

SED-319

Email from Todd Van de Putte to Phil E. Baker re
Aliso Canyon -Standard Sesnon 25 - Wellhead Leak -
Brief Summary (Oct. 24, 2015)

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Message

From: Van de Putte, Todd [/O=ENOVA/OU=SDGE/cn=Recipients/cn=TVandePu]
Sent: 10/24/2015 6:25:36 PM
To: Baker, Phil E. [/o=ENOVA/ou=SOCAL/cn=Recipients/cn=TPPEB]
CC: Furgerson, Scott P [/o=ENOVA/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=SFurgers]
Subject: Aliso Canyon - Standard Sesnon 25 - Wellhead Leak - Brief Summary
Attachments: SS-25Wellschematic.pdf

Importance: High

Hi Phil,

Here's the current overview/summary of the work accomplished to date (it's a bit of a blur but here it is as best I can do at the moment and I'm sorry if this is too wordy):

10/23/15 (late afternoon): Ops notified/Storage Engineering of a well that was possibly leaking at the SS-25 site. Ops had been on injection that afternoon and they were shutting in. The ops noticed that SS-25 sounded like it was still flowing after being shut-in after injection and they noticed a gas odor on the east side of the well pad along the road at the location. The SS-25 well had no anomalous pressure readings tubing/casing or surface casing prior to that day. No wells in the vicinity of the SS-25 wellsite or the other two wells on the SS-25 site (SS-25A and SS-25B) are currently or were showing elevated surface casing pressures or any unusual pressures from the previous days.

10/23/15 (evening) Met with Ops and Storage Engineering to discuss a plan of attack. The initial plan was to gather the equipment, Halliburton pump truck and brine to plan on killing the well. All of that equipment ultimately arrived on location by 11:00am today (10/24/15).

In the meantime, we suspected the wellhead seals were leaking (as in a top down leak) based on the sounds at the wellhead, a cool to the touch wellhead and a slightly elevated surface casing pressure (140 psig). Cameron wellhead was called out this morning to test and verify the wellhead seal integrity. The primary and secondary wellhead seals were pressure tested to 1600 psig and they bled to 600 psig. Injected plastic packing into the primary seal void and pressure tested the seals to 2200 psig and it held at 1800 psig. There was still audible noise at the wellhead with all the wellhead valves closed.

Well Kill Activity (today): The plan was to pump a polymer pill down the tubing to kill the reservoir and then perform a standard brine well kill. The well currently has an old disabled Camco subsurface safety valve system in the 2-7/8" tubing string place and a Gas lift mandrel above it in the tubing string.

Current Kill Job summary:

SS-25 Well Pressures Prior to Kill: 11-3/4" surface casing: 140 psig / 7" production casing: 290 psig / 2-7/8" completion tubing: 1700 psig

Activity during the well kill: Pumped 11 bbl of 10 ppg XC polymer pill down the 2-7/8" tubing. The tubing pressured up to 3500 psig surface pressure. Shut down the pump. The 7" casing pressure remained at 290 psig surface pressure indicating no communication between the 2-7/8" tubing and the 7" casing annulus.

Decided to perform a "Pump and Bleed" kill procedure on the 7" production casing annulus to fill the tubing/casing annulus. Began pumping @ 3 bbl/min w/ the casing pressure at 290 psig. Pressure on the 7" casing began to drop with 45 bbl of 8.6 ppg brine away. The pressure on the 7" production casing dropped to 250 psig surface pressure. Increased the pump rate to 4 bbl/min. Inspected the wellhead – noise and vibration stopped. Inspected the well location looking for any brine communication to the surface (none seen). Continued to pump and at 89 bbl of brine pumped into the annulus and additional gas flow was noted in cracks in the ground. Immediately shut the pump down – Monitored well pressures and the location.

SS-25 Well Pressures After Kill Attempt (10-24-15-Monitoring):

Time 11-3/4" 7" 2-7/8"

4pm 398 psig 280 psig 100 psig

4:30pm 401 psig 296 psig 140 psig

5pm 306 psig 185 psig

5:30pm 307 psig 200 psig

We currently have the Baker tank, and the Halliburton pump truck parked next to the remote kill header on the location.

At this time, it appears that we had a wellhead seal leak and/or a very shallow 7" production casing leak. While on injection, the leak(s) possibly charged up the 11-3/4" surface casing annulus. The well pad has various spots with venting cracks which are probably allowing the gas bubble in the 11-3/4" surface casing and/or the 7" production casing to vent. We stopped pumping brine into the well in order to allow the gas bubble to subside and to not take the chance of increasing the surface pressure any further. At the moment we are monitoring the location to see if we see a decrease in the venting gas. In the meantime, I would like to get another opinion from Boots and Coots and have them review the situation to see if there are any additional recommendations to remedy the situation. As the well is acting very odd at the moment, I do not want to aggravate the situation....

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