

COGCC Remediation Project #9425 Update

July 29, 2016

Nelson water well

Construction / Performance

- Completed installation of water recycle / hydro-cyclone type separation finishing system
 - Collected pre and post system samples on July 20, 2016 and had same analyzed for methane concentrations
 - Pre system sample analysis indicated that the incoming stream is still fully saturated.
 - Post system sample analysis indicated a methane concentration of 4.5 ppm

Area Water Well Sampling

- Collected 2nd quarter domestic well water samples from Nelson, Williams Deep and Shallow, Michaels and Woods wells on July 20, 2016
 - Analyses will be completed and results posted to the COGCC data base with copies to staff within the next 2 to 3 weeks

Well remediation

WP-D007-2

- Will recommence stimulation work on this well upon completion of WP-D011-2 remediation
- Bradenhead pressure rate of rise continues to decline (see charts on pages 5 and 6 below)

WP-D011-1

- Executed squeeze jobs at ~2,315 to repair leaking squeeze perforations. Drilled out and performed successful pressure test.
- Installed production packer and production tubing.
- Completed work on July 6, 2016.

WP-D011-2

- Mobilized onto well July 6, 2016 to perform work to mitigate bradenhead pressure issue with well
- Perforated at 1,770' to 1,772' and 1,850' to 1,852' and executed squeeze jobs.
- Will perform pressure tests after drilling out.
- Anticipate completing work on or about August 2, 2016.
- Will monitor bradenhead pressures upon completion of work.

Well remediation

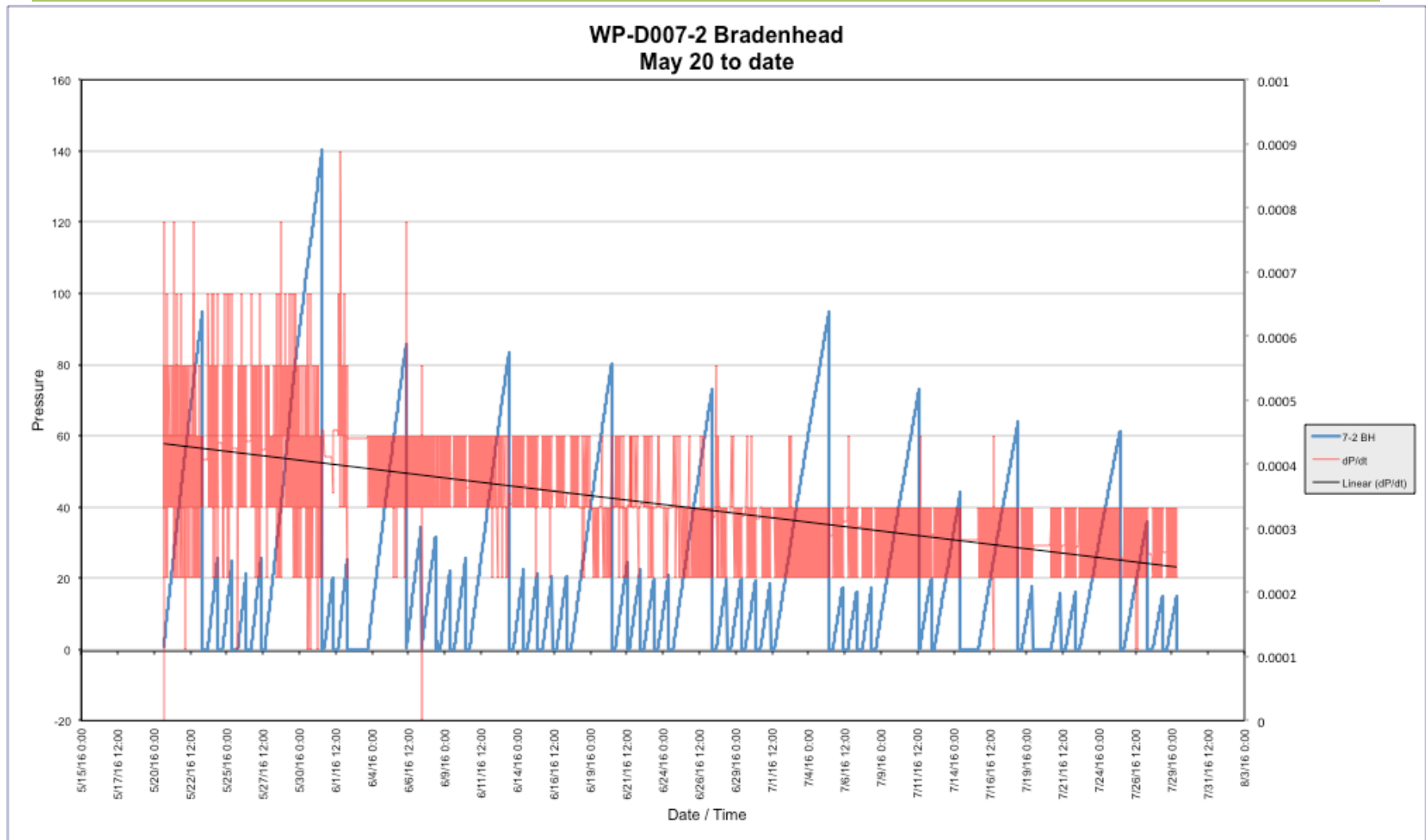
Fox Hills

- Run pulsed neutron logs through Fox Hills interval in Nelson water well, WP-D008-1 and WP-W008 in effort to determine directionality of gas plume in Fox Hills aquifer
 - Work will commence upon completion of work on WP-D007-2
- Develop post mitigation monitoring / evaluation plan

Bradenhead Pressure Mitigation

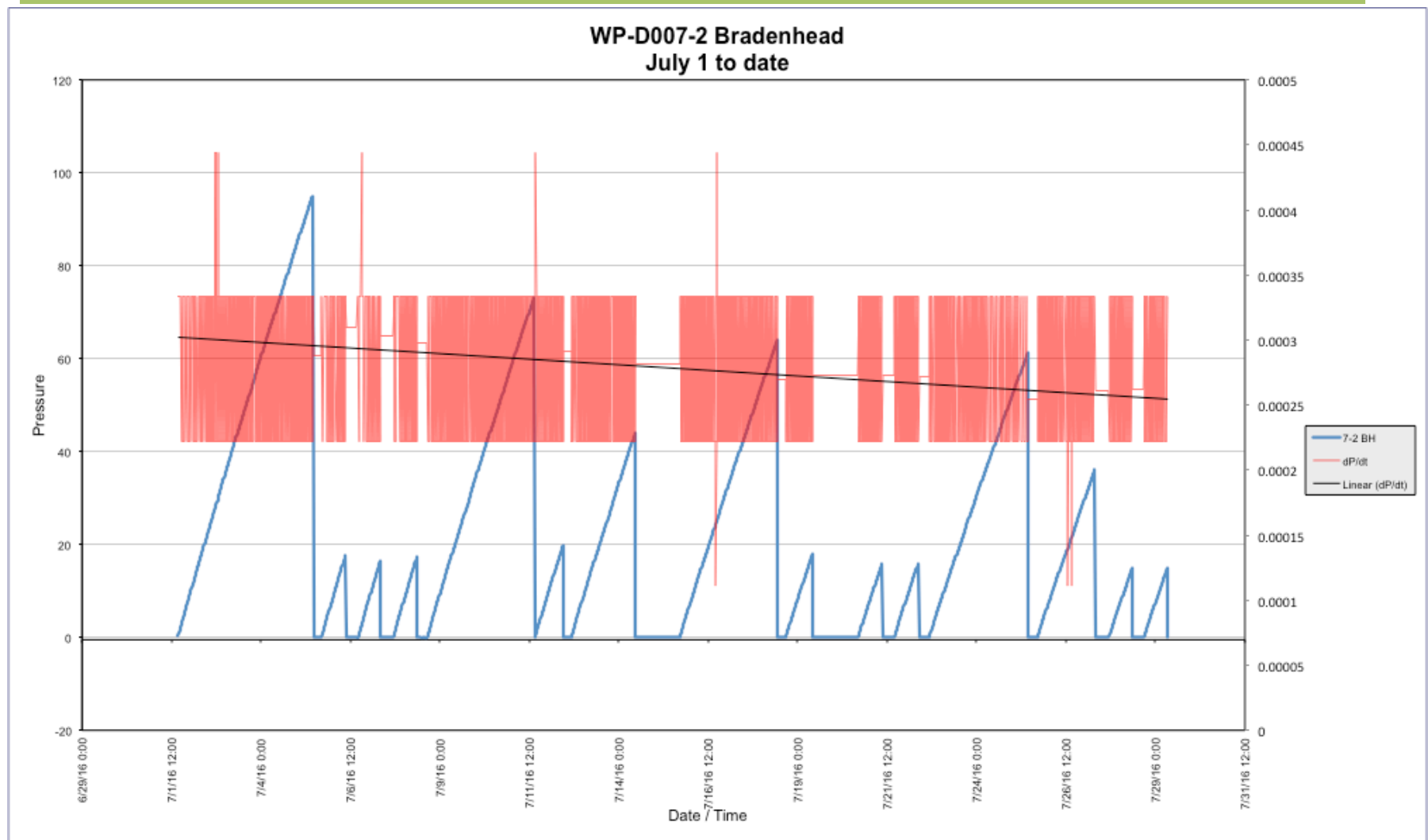
- Execute plan to mitigate high bradenhead pressures on other affected wells

WP-D007-2 post-remediation bradenhead pressure monitoring



Initial Pressure 790 psig

WP-D007-2 post-remediation bradenhead pressure monitoring



Initial Pressure 790 psig