

Miller, Debra

From: Taylor, Mark [mtaylo@wyo.gov]
Sent: Tuesday, December 15, 2009 8:11 AM
To: Striz, Elise
Subject: RE: Screened Interval vs. Log Thickness

Elise: Thank you for the consult...has Uranerz agreed to retest the F sand at the Hank Unit?

From: Striz, Elise [mailto:Elise.Striz@nrc.gov]
Sent: Monday, December 14, 2009 12:22 PM
To: Taylor, Mark; Ingle, Steve; Boyle, Amy
Subject: RE: Screened Interval vs. Log Thickness

I agree with Steve on the rule of thumb for multiwell tests. According to my tables shown below, the BR-F, BR-H and NBHW-13 well tests were single well tests, so they are definitely impacted by h. The multi-well test at URZHF -5 had observation wells at greater than 1.5 times away, but they did not have a response. For the URZHF-1 multiwell test, there were no observation wells, so it is really just a single well test again. The multi-well test at SS1-F had an observation well 150 ft away, so it was the only one that that was more than 1.5 times away and showed a response, but the test was way too short.

I pretty much take single well tests as a very rough estimate as they are subject to so many well effects. As far as I was concerned, none of these tests was of much value as the observation wells were too far away to see the drawdown response in the unconfined aquifer. We asked them to provide new pumping tests with appropriately placed observation wells and use unconfined analysis.

Thanks,
Elise

D/43

Test No.	Start Date	Well	Aquifer	Time (days:hrs:min)	Flow (gpm)	Well Drawdown (ft)	T (gpd/ft)	K (ft/d)
1	7/11/07	Hank 1	F	0:1:05	9.2	12.45	2210	3.5
2	5/2/07	DryWillow 1	F	0:3:42	10.1	4.03	6670	9.4
3A	10/10/79	BR-B	F	0:19:43	14.5	15.17	2530	NR
3B	4/25/07	BR-B	F	0:1:04	12.7	13.87	1970	3.4
4	8/8/07	BR-G	F	0:2:29	2.0	56.97	19	0.14
5	6/21/07	OW43756	F/G	0:2:25	3.1	84.37	18	NR
6A	10/24/79	BR-F	G	0:2:43	0.62	56.65	0.62	NR
6B	6/15/07	BR-F	G	0:2:09	0.11	9.03	2.3	0.005
7A	10/12/79	BR-H	G	0:3:05	1.0	78.38	2.7	NR
7B	5/24/07	BR-H	G	0:2:18	0.5	32.18	2.9	0.022
8	6/28/07	URZHC-2	C	0:3:08	0.3	50.12	1.9	0.025
9	8/08/07	BR-Q	B	0:4:25	2.2	30.86	176	0.38
10	5/16/07	NBHW-13	B	0:2:28	6.0	5.87	1300	2.2
11A	10/12/78	SS1-L	A	0:5:00	NR	59.5	1100	1.1
11B	4/27/07	SS1-L	A	0:2:48	9.8	21.66	843	0.89

Table 2.7.2-4. Uranerz Hank Unit Single Well Pumping Tests

Well	Type	Aquifer	Time (days:hrs:min)	Flow (gpm)	T (gpd/ft)	S	Well Drawdown (ft)	Distance to pumping well (ft)
SS1-F	pumping	F	0:1:29	11	1530	NA	12.84	0
SS1-FPU	OBS	F	0:1:29	NA	1530	6.8e-5	2.24	150

Table 2.7.2-7. Uranerz Hank Unit Multi-Well Pumping Test at SS1-F

Well	Type	Aquifer	Time (days:hrs:min)	Flow (gpm)	T (gpd/ft)	S	Well Drawdown (ft)	Distance to pumping well (ft)
URZHF-5	pumping	F	4:19:26	4.0	470	NA	40.29	0
Hank 1	OBS	F	4:19:26	NA	NA	NA	0.2	500
BR-G	OBS	F	4:19:26	NA	NA	NA	0.2	1000
URZHG-4	Overlying OBS	G	4:19:26	NA	NA	NA	No response	Directly above
URZHB-6	Underlying OBS	B	4:19:26	NA	NA	NA	No response	Directly below

Table 2.7.2-5. Uranerz Hank Unit Multi-Well Pumping Test at URZHF-5

Well	Type	Aquifer	Time (days:hrs:min)	Flow (gpm)	T (gpd/ft)	S	Well Drawdown (ft)	Distance to pumping well (ft)
URZHF-1	pumping	F	2:20:23	1.3	149	NA	19.1	0
URZHG-3	Overlying OBS	G	2:20:23	NA	NA	NA	No response	Directly above
URZHC-2	Underlying OBS	C	2:20:23	NA	NA	NA	No response	Directly below

Table 2.7.2-6. Uranerz Hank Unit Multi-Well Pumping Test at URZHF-1

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From: Taylor, Mark [mailto:mtaylo@wyo.gov]
Sent: Monday, December 14, 2009 12:14 PM
To: Ingle, Steve; Striz, Elise; Boyle, Amy
Subject: RE: Screened Interval vs. Log Thickness

Steve, your comment agrees with what Uranerz is saying and what I was wanting to hear...THANKS!

From: Ingle, Steve
Sent: Monday, December 14, 2009 10:04 AM
To: Taylor, Mark; Striz, Elise; Boyle, Amy
Subject: RE: Screened Interval vs. Log Thickness

Mark,

Kind of a rule of thumb is if the monitor well is at least 1.5 times the thickness of the aquifer away from the pumping well the vertical component becomes negligible. Any closer and the vertical component will give results that tend to be less than the actual aquifer parameters.

I hope this helps a bit.

Steve

From: Taylor, Mark
Sent: Monday, December 14, 2009 9:08 AM
To: Ingle, Steve; Striz, Elise; Boyle, Amy
Subject: Screened Interval vs. Log Thickness

Elise, Amy and Steve

I have concerns with the pump tests results Uranerz presents (i.e. Table D6-5) for the following wells:

Well	Sand Unit	Screen Length (SEO)	Log Thickness
URZHF-5	F	41	91
URZHF-1	F	35	71
BR-F	G	30	10
BR-H	G	40	18
NBHW-B	B	22	78

I am concerned about the difference between the screened intervals and the log thickness used in these calculations. What is your experience with these differences (i.e., fully penetrated vs. partial penetration, etc.). Do you know of any technique to compensate for these differences? Does it really matter that much....am I being overly critical?

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