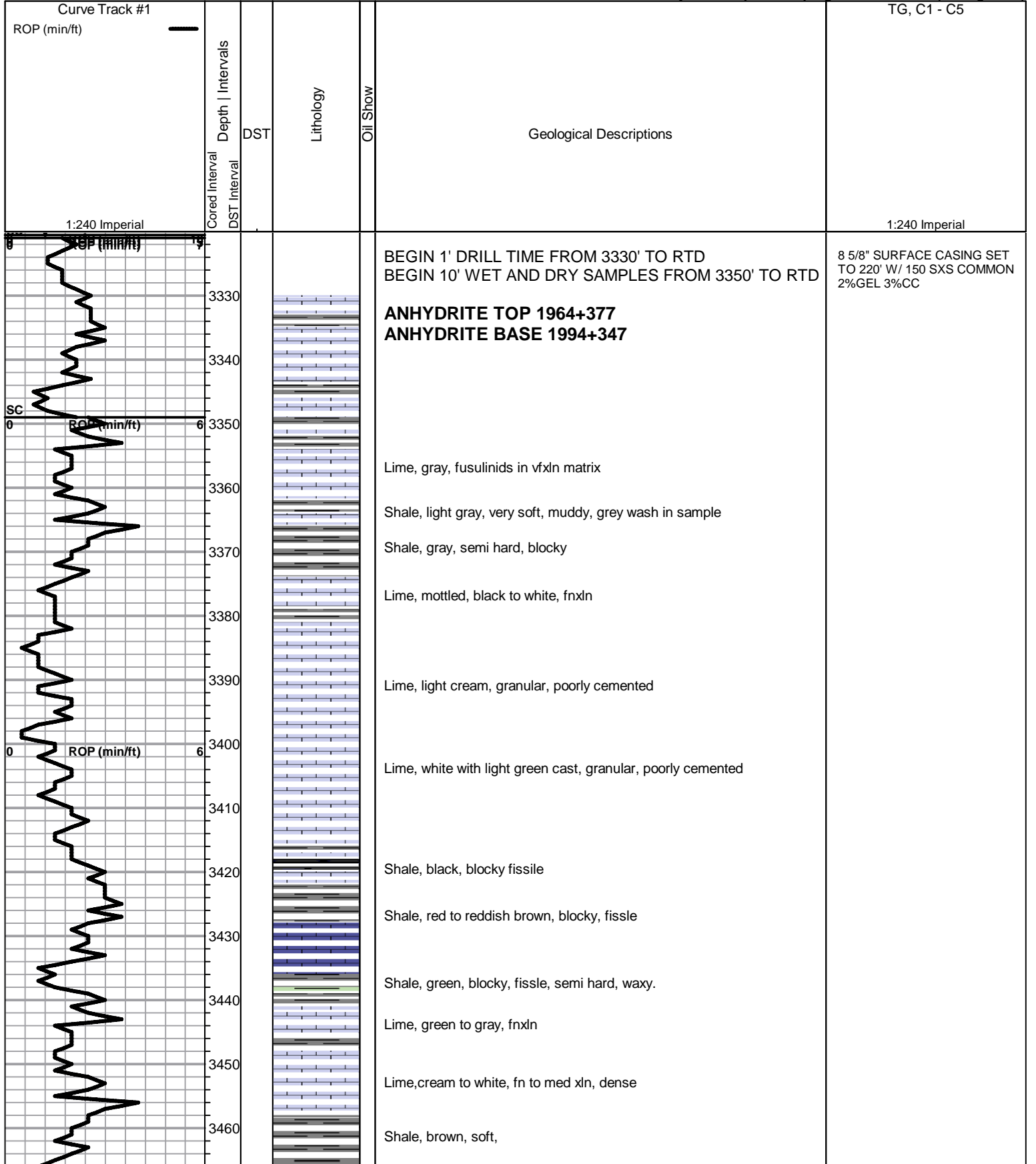
▲ Chert, dark

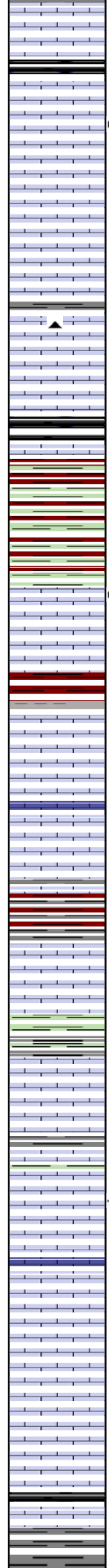
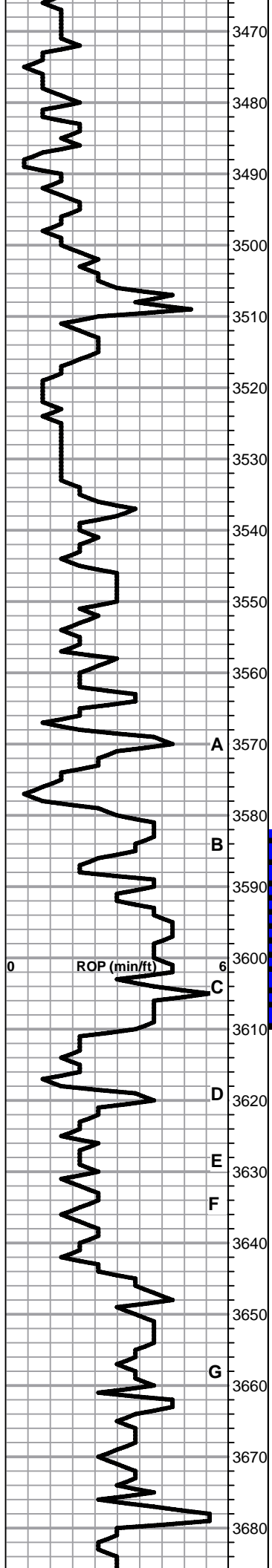
# OTHER SYMBOLS

## DST

■ DST Int  
■ DST alt  
■ Core

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Lime, varied colors, fossil fragments in vfxln matrix

Shale, black carbonaceous, fissile, blocky

3470

3480

Lime, light gray, fxln, small scattered vugs, MSFO, no odor, scattered staining

3490

Liime, light cream, to white, fnxln, dense

3500

Lime, light gray to light green, oolitic, poorly cemented, breaks easy

3510

Lime, gray to light green, fn-micro xln, dense

3520

Chert, bedded, white to light blue, hard break, conq fracture.

**HEEBNER SHALE 3524-1183**

3530

Shale, black carbonaceous, fissile, blocky

Lime, light brown to tan, fnxln, platy

3540

Shale, reddish brown, blocky, fissile

3550

Shale, red to bright ochre, blocky, waxy, semi hard

**TORONTO 3548-1207**

3560

Lime, white, gray caste, mxln, very hard.

Circulated for samples, 20 min. slight odor, strong odor in 40, 60 min. Scattered oil in rock.

SHORT TRIP 3554'

3570

Shale, lt gray to gray, blocky, fissile, waxy in part, semi-hard.

**LKC 3566-1225**

3580

Lime, vfxln, light gray, chert like, dense

3590

Lime, white to cream, fossil fragments, in fnxln matrix

Lime, fnxln, white with very lite green cast in part

3600

Shale, red, blocky, fissile

3610

Lime, white to cream, chalky, soft

3620

Shale, green, soft, green wash in sample

Lime, light green, fxln to mxln, chalky in part

3630

Shale, very light gray, blocky fissile

3640

Lime, white to cream, oolitic clusters, poorly developed porosity, poor permeability. Chalky, oolitic casts present in sample Strong odor, NFO

3650

Lime, white to cream, fossil frags in fnxln matrix, Strong odor, no free oil.

3660

Lime, white to cream, fn to vfxln

3670

Lime, white with light green caste, fn-micro xln

3680

Shale, gray to black, hard, very competent.

DST # 1 3582' TO 3610' "C"  
SEE HEADER FOR TEST SUMMARY

