From: SCHU <SCHU@hq.doe.gov>
Sent: Monday, August 02, 2010 11:43:27 AM
To: "'pahsieh@usgs.gov'" <pahsieh@usgs.gov>
Subject: FW: IN LIEU OF DAILY WIT BP SCIENCE CALLS - Daily Well Integrity Updates and Information

Attachments: Attachment; Attachment

Paul,

Are the uncertainties in the rock compressibility being narrowed as we continue forward in Horner time?

Steve

Steven Chu
Department of Energy

From: Bowen, Amy D [mailto:adbowen@sandia.gov]
Sent: Monday, August 02, 2010 11:34 AM
To: Chavez, Anne K; 'Chief.SMU@noaa.gov'; Aoki, Steven; Burns, Michael J. (LANL); 'chinn3@llnl.gov'; SCHU; 'gcooper@berkeley.edu'; 'Bryan.Domangue@mms.gov'; 'rlg2@us.ibm.com'; 'richard_l._garwin@ostp.eop.gov'; Guffee, Ray M. (LANL); 'lars.herbst@mms.gov'; 'hickman@usgs.gov'; 'John_P._Holdren@ostp.eop.gov'; 'pahsieh@usgs.gov'; Hunter, Tom (Sandia); 'hunsaker61@comcast.net'; Majumdar, Arun; 'mcnutt@usgs.gov'; 'Ray_merewether@seektech.com'; 'mooney@usgs.gov'; 'kathryn_moran@ostp.eop.gov'; OConnor, Rod; 'craig.pohler2@mms.gov'; Rediger, Tony; Michael.Saucier@mms.gov'; 'william.shedd@mms.gov'; 'slocum@mit.edu'; 'slocum42@gmail.com'; Stulen, Richard; 'Troy.Trosclair@mms.gov'; 'sam.walker@noaa.gov'; Ammerman, Curtt N. (LANL); Behr-Andres, Christina B. (LANL); Black, Stephen J. (LANL); Blankenship, Douglas A; Bowen, Amy D; Bowers, Joel (LLNL); Bultman, Nathan K. (LANL); 'kevin.s.cook@uscg.mil'; Dunn, Paul S. (LANL); Dykhuizen, Ronald C; Griffiths, Stewart; Hassan, Basil; 'havstad1@llnl.gov'; 'hickman@usgs.gov'; Hurst, Kathy; Kornreich, Drew E. (LANL); 'miller99@llnl.gov'; 'mooney@usgs.gov'; Morrow, Charles W; O'Sullivan, Donald Q. (LANL); Owens, Missy; 'perfect1@llnl.gov'; Ratzel, Arthur C; Rees, William S. Jr. (LANL); Sims, James Rae Jr. (LANL); Tatro, Marjorie; Tieszen, Sheldon R; Wapman, Derek; Warner, Bruce (LLNL); 'pahsieh@usgs.gov'; 'Philip H Nelson'; 'Larry Mayer'; Behr-Andres, Christina B. (LANL); Maxted, Sarah Jane; Hampton, Devin; Bodette, Amy; 'Catherine B Enomoto'; 'kat_pustay@ios.doi.gov'; 'Flemings, Peter B'; 'Larry Mayer'; 'bills-gailr@cox.net'
Subject: IN LIEU OF DAILY WIT BP SCIENCE CALLS - Daily Well Integrity Updates and Information

All,

In lieu of the daily WIT BP 11:00am CDT Science call, attached please find BP and Government updates for Monday, August 2. These presentations have been posted to the SharePoint site at the following link:

Please contact me with any questions.

https://collaborate.sandia.gov/sites/Deepwater/Shared%20Documents%20-%20New%20Structure/Forms/AllItems.aspx?RootFolder=%2fsites%2fDeepwater%2fShared%20Documents%20%2d%20New%20Structure%2f10%2e0%20Daily%20Meetings%2f10%2e1%20WIT%20Mtgs%2f02%20AUG&FolderCTID=&View=%7bB03F0510%2d7DEA%2d488A%2dAA3C%2d4084A2FB8A50%7d

Thank you.

Amy D. Bowen

Sandia National Labs

575-770-1729

- BP Input 02 AUG_1100hrs_WIT Review[1].pdf - Gov Input-WIT 02 AUG 1100 ppt[1].pdf

MC 252 Well Integrity Test Data Review
24 hour summary: am update

08:00 hrs 2nd August 2010

What has changed: August 2nd, 08:00 am 24 hour summary

Wellhead Monitoring

- **Pressure**
  - 6989.25 psi @ 07:00 (10 psi increase over 24 hours).
- **Temperature**
  - 39.81 ° F, taken at 17:00 hrs on August 1st.
  - Temperature measurement did not resume following ROV maintenance Sunday evening. Issue with ROV or sensor. Troubleshooting underway.
- **Wellhead and Seabed Weeps**
  - Oil weep continues from flange at base and back of capping stack.
  - Bubble samples from seabed weep analyzed at Illinois lab. Isotope analysis indicates biogenic.

Seismic & Water Column Monitoring

- **Seismic and Geophone**
  - No seismic runs on Sunday.
  - No anomalies reported.

Seismic Lines	Attempted	Acquired	Processed	Interpreted
Total	32	26	25	25
Since 8/1	0	0	0	2

- **Surface Sonar Full Water Column Monitoring**
  - NOAA Henry Bigelow operating in area.

Forward Monitoring Plan: August 2nd, 08:00 am

bp

Wellhead Monitoring

- Pressure, Weep Rate, ROV visual and sonar ongoing.
- Temperature and Passive Acoustics will re-commence following troubleshooting and ROV repair.
- Geophone 7th dataset being processed.
- Geophone 8th dataset scheduled for collection early Tuesday morning, August 3rd.

Seismic, Seabed & Water Column Monitoring

- **Seismic**
  - Seismic will be acquired by Nikola this morning, August 2nd.
  - No acquisition planned for Tuesday, August 3rd.
- **Surface Sonar Full Water Column Monitoring**
  - NOAA Henry Bigelow in the field.

Well Integrity/Shut-In Discussion

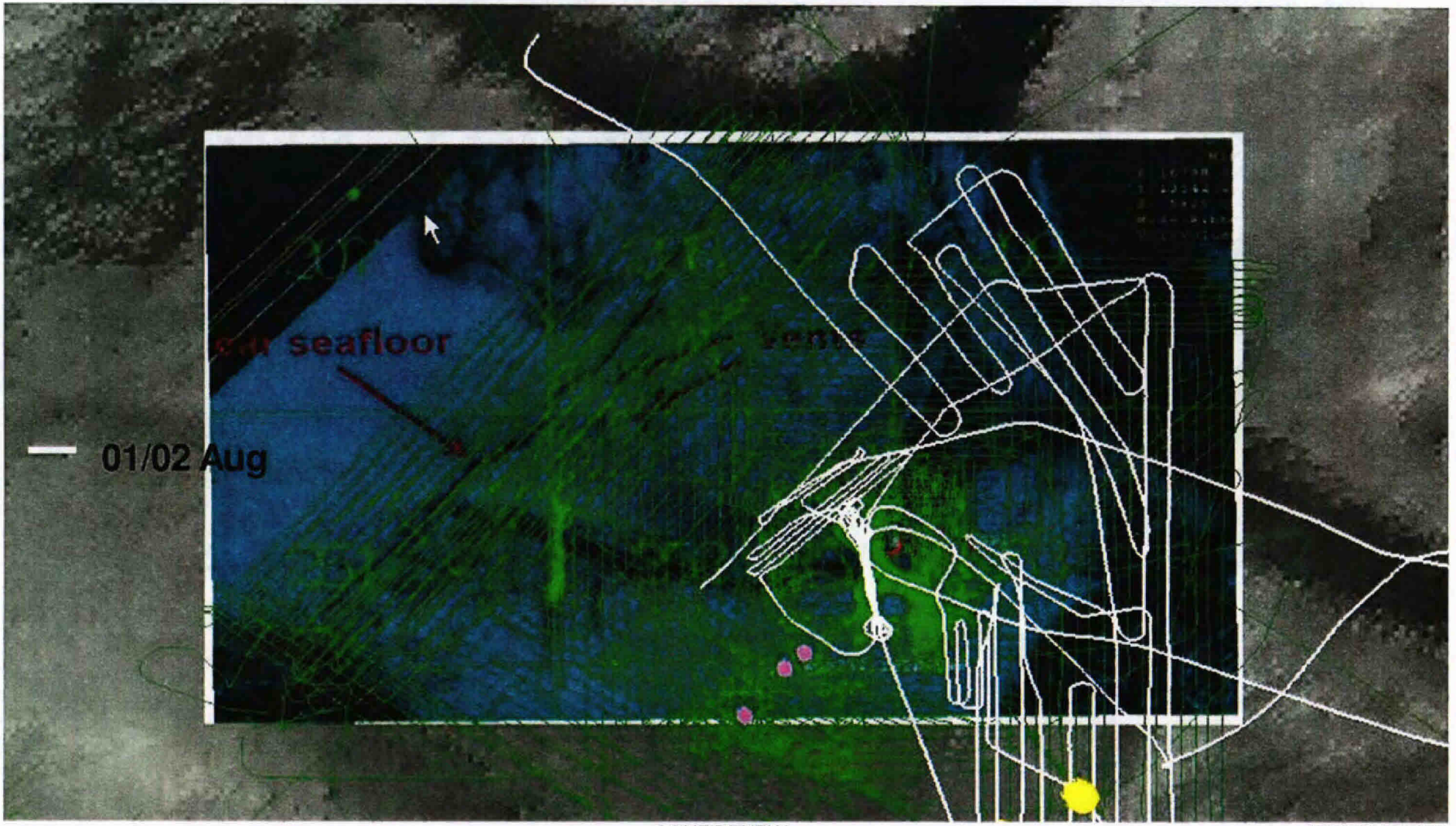
August 2, 2010

11:00am CDT

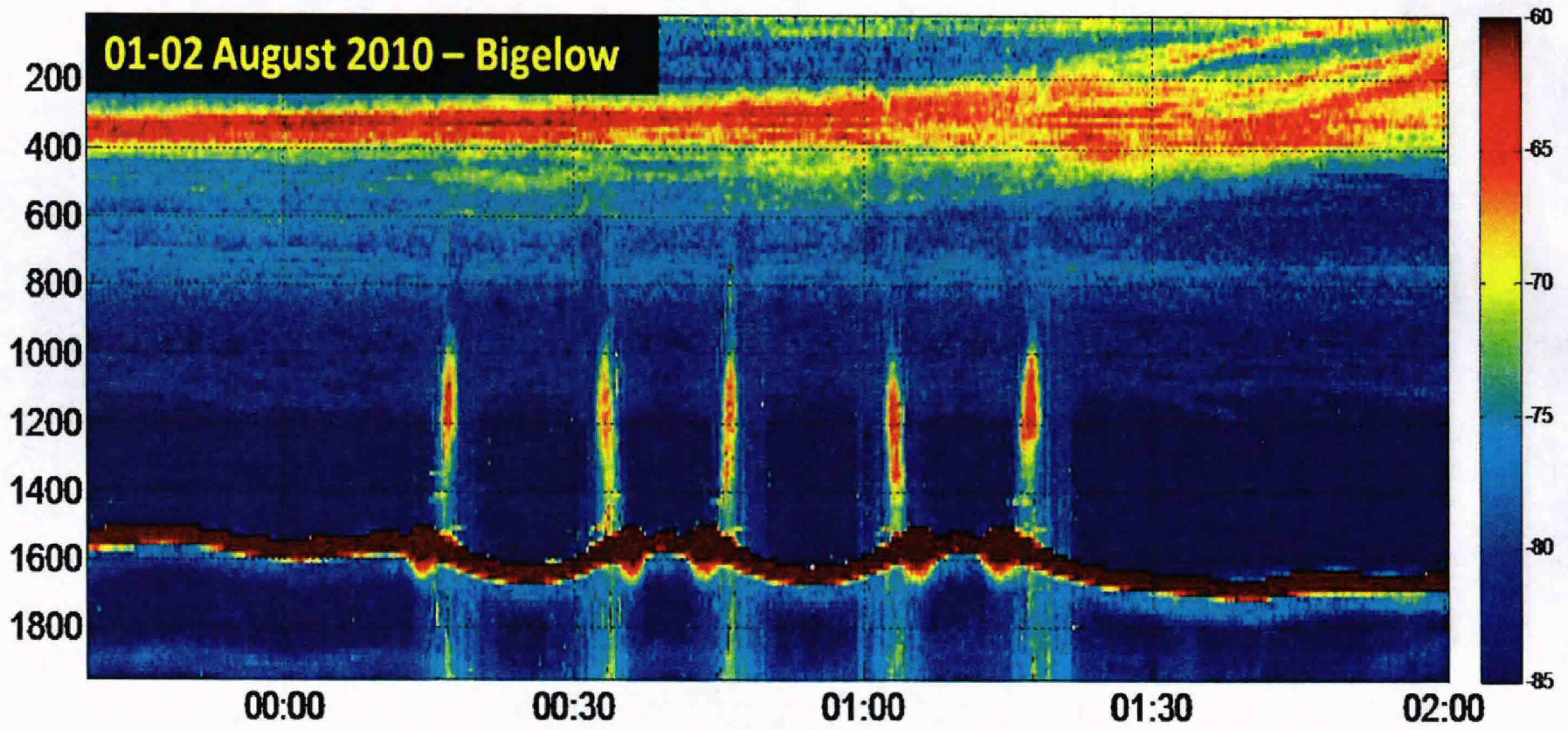
NOAA SONAR MONITORING

2 August 2010 11:00 Central Time Presentation

NOAA SHIP BIGELOW as of 0800 EDT 02 August 2010



01/02 August 2010
BIGELOW transects of well-head



NOAA SHIP BIGELOW
01 - 02 August 2010

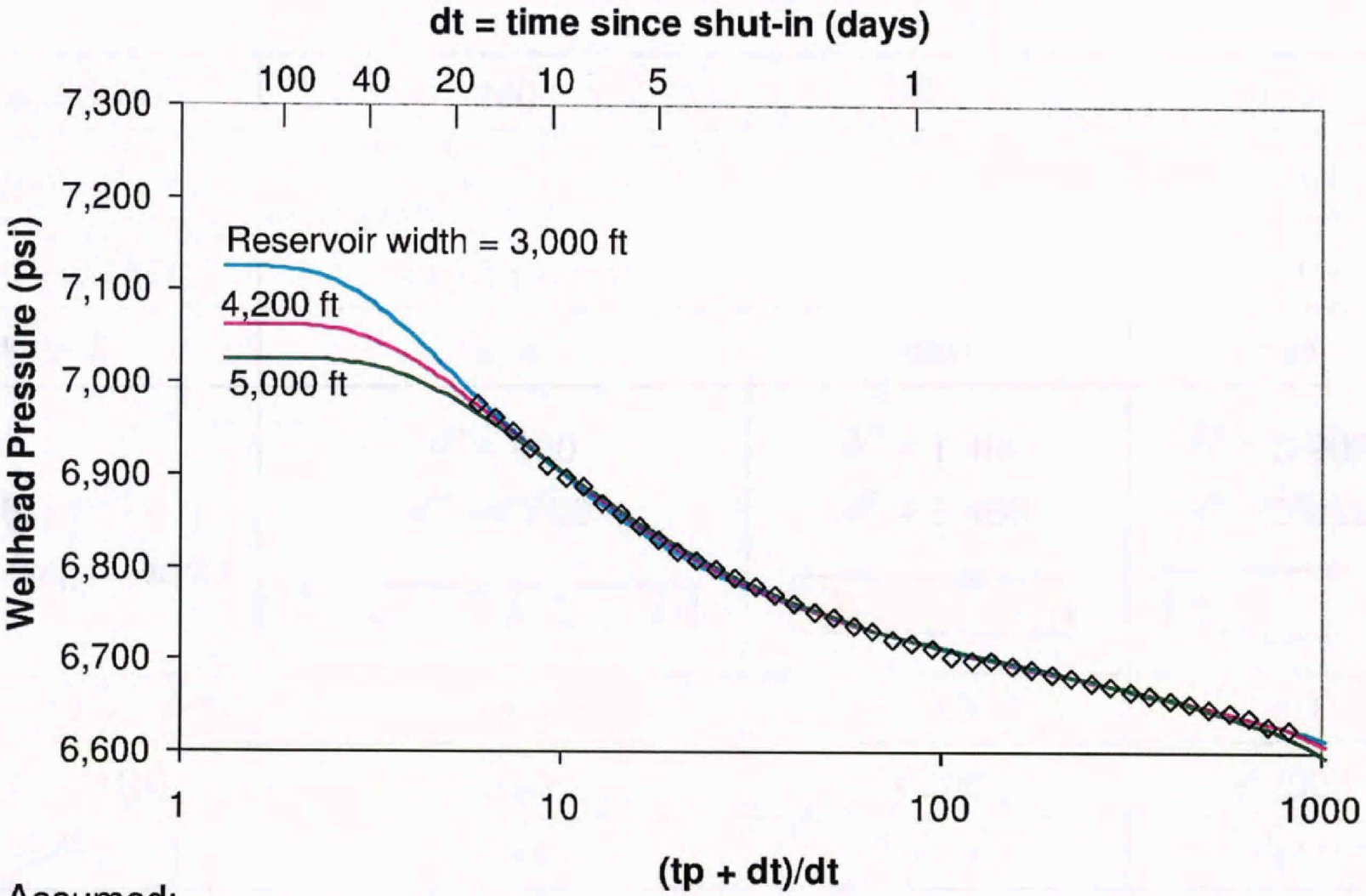
- Working >1.5 km after dark, 500m – 1.5km during daylight, over well-head when possible.

- Ten well-head crossings during daylight hours 01 - 02 August.

- Data over well-head is similar in amplitude and behavior to data collected last week. Bubbles appear relatively steady and rise to above 500m water depth. This implies an oil coating on bubbles. No anomalies.

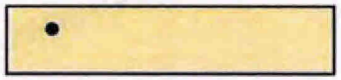
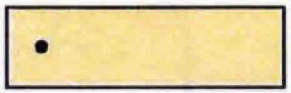
Analysis of shut-in pressure through Aug 1, 2010

Paul Hsieh, USGS



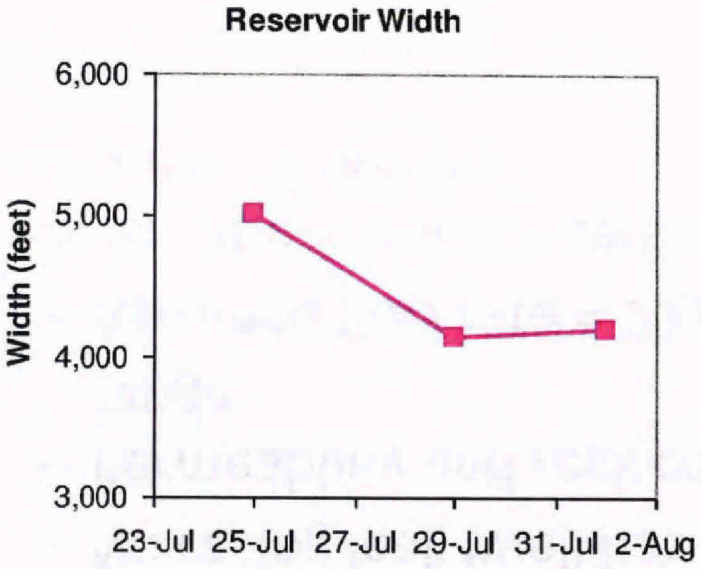
Assumed:
Flow rate = 50,000 stb/day
No aquifer support

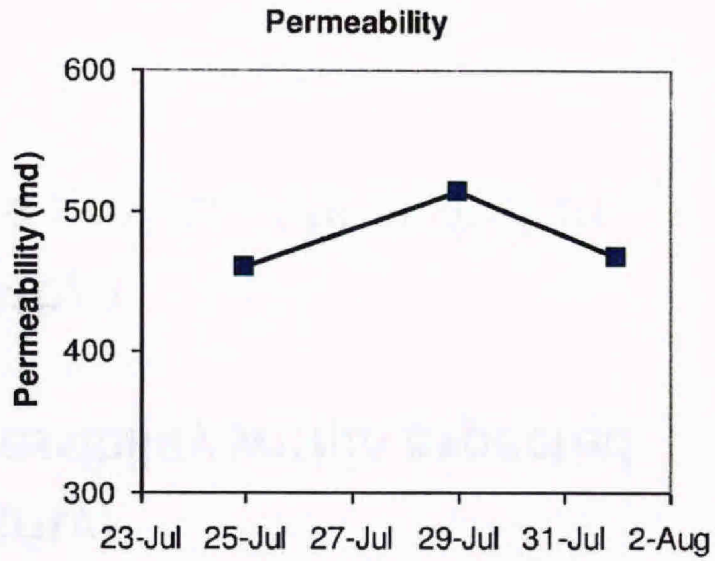
Assumed:
Flow rate = 50,000 stb/day
No aquifer support

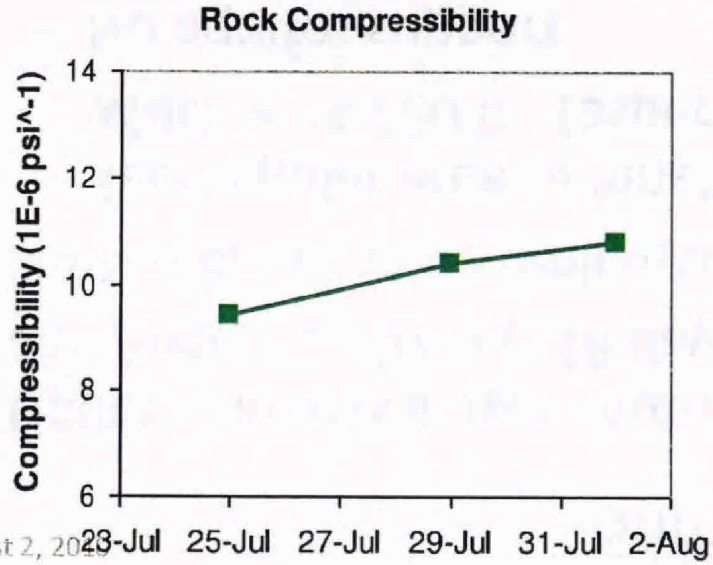
Length (ft)	28,000	20,400	17,000
Width (ft)	3,000	4,200	5,000
Aspect ratio	~ 9:1	~ 5:1	~ 3:1
Well location (ft)	 x_w = 4,600 y_w = 600	 x_w = 2,900 y_w = 1,400	 x_w = 2,070 y_w = 2,500
k (md)	720	440	390
c_r (10^{-6} psi^{-1})	12	11	10
$\bar{p}$ (psi)	7,130	7,060	7,030
SSR (psi^2)	450	150	660

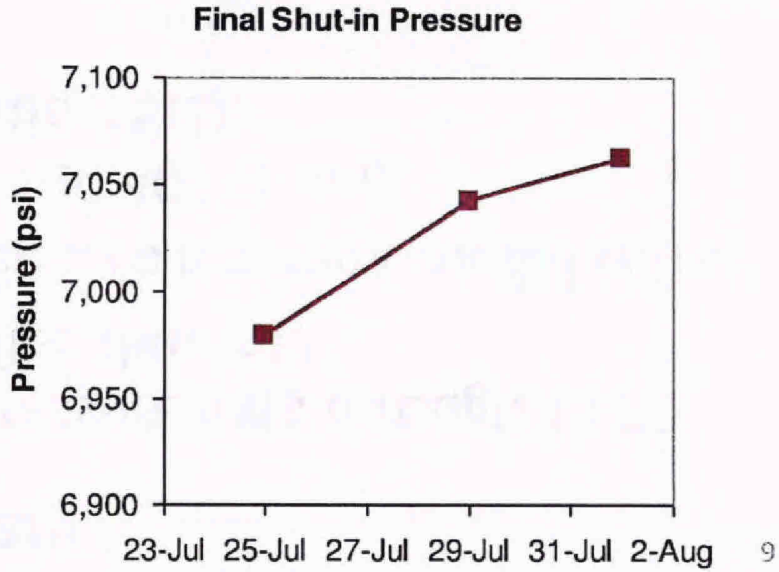
Parameter Estimation History

Assumed:
Flow rate = 50,000 stb/day
No aquifer support









Summary

- Updated analysis uses shut-in pressure data through 11:00 am, August 1, 2010 (~18 days after shut-in).
- Shut-in data can be well matched by a reservoir model with:
  - Rectangular area of length = ~20,400 ft and width = ~4,200 ft (aspect ratio ~ 5:1).
  - No aquifer support
  - No casing leak (well has integrity)
  - Permeability and rock compressibility within expected range
  - Assumed flow rate = 50,000 stb/d
- For the above aquifer setting, the projected final shut-in pressure ~7,060 psi